

**HISTORY OF YUBA - THE FILM
THAT FORMS ATOP HEATED SOYMILK**

(1587-2012):

**EXTENSIVELY ANNOTATED
BIBLIOGRAPHY AND SOURCEBOOK**

豆腐皮

豆腐衣

腐竹



ゆば

湯葉

Also known in Chinese as doufu-pi (“bean curd skin”), doufu i (“bean curd robes / lingerie”), and fuzhu (“dried bean curd sticks”)

Compiled

by

William Shurtleff & Akiko Aoyagi



2012

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 History of the film that forms atop soymilk when heated
 History of protein-lipid film
 History of doufu pi
 History of toufu p'i

 History of beancurd clothes
 History of bean curd robes
 History of bean-curd lingerie
 History of doufu i
 History of toufu yi

 History of dried yuba sticks or rolls
 History of dry yuba sticks or rolls
 History of bean curd sticks
 History of dried bean curd rolls
 History of dried bean milk cream
 History of fuzhu
 History of fu chu

About the Chinese and Japanese characters on the title page:

Left side: Chinese characters
 Top: Doufu pi = Bean curd skin
 Middle: Doufu i = Bean curd robes / lingerie
 Bottom: Fuzhu = Dried bean curd sticks

 Middle (color): Chinese characters from a label
 Fuzhu = Dried bean curd sticks (dried tofu sticks)

 Right side: Japanese characters
 Top: Yuba (hiragana)
 Bottom: Yuba (kanji = "hot water" + "leaf")

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DEDICATION AND ACKNOWLEDGMENTS

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■ Finally our deepest thanks to Tony Cooper of San Ramon, California, who has kept our computers up and running since Sept. 1983. Without Tony, this series of books on the Web would not have been possible.

This book, no doubt and alas, has its share of errors. These, of course, are solely the responsibility of William Shurtleff.

■ This bibliography and sourcebook was written with the hope that someone will write a detailed and well-documented history of this subject.

INTRODUCTION

What is yuba?

If you have ever simmered a pot of milk over very low heat or set a bowl of hot milk aside to cool, you have no doubt noticed the thin, delicate film that soon forms on the milk's surface. The longer it is allowed to set, the firmer and thicker it becomes. And if you have ever tried lifting this film off and tasting it, you may well have found it to be soft, warm, and delicious.

In the same way, if fairly thick soymilk is gently heated in flat and open pans at about 80-90°C, a thin cream-yellow, water-insoluble film soon covers its surface. In Japan this film is called yuba, and since ancient times it has been considered a true delicacy. Removing the first film from the soymilk surface (by carefully inserting a long skewer or shaft beneath it, then hanging it up to dry) makes way for the rapid formation of the next film. Many films can be removed from the surface and hung up to dry. The first film removed is generally considered to be the highest quality and the last the lowest. Yuba is also nutritious, containing 55% protein and 25% vegetable oil on a dry weight basis.

Yuba is easily prepared at home, and since it is best when fresh and warm, yuba made in your own kitchen and served as an hors d'oeuvre or as part of a meal will have a tenderness and fragrant richness that can far surpass that of the yuba ordered from even the finest traditional shops.

In what countries is yuba widely used?

Yuba is used throughout East and Southeast Asia but it is made and used most widely in China, where it is relatively inexpensive.

One traditional and very popular form of yuba, especially in China, is dried yuba sticks. The dried sticks have long had the great advantage that they can be kept or stored for months at air temperature with little or no loss in quality or flavor. Their name in pinyin is *fuzhu* and in Wade-Giles *fu chu*. The first Chinese character is the *fu* in tofu. The second means "bamboo," because the shape and color of this dried yuba reminds one of a tan bamboo shoot. Dried yuba sticks are made only in areas of Chinese culture – not in Japan.

In Japan, yuba is more of a specialty, elite, expensive food; the center of yuba culture is Kyoto, the ancient capital of Japan. Yuba is also fairly well known in Vietnam, etc.

Why do we call it "yuba" instead of "bean curd skin"?

In China, where it probably originated and is still most widely used, yuba is typically called *doufu pi* ("bean curd skin") although it is also occasionally called *doufu-yi* ("bean curd robes / lingerie"). On the English-language menus of Chinese restaurants in the United States, yuba is generally called "bean curd skin" – an extremely unappetizing and

inaccurate term. Yuba is not the skin of tofu. It no longer has anything to do with tofu, except that both are made from soymilk.

In Japan today the word "yuba" is written either with two Japanese hiragana characters or with the two Chinese (kanji) characters that mean "hot water" + "leaf." In 1843 these two kanki characters were first used to mean yuba in the *Tsukue no Chiri*. The twin facts that (1) the word "yuba" is written in Japanese hiragana script, and that (2) the Japanese do not presently use the traditional Chinese characters ("bean curd" + "skin") suggest that the Japanese may have developed yuba before they learned about it from China.

Why not call it "tofu skin"? First, yuba no longer has anything to do with tofu. Second, the word "skin" is not appealing or appetizing in English. Third, "tofu skin" can be confused with "pressed tofu sheets." Fourth, as of Nov. 2012, the term "tofu skin" has almost never been used historically. It appears only twice in the body of this book.

Our philosophy of naming foreign foods: Our main purpose in giving English-language names to Asian soyfoods is to try to help them become part of the English language and English-speaking foodways. We look for a name that is appealing, descriptive (green vegetable soybeans, fermented black soybeans) or short (where there is no good English counterpart - tofu, miso, tempeh, yuba), and easy to remember. In addition to being short, we believe that the Japanese name "yuba" is elegant and easy to remember – as in Yuba City, Yuba County, and the Yuba River in California. Because the word "Yuba" already exists in English, the application of "yuba" to a food, invites curiosity.

Brief chronology / timeline of yuba.

1587 Jan. 24 – The earliest known reference to yuba, worldwide, appears in Japan in the *Matsuya Hisamatsu chakai-ki* [Three-generation diary of the Matsuya family's tea ceremonies]. The writer at this time, Matsuya Hisamasa, states simply that yuba is the film that forms atop soymilk when it is heated.

1596 – The second earliest known reference to yuba, worldwide, appears in China in the *Bencao Gangmu* [The great pharmacopoeia] by Li Shizhen. This classic work was completed in 1578, but not published until 1596. So it could reasonably be argued that yuba was first mentioned in Chinese in this book. Chapter 25 states: If a film should form on the surface of soymilk when it is heated in the process of making tofu, it should be lifted off and dried to give *doufu pi* (literally "bean curd skin" [yuba]) which is itself a delicious food ingredient (First cited by Huang 2000, p. 303, 323).

Since the process for making yuba today apparently has nothing to do with the process for making tofu, we naturally ask: Why does the Chinese word for “yuba” mean bean curd skin? The earliest known answer appears in this book.

1695 – The third earliest known reference to yuba appears in Japan in the *Ben Zhao Shi Jian* (Wade-Giles: *Pen Chao Shih Chien*) [A Mirror of Food in This Dynasty, 12 volumes]. The book is written by a Japanese man (Hitomi Hitsudai) in Japan, yet it is entirely in Chinese. When Japanese read the Chinese characters for yuba, *doufu-lao*, they pronounce them *tōfu no uba*. *Lao* or *uba* means “old woman” or “wet nurse.”

1711 – The fourth earliest known reference to yuba appears in Japan in the *Wakan Sansai Zue* [Collection of Japanese and Chinese diagrams and drawings of all things], by Terajima Ryōan [40 books]. This is Japan’s oldest encyclopedia. The section on yuba states: “Tofu film is made on the surface while making tofu. It looks like yellow paper. If you stir too much, the film will not form properly. If you wish to obtain the film, add coagulant and boil the milk. The wrinkled look of the film resembles (the skin of) an old woman. If you remove too much film, the yield of tofu decreases and the tofu becomes hard to eat.” Yuba is referred to as *doufu-pi*, the present Chinese term. When the text notes that yuba “resembles (the skin of) an old woman,” it seems to imply that the earlier term *lao* or *uba* was used because of the similarity of yuba and an old woman’s face.

Once again we see expression of the deep and ancient connection between making bean curd (tofu) and making bean curd skin (yuba).

1790 – Yuan Mei, the famous Chinese gourmand, poet, and man of letters, in his classic book *Suiyuan Shidan* [Recipes from the Sui Garden] includes a recipe (apparently vegetarian) for “Mock roast goose made with yam wrapped in *doufu pi*” [yuba].

1813 – The *Kyōnan rubetsu-shi* (Japan) is the earliest document seen that contains the word *yuba*. The first character, *yu*, written the same as it is today, means “hot water.” The second character *ba* meaning “old woman,” is different from the character used today.

1819 Feb. – Yuba is first mentioned in an English-language document – *The Port Folio*, a periodical published in Philadelphia and London. It states: “The Chinese make great use of beans, not only to feed their sheep and cattle, but also as food for themselves, in what they call, ... *foo chack*... [dried yuba sticks].”

1858 April – Dried yuba sticks are now being exported from Hong Kong to Australia – where they are advertised and sold as “Beanstick.” This is the earliest known document showing

yuba in international trade.

1866 Oct. – Yuba is first mentioned in French in an article by Paul Champion titled “On the production of tofu in China and Japan.” He says (in translation): In the process of making tofu, the hot soymilk is poured into a second tub and allowed to cool before the coagulant is added. The foam is removed using a copper scoop. After several minutes, a skin / film (*une peau*) [yuba] forms on the surface of this liquid. It can be lifted off by passing a stick (*baguette*) underneath it and hung up to dry by inserting one end of the stick into one of many holes that have been deliberately created in the wall. This film, by the way, has a rather agreeable taste, and is eaten either fresh or dried; a second film is often formed and is lifted off in the same manner.

Champion is yet another writer to point out the deep, traditional connection between bean curd (tofu) and bean curd skin (yuba).

At least 8 other writers, worldwide, would repeat this basic idea of how yuba is made in future.

1870 Jan. 2 – *The New York Times*, in an article titled “The Chinese,” explains how about 250 Chinamen have arrived to work on a railroad in Texas. It was found necessary to establish a store in the vicinity of the place of labor. As a result of negotiation, the following goods were bought in Texas: “foo chuck, or bean curd sticks [dried yuba sticks], 10 boxes, or 400 pounds;... 10 boxes soy [sauce], 10 jars catsup,...” “The men are to receive \$30 coin per month.”

1874 – Yuba is first mentioned in a German-language document – in an article by H. Ritter in which he refers to it as *Das Uba*.

1918 March – Arao Itano, in an article on “Soy beans (*Glycine hispida*) as human food,” gives the earliest known description of how to make yuba at home – published in English in *Massachusetts Agricultural Experiment Station, Bulletin* No. 182. Unfortunately his description is too vague to be practical.

1923 – In their classic, *The Soybean*, Piper and Morse publish the earliest known photograph of yuba being made commercially.

They also give the earliest known practical and useful description of how yuba is made on a commercial scale (p. 246).

1926 April 3 – The earliest known article about how to make dried yuba sticks (*fu chu*) is published in the *Chinese Economic Bulletin* (p. 179-80).

1965 – William Brandemuhl, who studies soybean utilization in Japan for two years after World War II, gives the earliest

known industry and market statistics for yuba in any country worldwide, in his unpublished book *Soybean Utilization in Japan*.

1970 – The earliest known scientific study of yuba (in any country) is conducted by Mr. L.C. Wu of the Department of Food Science at the University of Florida (Gainesville). He wrote his MS thesis on yuba: *Lipid-Protein Films for Human Consumption*.

Wu (1972a,b, 1973) and Bates and Wu (1975), both in the same department, published subsequent detailed studies of methods for increasing the yield and quality of yuba, and of the basic endothermic polymerization involved in yuba formation.

1975 Dec. – In *The Book of Tofu*, in a long chapter about Yuba in Japan, Shurtleff & Aoyagi give: (1) The earliest known useful and detailed description of how to make yuba at home. (2) The earliest known description in English of the many types and varieties of yuba in Japan. (3) A detailed description of yuba in China.

1979 July – In the book *Tofu & Soy milk Production*, in a long chapter about Yuba, Shurtleff & Aoyagi give the most detailed and complete description seen to date of how to make yuba on a commercial scale.

1980 spring – The Soy Plant in Ann Arbor, Michigan, is the first company in America to make ready-to-eat yuba delicacies. Jura McDowell, a black member of the group, developed Yuba Rolls, using yuba made on a kitchen scale. It was cut into 3½ by 5-inch rectangles, filled with seeds, sauteed vegetables, and seasonings, then rolled tightly.

1982 Feb. – Soyfoods of America, in Duarte, California (near Los Angeles), opens the first yuba manufacturing company in the Western world. The owner, Mr. Ken Lee and his technical director, Lawrence Wu, both Chinese Americans, build a very modern, semi-mechanized plant, drawing on Wu's research in modernizing yuba production. Their main market is Chinese restaurants nationwide.

1982 April – Shurtleff and Aoyagi finish writing "History of Yuba" (15 pages, unpublished). Worldwide in scope and the first English-language history of yuba, it now appears on their website.

2004 May – Basic Soy Beanery (renamed Hodo Soy Beanery in Sept. 2005) starts making yuba and tofu in San Jose, California. Their first three yuba products are: Yuba (Tofu Skin), Soy Omelette (with Yuba), and Poached Yuba Loaf. In 2009 they moved into a new plant in Oakland, California, and in August began to make yuba there. Minh Tsai, the founder, has been a pioneer in introducing yuba to

Bay Area restaurants and consumers. He likes to call it "the lingerie of tofu."

Alphabetical list of names of yuba (useful for searching digital / electronic text):

Amayuba
 Ama-yuba or ama yuba
 Bamboo yuba
 Beancurd skin(s)
 Beancurd sheet(s)
 Beancurd sticks(s)
 Bean curd sheet(s)
 Bean-curd skin
 Bean curd robes
 Bean curd sticks
 Bean milk cream
 Beanstick(s)
 Bean sticks
 Chinese beanstick
 Com tam tau hu ki suon bi
 Chinese beanstick
 Dou fu bao
 Doufu pi
 Doupi
 Dried bean curd stick(s)
 Dried bean milk cream
 Dried bean milk cream in tight rolls
 Dried bean milk cream rolls
 Dried Chinese beanstick
 Dried rolls of bean milk cream
 Dried skin of bean milk
 Dried soybean milk skin
 Dried soymilk film
 Dried tofu skin
 Dried tofu stick(s)
 Er chu
 Film membrane
 Fleshy skim from soymilk
 Foo chook
 Foo chuk or foo chuck
 Fooh jook
 Fresh tofu skin packets
 Fuchu
 Fu chu or fu-chu
 Fu jook pei
 Fu pi chi
 Futomaki-yuba
 Fuzhu
 Han-gawaki yuba
 Hira-yuba
 Hoshi-yuba
 Kanso-yuba

Kirehashi yuba
 Kiri-komaki yuba
 Kiyuba or ki-yuba
 Kuzu-yuba
 Komaki yuba
 Lipid film
 Lipid-protein film(s)
 Maki-yuba
 Mimi
 Musubi-yuba
 Nama-gawaki yuba
 Nama yuba or nama-yuba
 Oharagi yuba
 Omaki-yuba
 Phu chuc
 Protein film
 Protein-lipid films
 Skim from soymilk
 Skin of bean curd
 Skin of bean milk
 Skin of bean milk cream
 Soybean film
 Soybean milk clot
 Soybean milk skin
 Soymilk film
 Soymilk sheet
 Soymilk skin
 Soy skin
 Suhuo-t'ui
 Su ngo
 Taira-yuba
 Tau hu ky
 Tau hu ky kho
 Tau hu ki tuoi
 Tender fleshy skim from soymilk
 Tien chu
 T'ien ch'u
 Tiem jook
 Tightly rolled skin of bean milk cream
 Tim jook
 Tofu skin
 Tofu skin packet(s)
 Tom tau hu ky
 Tofu p'i or Tou-fu p'i or tou fu p'i
 Tou-yu p'i
 Toyuba
 Tsumami-agé
 Uzumaki-yuba
 Wet soybean film
 Yu p'i

ABOUT THIS BOOK

This is the most comprehensive book ever published about the history of yuba. It has been compiled, one record at a time over a period of 35 years, in an attempt to document the history of this unique soyfood. It is also the single most current and useful source of information on this subject.

This is one of more than 100 books compiled by William Shurtleff and Akiko Aoyagi, and published by the Soyinfo Center. It is based on historical principles, listing all known documents and commercial products in chronological order. It features detailed information on:

- 46 different document types, both published and unpublished.
- 668 published documents - extensively annotated bibliography. Every known publication on the subject in every language.
- 50 unpublished archival documents.
- 33 original Soyinfo Center interviews and overviews never before published.
- 13 commercial soy products.

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

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

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

A complete subject/geographical index is also included.

ABBREVIATIONS USED IN THIS BOOK

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

HOW TO MAKE THE BEST USE OF THIS DIGITAL BOOK - SEARCH IT

Most Important Thing: The **KEY** to using this digital book, which is in PDF format, is to **SEARCH IT** using Adobe Acrobat Reader: For those few who do not have it, Google: **Acrobat Reader** - then select the **free** download for your type of computer. Then...

Type [Ctrl+F] to “Find.” Near the top right of your screen a white box will appear.
Click the small down-pointing arrow just to the right of that box to get a menu.
Click “Open Full Acrobat Search.”
At the left side of your screen a “Search” box will open.
When asked: “What word or phrase would you like to search for?” type that word or phrase in the box.
For example: Hodo or Bean curd. No need to use quotation marks. Then click “Search.”
At “Results” click any line that interests you.

For those using a Mac without Acrobat Reader: Safari is often the default browser. Click “Edit” in the toolbar at top. In the dropdown click “Find,” then click “Find...” again. A search bar will open across top of screen with a search box at right. In this box type a word or phrase you would like to search, such as Hodo or Bean curd. Click “Done” then scroll through the various matches in the book.

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

A Reference Book: Like an encyclopedia or any other reference book, this work is meant to be searched first - to find exactly the information you are looking for - and then to be read.

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

Each record in the book has been assigned a sequential number, starting with 1 for the first/earliest reference. It is this number, not the page number, to which the indexes refer. A publication will typically be listed in each index in more than one place, and major documents may have 30-40 subject index entries. Thus a publication about the nutritional

value of tofu and soymilk in India would be indexed under at least four headings in the subject and country index: Nutrition, Tofu, Soymilk, and Asia, South: India.

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

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

Most Important Documents: Look in the Index under “Important Documents -.”

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

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

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

Industrial (Non-Food) Uses of Soybeans: Look under “Industrial Uses ...” for more than 17 subject headings.

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

Nutrition: All subjects related to soybean nutrition (protein quality, minerals, antinutritional factors, etc.) are indexed under Nutrition, in one of more than 70 subcategories.

Soybean Production: All subjects related to growing, marketing, and trading soybeans are indexed under Soybean Production, e.g., Soybean Production: Nitrogen Fixation, or Soybean Production: Plant Protection, or Soybean Production: Variety Development.

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

Commercial Soy Products (CSP): See "About This Book."

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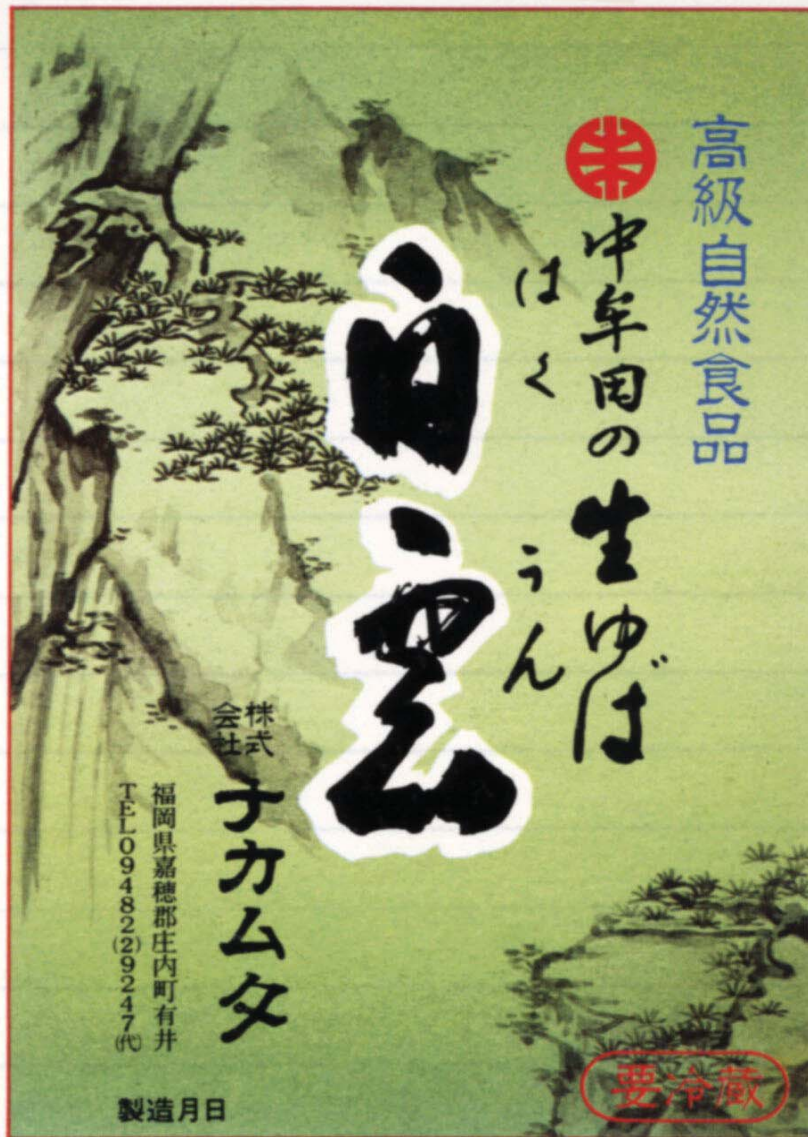








Japanese Yuba Label



HISTORY OF YUBA

1. Matsuya Hisamasa. 1587. Uba [Yuba]. In: Matsuya Hisamatsu chakai-ki [Three-generation diary of the Matsuya family's tea ceremonies]. Jan. 24. Compiled by Hisashige Kaiki. Japanese summary by Kawakami 1978, p. 261. [Jap]*
 • **Summary:** Concerning yuba—the film that forms atop soymilk when it is heated: According to Kawakami (1978), the entry in this diary for 24 Jan. 1587 contains the earliest known reference to *uba* (yuba) in Japanese. Kawakami and Kimura (1985) repeat this information.

Note: This is the earliest document seen (Oct. 2012) worldwide that mentions yuba, which is called *uba*. Note that it is from Japan rather than China. Address: Japan.

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

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

Soybeans and soyfoods are discussed in two chapters of this book. Chapter 24 contains sections on soybeans, soybean sprouts, and yellow soybeans, in that order. Chapter 25 has sections on fermented black soybeans, yellow molded soybeans (Jap. soybean koji), tofu and yuba (*doufu pi*), jiang, and soy sauce. Concerning yuba: If a film should form on the surface of soymilk when it is heated in the process of making tofu, it should be lifted off and dried to give *doufu pi* (yuba), which is itself a delicious food ingredient (Huang 2000, p. 303, 323).

Note 1. This is the earliest Chinese-language document seen (Oct. 2012) that mentions yuba, which it calls *doufu pi*.

Note 2. This is the earliest document seen (Oct. 2012) that describes yuba as being removed at the start of the tofu-making process. If this description is correct it could help explain the deep and ancient connection between making bean curd (Chinese: *doufu*; Japanese: *tofu*) and making bean curd skin (Chinese: *doufu-pi*; Japanese: *yuba*).

The first part of each section is titled “Explanation of names”; when these simply repeat material we have translated from earlier Chinese documents, we will not retranslate it. Another part of each section explains each food

/ medicine in terms of its “nature” or “vital energy” (*qi*, hot, warm, neutral, cool, and cold) and “flavor” (*wei*, bitter, sour, sweet, pungent, salty).

The section titled “Soybeans” (*dadou*) begins by stating that soybeans are considered a “middle class drug / medicine” according to the *Shennong Bencao Jing* (*Benjing*) (Classical pharmacopoeia of Shennong, the Heavenly Husbandman) (+100). This section has four parts: (1) “Explanation of names.” The soybean is *shu*. The pods are called *jia*. The leaves are called *huo*. The stems are called *qi*. (2) “Explanation of uses.” After quoting information from earlier Chinese sources, he states: The different soybean varieties are black, white, yellow, spotted / speckled (*ban*), green, and striped. The black ones are also called *wudou*. They are used for both medicine and food, and for making fermented black soybeans (*shi*). The yellow ones are good for making tofu (*fu*), for pressing to obtain oil, or for making jiang. But the other soybean varieties can also be used to make tofu and can be cooked for food. They are usually planted before summer. The young plants (*miao*) grow to a height of 3-4 feet. The leaves are pointed. In the fall they have small white flowers which come in clumps about one inch across. The plants wither in the frost. According to the *Lüshi Chunqiu* (Master Lü's spring and autumn annals) (239 B.C.), when soybeans are in season, the stems are long and the branches are short. The pods come in groups of 27. The more branches there are, the more nodes. The large soybeans (*shu*) are round; the small soybeans (*shu*) are oval. The early varieties tend to grow like vines. The leaves float. The nodes are further apart. The pods are smaller and not solid. The later varieties have fewer nodes, less space between nodes, and they are less solid. According to the *Fan Shengzhi Shu* (The book of Fan Shengzhi {on agriculture}) (10 B.C.), if you plant soybeans in early summer, you should not plant them deep because the flowers do not like too much sun; they will rot and the roots will be scorched. One should adjust the depth of planting according to the variety. [After harvesting] store soybean seeds in a level, shady place in a bag. Take them out 15 days after winter begins; then you can use them for planting. Soybeans can be stored quite easily for one full year, so they can be kept in preparation for a famine year.

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

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

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

The section titled “Soybean sprouts” (*dadou huangjuan* or “soybean yellow curls”) has two parts: (1) “Explanation of names.” These are sprouted [soy] beans (*dounie*). Allow the black soybean to sprout until it is 5 inches (*cun*) long. Then dry it; this is called *huangjuan* (“yellow curls”). It becomes very small when dried. (2) Nature and flavor (*qiwei*): Sweet, neutral, nontoxic. Note 3. This is the earliest document seen (April 2003) that uses the term *dounie* to refer to “sprouted soybeans.”

The section titled “Yellow soybeans” (*huang dadou*)—explanation of food uses—is divided into three parts: (1) “Explanation of names.” Similar to the passage above stating that yellow soybeans are good for making tofu (*fu*), for pressing to obtain oil, for making jiang, etc. (2) Nature and flavor (*qiwei*): Sweet, warm, nontoxic. (3) Soybean oil (*douyou qiwei*) nature and flavor: Pungent, sweet, and hot (*re*); slightly toxic. Note 4. This is the earliest document seen (Feb. 2003) that uses the term *huang dadou* to refer to yellow soybeans.

Note 5. This is the earliest Chinese-language document seen (Sept. 2006) that uses the term *douyou* to refer to soybean oil.

Note 6. Is fermented tofu (*furu*) mentioned in this work? After looking carefully through the Chinese document, Dr. H.T. Huang says (2002) he cannot find any mention of it, after another long search. Moreover, he does not mention this book in the section of his Needham series book about fermented tofu (2000, p. 325-28). However Dr. Masaaki Yasuda, a professor in Okinawa, who has spent his professional career studying *tofuyo*, a type of fermented tofu, disagrees. When asked by Wm. Shurtleff about this specific point he replied (e-mail of 11 Nov. 2011): “You will find mention of fermented tofu in the Special Issue of *Honso Komoku (Bencao Gangmu)* by Li Shih-Chen in 1596. Maybe you only checked ‘the main issues’ of this book, but actually he also published other special issues that were not included in the main issues. You will find the fermented tofu using the key word *furu*, not fermented tofu nor *rufu*. *Furu* in this book clearly refers to the fermented tofu that you are searching for. Of course I read it myself in this book; I did not hear it from anyone else.”

Red azuki beans (*chixiaodou*) are also mentioned in this book; a listing of alternative names, with commentaries, is

given. (See Li 1958 #393).

White beans (*baidou*) are also mentioned as follows: White beans (*baidou*) are mentioned in the Song dynasty. They are also called *fandou*. The seedlings can be used as a vegetable. They are good eaten raw. In eastern Zhejiang the flavor is especially good. They can be used to make jiang and tofu (*fu*). In the north, the watery white beans (*shui baidou*) are similar but is not as good. White beans are also called *fandou*. They can be used to complement congee / gruel (*zhou*) and cooked rice served as a main dish (*fan*). According to the author (Li Shizhen) *fandou* is the same as white azuki beans. Some white beans have a yellow color. The beans are about the size of mung beans (*liudou*). Plant them in the 4th or 5th month. The leaves of the seedlings are like those of red azuki beans (*chixiaodou*) and can be eaten. The pods are like those of azuki beans (*xiaodou*). One kind of pod comes with leaves like those of the soybean (*dadou*). They can be cooked like rice and used to make tofu (*fu*). They are of the same category. Nature and flavor (*qiwei*): It is sweet, neutral, and nontoxic. (See Li 1958 #467). (Translated by H.T. Huang, PhD, May 2003). Dr. Huang adds: The white bean (*baidou*) could well be the white azuki bean.

3. Hitomi, Hitsudai. 1695. [Honcho shokukan. See Pen chao shih chien]. [Chi]*

• **Summary:** Yokotsuka (1985, p. 206; 1986, p. 198) cites this as “*Honcho Shokukan* (1692)” but apparently does not cite it in his bibliography in either case.

The Japanese title can be translated as “Japan’s food dictionary” or “Our country’s food model.” Written during the Edo period, the book is most about tea. The section about sushi states: Mix fish meat into cold rice, then mix in a little vinegar.

4. Hitomi, Hitsudai. 1695. Pen chao shih chien / Ben zhao shi jian [A mirror of food in this dynasty. 12 vols.]. Osaka?: Hiranoya Katsuzemon. 22 cm. Widely referred to as *Honchō Shokkan* in Japanese. Modern rendering by Morohashi 1955, trans. p. 13. Complete modern translation into Japanese by Isao Shimada (1976; Tokyo: Heibonsha). [Chi]*

• **Summary:** This book, written by a Japanese man in Japan, yet entirely in Chinese, contains early references to yuba, frozen tofu, natto, shoyu, and miso. When Japanese read the Chinese characters for yuba, *doufu-lao*, they pronounce them *tōfu no uba*. *Lao* or *uba* means “old woman” or “wet nurse.”

The book states that the word “natto” is derived from *nassho*, meaning “temple kitchen” or literally “place of offering, perhaps because the food was offered to Buddha before being offered to the monks.” It also contains the earliest known written mention of natto’s medicinal or healing effects, together with recipes for preparing natto miso soup (*natto-jiru*).

Note: Recall that this *natto-jiru* may well be made with fermented black soybeans rather than *itohiki natto*.

Saito (1985, p. 15-16) notes: “In 1695 Dr. Hitomi Hitsudai, a Japanese physician, age 74, writes the *Honcho Skokkan* and talks about the good and bad points of daily foods from his medical viewpoint. The 12 volume book is written entirely in Chinese. He writes: ‘Soybean: Makes one feel calm, relaxes the stomach, and is good for the intestines. Miso: One should not be without it. Natto: Makes one feel calm, conditions the stomach, enhances a good appetite, and detoxifies poisons. Tofu: Nowadays tofu in Edo is pretty good. Among the various types, Nishiki-dofu and Kezo-indofu are famous... But it cannot compete with the tofu made in Kyoto. Shoyu: Inactivates any poisoning from eating food, drinking alcohol, or taking medicine.’ The above is taken from the translation into Japanese by Shimada Isao.”

T. Yokotsuka (1985, p. 206; 1986, p. 198) cites this as *Honcho Shokukan* (1692) but apparently does not cite it in his bibliography in either case.

Needham (1986, p. 581) cites this as *Pên Ts’ao Shih Chien* (Materia Medica in Tasteful Verse, by Chu Lun). Ch’ing dynasty. 1739. Partly translated by Swingle. But Needham does not discuss its content.

Fukushima (1989, p. 9) states that the *Honcho-Shokkan* (Hitomi, 1695) describes miso and shoyu.

Concerning shoyu: Iino (2001, p. 21) contains a “Table of ingredients used in *tou-miso* and shoyu during the Edo period.” The entry for *Honcho-shokukan* (compiled in 1695) states that *Shoyu* is made from the following ingredients: Soybean approximately 22%. Wheat / barley approx. 22%. Salt approx. 22%. Water approx. 34%.

Iino (2003, p. 8) states: “In the first half of the Edo Period (17th century), soy sauce was made in all regions of Japan and could be purchased anywhere. In addition, soy sauce was made by hand in the large majority of houses”— This is made clear by a reference in this 1695 book (*Honchô-Shokkan*), which also mentions the shoyu production process, noting that barley was used in place of wheat. On p. 9 Iino adds that detailed instructions for making *niban shoyu* (soy sauce from a second pressing of the moromi with salt water) are also described in this book. Iino then comments: “It is clear that with the beginning of soy sauce production, use was also made of the dregs [shoyu presscake] to make *niban shoyu*.”

5. Terajima Ryôan. comp. 1711. *Wakan sansai zue* [Collection of Japanese and Chinese diagrams and drawings of all things]. Japan. 40 books, 106 sections. Japanese summary by Kawakami 1978, p. 269. Translation into modern Japanese titled *Wakan Sansai Zukai* published by Heibonsha in Toyo Pocket Library series. [Jap; eng+]
 • **Summary:** This is Japan’s oldest encyclopedia, written in *kanbun*, the Japanese transcription of Chinese writing (see next page). It is a Japanese compilation, which originated in

Japan and is not a Japanese translation of a Chinese work. When cited in Chinese, the title in pinyin is: *Hehan sanchai tuhui* (W.-G. *Ho Han San Ch’ai T’u Hui*). The author’s nickname (*aza*) is Shojun; his artist’s name (*go*) is Kyorindo. The work contains many illustrations, although they were generally primitive and not very accurate.

In volume 105 (*Jozorui*), which is about brewing and fermented foods, a clear distinction is made between miso, shoyu, and tamari.

The section on yuba states: “Tofu film is made on the surface while making tofu. It looks like yellow paper. If you stir too much, the film will not form properly. If you wish to obtain the film, add coagulant and boil the milk. The wrinkled look of the film resembles (the skin of) an old woman. If you remove too much film, the yield of tofu decreases and the tofu becomes hard to eat.” Yuba is referred to as *doufu-pi*, the present Chinese term. When the text notes that yuba “resembles (the skin of) an old woman,” it seems to imply that the earlier term *lao* or *uba* was used because of the similarity of yuba and an old woman’s face.

T. Yokotsuka (1985, p. 206) cites this as “*Wakan sansaizue* (1715)” but apparently does not cite it in his bibliography.

Fukushima (1989, p. 9) states that the *Wakan Sansai Zue* (Narushima, 1712) describes miso and shoyu.

Ebine (1989, p. 91-93) gives the date of this work as 1712, and states that volume 105 describes the preparation of “tama-misho” using broad beans (*Vicia faba*; *Japanese: soramame*), and a “whitish misho” using soybeans. For each of these Ebine gives a flowchart. Rice or barley are soaked in water, steamed, and fermented to make rice koji, which is mixed with salt, and then the salted koji is mixed with broad beans that have been cooked and dehulled. The mixture is formed into balls, which are wrapped with rice straw, hung under the rafters over a fireside for several weeks, crushed in a mortar, then mixed with water to make tama-misho. To make whitish misho from soybeans and rice: 10 parts of soybeans are soaked in water, dehulled by brushing, and cooked. The hulls are first removed from the cooker, then the cooked beans are removed, formed into balls, and the balls are sliced. Meanwhile, about 14 parts of rice are polished, soaked in water, steamed, cooled, and allowed to mold spontaneously to yield 16 parts of rice koji. The rice koji, sliced soybean balls, and 1.3 parts of salt are mixed, pounded, packed into vats, and fermented for 10 days to yield the whitish misho.

C.N. Li (1958): Making Fermented Products, Fermented black soybean sauce (*shizhi*; W.-G. *shih chih*). Note: Shih is often used at meals to harmonize the five flavors. People used to use it during this dynasty. Nowadays, if people do not use *chiang*, they do not use shih; they use soy sauce (*chiang-yu*), not fermented black soybean sauce (*shizhi*).

Modern rendering by Morohashi (1955). He translated p. 5 (roasted flour), p. 17 (fermented black soybean sauce).



豆醬

醬

醬油

倭名比之保
本邦俗加油
字其未撰者
為醬似為三
物

本綱醬者將也能制食物之毒如將之平暴惡也故聖人
不得醬不食矣有數品大麥小麥甜醬酸醬不悉記

豆油 造法用大豆三斗水煮糜以麩二十四斤拌罨成

黃每十斤入鹽八斤井水四十斤攪晒成油收取之

大麥醬 用黑豆一斗炒熟水浸半日同煮爛以大麥麩

二十斤拌勻篩下麩用煮豆汁和劑切片蒸熟罨晒

搗每丁斗入鹽二斤井水八斤晒成黑甜而汁清

△按今本邦用大麥醬小麥醬二種大抵造法大豆一斗

精麥粗磨炒以拌罨成麩罨晒別用鹽一斗水五斗煎

沸冷定盛漏投豆麥之麩每自以槌杖攪之夏七十五

Confection of soy flour and *ame* = *Ame chimaki*. In “Making Fermented Foods.” Morohashi (1955) translated p. 5. *tou i* (*mame ame*). In: vol. 10, p. 63.

Concerning shoyu: Iino (2001, p. 21) contains a “Table of ingredients used in *tou-miso* and shoyu during the Edo period.” The entry for *Wakan-sansai-zue* (compiled in 1712) states that *Shoyu* is made from the following ingredients: Soybean 18.2%. Wheat / barley 28.2%. Salt 19.2%. Water 45.5%.

Iino (2003, p. 8) notes that this 1712 book “states that soy sauce made from wheat is suitable for the public and soy sauce made from barley is of low quality.” Iino comments (p. 8-9): “Put simply, the soy sauce sold in shops was made from wheat because that made from barley was inferior.”

On the same page, Iino shows a full page reproduction of the page titled “shoyu” in this book. It gives: “An explanation of soy sauce production with an illustration of the proper sort of barrel to be used.” Iino notes (p. 9): “Another method for producing soy sauce requires a heating process. The *Wakan Sansai Zue* states: ‘... Squeeze the *moromi* to extract the oil [sic, liquid]. If the color is light, the flavor will not be good. Boil the oil [liquid], place it in a pail and leave it over night to darken the color and improve the flavor. Mix the dregs [presscake] again with salt water and extract the oil [liquid]. This [second pressing] is called *niban shoyu* (second soy sauce), and the flavor is very much inferior.’”

6. Isei teikin ourai [Encyclopedia in question and answer format]. 1730? Japan. Author unknown. Japanese summary by Kawakami 1978, p. 206. Undated. [Jap]

• **Summary:** One theory says this book was written by Kokan Shiren (pr? d. 1346), but it was probably written later. In this book, yuba is called *tofu uwamono* (literally ‘tofu upper substance’).

7. Yuan Mei. 1790. *Suiyuan shidan* [Recipes from the Sui garden]. China. [Chi]

• **Summary:** Wade-Giles reference: *Sui Yüan Shih Tan*, by Yüan Mei. Qing dynasty.

H.T. Huang (2000, p. 323-24), in the section titled “Products associated with *tou fu*,” states that this is the earliest document seen that mentions fresh tofu curds. In a recipe for “Hibiscus Tofu” (*fuyong doufu*) the famous Qing dynasty gastronome says (p. 100): Place fresh tofu curds (*funao* = “tofu brain”) in well water and heat to boiling three times to remove the beany flavor. Suspend the curds in chicken soup and heat again to boiling. Before serving, garnish with laver / nori (*Porphyra*, a sea vegetable) and pieces of shrimp. Later, fresh tofu curds were also called “tofu flowers” (*douhua* or *doufu hua*).

Concerning frozen tofu, Huang states (p. 324) that a recipe in this book states: Boil the thawed tofu in water to remove the remaining beany flavor, then simmer it in a soup



base.

Huang also states (p. 325, 364) that both pressed tofu (*doufugan*) and smoked tofu (*xun doufu*) are mentioned in this book.

Concerning fermented tofu, Huang (2000, p. 327) notes: By the middle of the Qing dynasty local varieties of *furu* had begun to win national fame, such as the *furu* of Suzhou [in southern Jiangsu; W.-G. Su-chou or Soochow, formerly Wuhsien] and the white *furu* of Guangxi [or Guangxi Zhangzu, an autonomous region in southeast China; W.-G. Kuangsi]. The *Suiyuan Shidan* says:

‘*Rufu*: The ones from the [shops] near the front of the Temple of General Wên in Suzhou are particularly good. The colour is black, and the flavour is clean. There are two types, a wet and a dry. The product with some shrimp paste in it is also attractive, but may have a slight fishy taste. The white *furu* from Guangxi (Kuangsi) is also outstanding, especially that made by the family of the official Wang Ku.’

A full-page table (Huang, p. 372) shows the “Usage of soy condiments in food recipes from the Han to the Qing

dynasties.” Seasonings based on jiang (fermented soybean paste) are used in 48 recipes: Jiang itself in 15, soy sauce made from jiang named *qingjiang* in a 24 recipes, soy sauce named *jiangyou* in 2 recipes, soy sauce named *jiangzhi* in 1 recipe, and soy sauce named *jiangshui* in 6 recipes. Fermented black soybeans (*shi*) are used in 2 recipes, and a new type of soy sauce named *qiuyou* (W.-G. *ch’iu yu*) is used in a whopping 62 recipes. Note: This is the earliest document seen (April 2012) in which a soy-based seasoning named *qiuyou* is mentioned. Huang states (p. 371) that *qiuyou* is written with the Chinese characters for autumn + oil, implying a sauce harvested in autumn.

Wilkinson (2000, p. 647-48). This was the most famous recipe book of its day, yet *wok* dishes accounted for only 16% of the recipes. Yuan Mei (lived 1716-1798) was one of China’s four most famous “literati gourmands;” they exerted a considerable influence on the development of a higher cuisine, especially when they compiled their own cookbooks...”

Letter from Dr. H.T. Huang. 1996. Sept. 29. “Page 103 mentions mock roast goose made with yam wrapped in *doufu pi* (yuba).”

Dr. H.T. Huang, expert on the history of Chinese food and agriculture (personal communication, 5 June 1993), gives the date of this document as +1790, and the English translation of the title as “Recipes from the Sui Garden.” He notes that page 107 contains three recipes for gluten.

Endymion Wilkinson. 2000. *Chinese History: A Manual* (p. 649). This book *Suiyuan shidan* or *The Suiyuan recipes* was published in 1792, with a modern edition in 1984.

Newman (1989) states: “The idea of freezing bean curd is not new. Iced Bean Curd is one of Yuan Mei’s recipes from the Xi Yuan Cookery Book written near the end of the 18th century. This book by a poet, government official and author, is a very comprehensive volume of over 300 recipes, only some are about tofu. One difference is that the Iced Bean Curd recipe is meant to be served hot, the doufu in it is first frozen then prepared for use.”

Bo (1982): In this work Yuan Mei states that it is more graceful for a writer to use the term “ch’ing chiang” instead of “chiang-yu” when referring to soy sauce.

Hummel (1944, p. 955-56): Yuan Mei lived 1716-1798. A poet, literary critic, and essayist, he was a native of Ch’ien-t’ang (Hangchow). Resigning (1748) from his post as magistrate of Chiang-ning, he retired (1749) to his newly acquired “Garden of Contentment,” Sui-yüan, near Nanking. From 1784-1795, spent in alternate travel and quiet seclusion, he came to be known as one of the most skillful poets of his time.

Reichl (1985): Yuan Mei has been called the “the 18th century philosopher of the table.” His sayings are widely quoted. For example: “A great cook cannot with the utmost application produce more than four great dishes a day.”

Address: China.

8. Shōjin gyorui sokuseki ryōri [Quick recipes for Zen vegetarian cookery and fish]. 1802. Kochiya Yoshisuke (Osaka) and Kichimonjiya Risuke. Japanese summary by Kawakami 1978. [Jap]

• **Summary:** This book, whose author is unknown, was issued by two publishers in 1802. Kichimonjiya published an edition titled only *Sokuseki Ryōri* (Instant Recipes). One was a folded book 30 by 40 cm, one was a woodblock print 15 by 8 cm. The front side is fish and poultry, the backside is Zen vegetarian cookery. In the latter section there is a recipe named Yuba Anpei that contains yuba and silken (*kinugoshi*) tofu.

9. Kyōnan rubetsu-shi [History of Kyonan Rubetsu?]. 1813. Japan. [Jap]*

• **Summary:** This work contains the earliest known reference to “yuba” written in the Japanese way. The new term’s origin is explained as follows: “On Yuden Mountain, a sacred holly mountain in the feudal province of Dewa, there was an inn, Kinshiya Inn, which was visited by many pilgrims who came to the mountain to pray. The esteemed vegetarian cuisine was prepared by an old woman who was very skilled at making a variety of delicious foods from ground soybeans and soymilk. One of the foods was a thin film, which she fried before seasoning it. Others liked it so much that they began to make it themselves here and there. Sometimes they made it in the shape of bags and squares. In Kyoto, the capital, they used it in vegetarian dishes. Since the new food had been created by the old woman of Yuden Mountain, people named it *yuba*, where *yu* is taken from the *Yu* of Yuden Mountain, meaning ‘hot water’ and *ba* is the character for ‘old woman.’”

Note that while this word was pronounced “yuba,” just as it is today, the second character is different from the character used today.

10. Santo Kyoden. 1815. Kottō-shū [Collected antiques. Historical essay on this transitory world]. 2 volumes. Japanese summary by Kawakami 1978, p. 243. [Jap]

• **Summary:** This work contains an early reference to yuba, and offers a different etymology of the term from that given in the *Kyonan Rubetsu-shi* of 1813. “*Doufu-p’i* has traditionally been called *yuba*, however this is a mispronunciation. Its real name is *uba*. Some people say that the reason this film is called *yuba* [written with the characters ‘hot water’ plus ‘old woman’] is due to its yellowish color and the wrinkled surface, which resembled the face of an old woman. However this is not true. According to the *Isei teikin ourai* [Encyclopedia in question and answer format, written in ca. 1730] yuba is called *tofu uwamono* [literally ‘tofu upper substance’] and this is the correct name, since yuba is a film which forms on the surface while making tofu. It is also abbreviated as *tofu-no-ha* (‘tofu film’). *Uba*

is a mispronunciation of *uha*, in which the sound *ha* is mispronounced as *ba*. *Uba* and *yuba* each contains the sound *uba*, so that it is quite understandable that the dialectical term *yuba* was created.”

11. Shōjin ryōri kondate-shi [History of Zen vegetarian cookery menu preparation]. 1818-1830. Japan. [Jap]*

12. *Port Folio (The) (Philadelphia and London)*. 1819. On China. 7(2):91-111. Feb. See p. 105-06.

• **Summary:** The article begins: “The following letter from a gentleman of this city [Philadelphia, Pennsylvania?], now abroad, is the result of careful observation, during a long residence among the people whom it professes to describe.”

Page 105: “The Chinese make great use of beans, not only to feed their sheep and cattle, but also as food for themselves, in what they call, *thow foo* [doufu; tofu], and *foo chack*, [dried yuba sticks], a kind of flummery [soft jelly or porridge], exceedingly palatable and nourishing.”

Note 1. This is the earliest English-language document seen (Oct. 2012), and the earliest European document seen (Oct. 2012), that mentions yuba.

Note 2. This is the earliest English-language document seen (Oct. 2012), and the earliest European document seen (Oct. 2012), that mentions dried yuba sticks or rolls, which it calls *foo chack* [Chinese; also spelled elsewhere *foo jook*, *fooh jook* or *fuchu*, “bamboo yuba”]. The yuba is rolled so it looks like a bamboo shoot at each end then folded to form a “V.” It is often cooked in a sweet broth, and eaten as a sweet soup; the dried yuba becomes soft, delicate and subtly sweet thin sheets.

“Soy [sauce] is likewise made from beans, with the aid of molasses and salt. The beans are boiled until nearly all the water evaporates and they begin to burn; they are then placed in large jars exposed to the sun, water and molasses are poured upon them and stirred well every day until the liquid is completely impregnated with their flavour; it is then strained off, salted, boiled and skimmed, until perfectly clarified. It will keep any length of time. Many persons have thought that gravy was employed in this condiment, which is not the case, it being entirely a vegetable composition, and certainly very wholesome and agreeable. There are many qualities of it, and it requires much care and attention to make the best. Japanese soy is most esteemed, and is vastly superior to any made in China. Many shopkeepers have large platforms on the roofs of their houses, where a number of jars are placed, for the purpose of making this article of which there is an enormous consumption, since neither rich nor poor can breakfast, dine, or sup without it. It is sauce for every sort of food, gives zest to every dish, and is the *sine qua non* of a Chinese meal.”

13. Dobell, Peter. 1830. *Travels in Kamtchatka and Siberia*; with a narrative of a residence in China. 2 vols. London:

Henry Colburn and Richard Bentley. See vol. 2, p. 324-25. 20 cm.

• **Summary:** Note: The first several paragraphs of this are copied from *Portfolio* (1819, p. 105-06).

In Chapter XII of the section titled “A Residence in China,” the author is describing Chinese food, especially in the Canton area: “An article of food, of which all classes appear extremely fond, is *thow-foo* [tofu] and *foo-chack*, a sort of flummery [soft jelly or porridge], made from beans, very palatable and nourishing.

Note: The Cantonese term *foo jook* means dried yuba sticks. Perhaps the author was describing the product after the sticks had been broken into pieces and cooked until soft.

Soy, their famous sauce for all kinds of food, is also made from beans. The beans are boiled until all the water is nearly evaporated, and they begin to burn, when they are taken from the fire, and placed in large, wide-mouthed jars, exposed to the sun and air; water and a certain portion of molasses or very brown sugar are added. These jars are stirred well every day, until the liquor and beans are completely mixed and fermented; the material is then strained, salted, and boiled, and skimmed until clarified; and will, after this last process, become of a very deep brown colour, and keep any length of time. Many persons have thought that gravy was used in preparing this condiment; but this appears not to be the case, the composition being entirely a vegetable one, of an agreeable flavour, and said to be wholesome. There are two or three qualities of it; to make the best requires much care and attention. Japanese *soy* is much esteemed in China, on account of the superior manner in which it is made; perhaps they have a particular sort of bean for that purpose. Shopkeepers at Canton who sell soy, have large platforms on the roofs of their houses, where the jars for preparing soy are all arranged, and exposed to the sun; for the consumption of this article is enormous. Neither rich nor poor can dine, breakfast, or sup without soy; it is the sauce for all sorts of food, gives a zest to every dish, and may be said to be indispensable at a Chinese repast.

“In general, very little meat is eaten.”

Note: The author spent 7-8 years in China between 1798 and 1820. He died in 1852. Address: Counsellor of the Court of His Imperial Majesty, the Emperor of Russia.

14. Wang Rizhen. 1850? *Huya* [Lakeside elegance]. China. Passages on soy reprinted in H.T. Huang 2000, p. 319-20, 324-25. Undated. [Chi]

• **Summary:** Wade-Giles reference: *Hu Ya*, by Wang Jih-Chên. H.T. Huang (2000, p. 319-20), in the section titled “Products associated with tou fu,” notes that by the 19th century many products derived from soymilk had been developed. The most complete discussion of these appears in this book, published in about 1850: Tofu (*doufu*) is prepared by grinding soybeans finely [with water], cooking the milk in a caldron, then coagulating it with gypsum or nigari. Before

coagulation, the soymilk is called *doufu jiang* (“tofu + thick liquid”).

Note 1. This is the earliest Chinese-language document seen (Aug. 2003) that uses the term *doufu jiang* to refer to soymilk.

The curds are wrapped in a piece of cloth then placed in a wooden box, where excess water is drained off.

The soft product is called watery tofu [*shui-doufu*, *shuidoufu*, which is made like soft Japanese tofu {*momen-goshi*, with separation of curds and whey} and not like Japanese kinugoshi, which is made without any separation of curds and whey].

The soft curds (before they are pressed into blocks of tofu) are called *doufu hua* (“tofu flowers”) or *doufu nao* (“tofu brain”).

Curds which have been placed in layers between sheets of cloth, then pressed, are known as *qian zhang* (“thousand leaves”) or *baiye* (“hundred sheets / leaves”).

Note 2. This is the earliest document seen (Feb. 2003) that mentions pressed tofu sheets, or the names *qian zhang* or *baiye*.

When soymilk is heated, a film forms on the surface. When it is lifted off, it is called *doufu i* (“tofu robes”) or *doufu pi* (“tofu skin”) as noted in the *Bencao Gangmu* (The great pharmacopoeia) (+1596).

Note 3. This film is called yuba in English.

When small pieces of tofu are deep fried, giving a golden-brown outer surface surrounding a hollow interior, they are called deep-fried tofu (*you doufu*, literally “oil tofu”).

Note 4. This is the earliest document seen (Feb. 2003) that mentions deep-fried tofu or *you doufu*.

When firmly pressed tofu is cut into small pieces then simmered in soy sauce, the product is known as *doufugan*.

Note 5. Soyinfo Center believes that pressed tofu is now called *doufugan* and that pressed tofu simmered in soy sauce is now called *jiangyou doufugan*. When pressed tofu is cooked with “five spices” it is called five-spice pressed tofu (*wuxiang doufugan*).

The plain pressed tofu is known as *bai doufugan* (“white tofu dry”).

When dried tofu is smoked by burning shavings it becomes smoked tofu (*xun doufu*).

When pressed tofu is soaked in brine and fermented, the product is called *chou doufugan* (“stinky pressed tofu” / “foul-smelling pressed tofu”).

Note 6. This is the earliest document seen (Oct. 2011) that clearly mentions a type of *chou doufu* (“stinky tofu”) or that mentions *chou doufugan* (“stinky pressed tofu”).

Talk with H.T. Huang. 2001. Feb. 20. Tofu was seasoned and flavored long before the first description of the products in this book in about 1850. The use of five-spice was already in common use in China during the Ming dynasty (1368-1644), if not earlier. Five-spice tofu, made by simmering

pressed tofu (*doufugan*) is a sauce seasoned with five spice, has the advantage of a longer shelf life than regular tofu.

15. Towns (B.) and Co. 1858. The undersigned offer for sale, the following Chinese goods... (Ad). *Argus (The Melbourne, Victoria, Australia)*. April 24. p. 2.

• **Summary:** “... now landing, ex Panama, from Hong Kong, -

“Kum chum, vermicelli, soo lew. Beanstick [probably dried yuba sticks], or macaroni [macaroni], red dates, peas.

“Pearl barley, honied dates, green ginger. Chinese oil in jars; salted vegetables.

“Salted turnips (pieces), white beans curd [tofu].

“Pickle beans curd [probably pickled bean curd, which is fermented tofu?], green peas.”

This ad also appears in the April 26 issue (p. 3).

Note 1. This is the earliest document seen (March 2010) stating that beanstick (probably dried yuba sticks), white beans curd (tofu), or pickled beans curd (probably fermented tofu) are now in Australia.

Note 2. This is the earliest English-language document seen (Oct. 2011) that uses the term “pickle beans curd / pickled bean curd” to refer to fermented tofu.

Note 3. In 1851 gold was discovered in Victoria, in southeast Australia. A huge gold rush followed that lasted until the late 1860s. In 10 years from 1851 to 1861 Australia’s population nearly tripled. As was the case with the California gold rush two years earlier (1849+) large numbers of Chinese joined the stampede. These three Chinese soyfood products were clearly imported for the Chinese.

Note 4. This is the earliest English-language document seen (Oct. 2012) that uses the word “Beanstick” (or “Beansticks”) to refer to what is probably dried yuba sticks.

Note 5. This is the earliest document seen (Oct. 2012) that mentions yuba as an item of international trade—being imported or exported. Address: 26 William-Street [Melbourne].

16. Wang Shixiong. 1861. *Suixiju yinshipu* [Discourse on food and drink from the Random Rest Studio]. China. Passages on soy reprinted in H.T. Huang 2000, p. 319n, 324, 371-73. And in N. Wai, 1964, p. 92. [Chi]

• **Summary:** Wade-Giles reference: *Sui Hsi Chü Yin Shih P’u*, by Wang Shih-Hsiung. Qing dynasty.

The section on fermented tofu states: Firm tofu (*doufugan*) is difficult to digest. Children, the elderly, and sick people should not eat it. If you transform firm tofu into fermented tofu (*furu*) it will be good for sick people / patients; it gets better the longer it is aged. (Translated by H.T. Huang, PhD, April 2003).

H.T. Huang (2000, p. 319n, 653) states that the list of tofu products in this book (p. 63) is similar to that published about 11 years earlier (ca. 1850) in: *Hu Ya* (Lakeside

elegance), by Wang Rizhen.

Huang (p. 324) states that this is the second earliest known Chinese document to mention pressed tofu sheets (*qianzhang* {W.-G. *ch'ien chang*} or *baiye* {W.-G. *pai yeh*}).

Huang (p. 371-73) states that, according to this book, the first batch of soy sauce, produced during the summer and harvested in the fall, was called *qiuyou* (W.-G. *ch'iu yu*) ("fall oil"). It is called for by this name in 62 recipes in the book. Huang adds that the term is almost never used today.

The book also describes an unusual use for wheat gluten: If one accidentally swallows a coin, roast some gluten without destroying its shape, grind well, mix with boiled water and drink. If the coin is caught in the throat, it will be coughed up. If it is in the stomach, it will be eliminated with the stool (Huang 2000, p. 501).

Huang (personal communication, 5 June 1993), notes that page 28 states: "*Mien-chin* is made by kneading wheat dough under water. It is cooling, disperses heat, mitigates thirst and dispels anxieties. But it is not easy to digest, and should be chewed well."

Wai (1964, p. 92) translates the section on fermented tofu: "Hardened tofu is difficult to digest, and is not good for children, old people, or patients. Sufu [fermented tofu], which is prepared from tofu and gets better the longer it is aged, is very good for patients." Wai concludes: "Therefore, we may presume that soybean cheese [fermented tofu] was sold long before the Ch'ing [Qing] dynasty." He then describes the ancient process. The cubes of tofu are inoculated with the fungus by arranging them on a large bamboo tray and covering them with rice straw (on which the fungus grows wild).

17. *Argus (The) (Melbourne, Victoria, Australia)*. 1864. D'Artagnan, for Sydney. Aug. 8. p. 4.

• **Summary:** "73 bags rice, 10 boxes tea,... 3 boxes opium, 24 boxes 20 baskets ginger, 100 jars soy [sauce],... 49 baskets pickles, 5 boxes bean sticks [dried yuba sticks],..."

Note 1. These Chinese foods were probably imported to Australia for the Chinese who had joined the Victoria gold rush, which lasted until the late 1860s.

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the word "bean sticks" (two words) to refer to what are probably dried yuba sticks.

18. Champion, Paul. 1866. Sur la fabrication du fromage de pois en Chine et au Japon [On the production of tofu in China and Japan]. *Bulletin de la Societe d'Acclimatation* 13:562-65. Oct. Meeting of June 1. [Fre]

• **Summary:** "The Chinese and the Japanese eat considerable quantities of a white material rather analogous in its appearance to the French product named *fromage à la pie* (quark), and which they make with a particular type of soybean (*Pois oléagineux*) which is also used for food and from which one can extract a rather expensive and very good

quality oil. The production of this cheese [tofu] is simple, but it requires care and rather extensive practice to produce a white product."

The author then gives a detailed 3-page description of how tofu (*fromage de pois*, literally "pea cheese") is made—though he never mentions its name in either Chinese or Japanese. It is coagulated with magnesium chloride, and will keep for 1 day in summer and 1 week in winter. It is also often salted and it is mixed with various sauces which allow it to keep for several years. In the process of making tofu, the hot soymilk is poured into a second tub and allowed to cool before the coagulant is added. The foam is removed using a copper scoop. After several minutes, a skin / film (*une peau*) [yuba] forms on the surface of this liquid. It can be lifted off by passing a stick (*baguette*) underneath it and hung up to dry by inserting one end of the stick into one of many holes that have been deliberately created in the wall. This film, by the way, has a rather agreeable taste, and is eaten either fresh or dried; a second film is often formed and is lifted off in the same manner.

Note 1. This is the earliest French-language document seen (Oct. 2012) that mentions yuba, which it calls *une peau*.

After the tofu has been pressed, so that the volume has been reduced by half, it is removed from the forming box, or the tofu (cheese) is sometimes shipped out to a great distance. To transport them, it is sufficient to close the box with planks, nailed with the aid of bamboo pegs. Arriving at the destination, it is cut into small pieces by means of a large metal knife.

Tofu (pea cheese) is generally a grayish white and looks like a jelly. It does not keep for more than a day during the hot months, and to preserve it from rapid deterioration, it is generally mixed with salt or sauces of various types. It can then be kept for several years. A piece of tofu the size of a fist sells for 2 Cash (i.e., 1 centime).

He then (p. 564) describes shops in China selling hot soymilk for breakfast. "Generally, the shops where this cheese (*ce fromage* = tofu) is made are filled with Chinese, who bring cups to get some of the hot liquid (*le liquide chaud*), which is used to make the cheese and which has not yet been coagulated; they drink this beverage (*ce breuvage*), which has an insipid but not disagreeable taste, just like we enjoy coffee with tea. For many of the poor, the morning meal consists of a cup of this liquid, in which they dip various types of deep-fried crullers" (*des espèces de gâteaux frits à l'huile*).

"I will send with this note some samples of soybeans which, according to the analysis that I am in the process of making, contain more than 10% oil, and all the materials employed in this industry as well as some small preserved dried cheeses (*des petits fromages secs conservés*), of which I have spoken above. I have seen this production established on a large scale in many ports of China from the south to Peking, and also in various ports of Japan which I

have visited. This cheese, when well prepared, has a very agreeable flavor. Deep-fried it makes a delicious dish. It is widely consumed among the Chinese and would be able to be employed, I believe, to advantage in Europe.”

Note 2. This is the earliest document seen (Oct. 2011) worldwide—in any language or in any country—that discusses the use of soymilk as a beverage. We find this quite surprising! Why are there no earlier references to its use as a beverage in Chinese documents? This is also the earliest French-language document that mentions soymilk, which it calls *le liquide chaud* and *ce breuvage*.

Note 3. This is the earliest document seen (Jan. 2012) that describes how to make tofu on a commercial scale. Address: France.

19. Hepburn, James C. 1867. A Japanese and English dictionary; with an English and Japanese index. Shanghai, China: American Presbyterian Mission Press. xii + 558 + 132 p. 2nd ed. 1872; Abridged ed. 1873, 1881; 3rd ed. 1886; 4th ed. 1888; 5th 1894; 7th ed. 1903. First edition was reprinted in 1966 and 1983. Index. 24 cm.

• **Summary:** This is Hepburn’s earliest Japanese-English dictionary. The words are arranged alphabetically by their romanized spelling. Each word is written in three ways. After the romanized word (main entry), written in uppercase letters with diacritical marks (which we have largely omitted below), the same word is written in katakana, then again in Chinese characters. Finally, one or more definitions are given.

Soy-related words and terms in the 1867 edition:

Amazake: Sweet sake, a kind of fermented rice.

Daidz [Daizu]: A kind of large white bean. Soja hispida.

Go: Beans mashed into paste. *Mame no go*.

Gokoku: The five cereals, wheat, rice, millet, beans, *kibi*.

Hiriodz [Hiriodzu, Hiryozu]: A kind of food [made of tofu fried in oil].

Note 1. This is the earliest English-language document seen (Oct. 2012) that contains the term *Hiriodz* (the modern spelling is *Hiryozu*) which refers to deep-fried tofu treasure balls.

Ireru—*Kono mame wa yoku iremash’ta*: these beans are well parched.

Iriru—*Mame wo iriru*: to parch peas [beans].

Kinako [“yellow flour”]: A kind of food made of beans.

Kiradz [Kirazu]: The refuse left in making *tôfu*.

Koji: Malt made by fermenting rice or barley, in the process of making sake, and soy [sauce].

Koji-butu: A shallow box for holding malt.

Mame: Bean, pea. *Mame no ko*: bean flour.

Miso: A kind of sauce made of [soy] beans.

Natto: A kind of food made of [soy] beans.

Nigari: The brine formed by the deliquescence of salt.

Sashi (verb): Shoyu wo sashi—To season with soy [sauce].

Sashimi: Raw fish cut in thin slices and eaten with soy.

Sh’taji [Sorted after “Shis,” Shitaji]: Soy (used only by women). Syn. Note 2. This is the earliest English-language document seen (April 2012) that uses the word “sh’taji” or shitaji” to refer to soy sauce.

Shoyu: Soy, a kind of sauce made of fermented wheat and beans. This is the earliest English-language document seen (April 2012) that uses the word “shoyu” (spelled correctly like this) to refer to soy sauce.

Tofu: A kind of food made of beans.

Umeboshi (*hakubai*). Dried plums. Ume-dzke [Ume-zuke]: Pickled plums. *Ume ga mada umimasan*: The plums are not yet ripe.

YUBA, ユバ, 湯葉, n. A kind of food made of beans.

Yuba [hot water + leaf]: A kind of food made of beans.

Note 3. This is the earliest English-language document seen (Oct. 2012) that contains the word “yuba.” The Chinese characters (meaning “hot water” + “leaf”) are the same used today.

Yu-dofu: Boiled tofu.

The English-Japanese part of this dictionary starts after p. 558 and is titled “An index; or, Japanese equivalents for the most common English words.” Separately numbered to p. 132, it includes: “Bean, Mame. Barm, Kôji, tane. Pea, saya yendo [saya-endo]. Soy [sauce], Shôyu.”

Terms NOT mentioned include Aburaage, Aburage, Atsu-age, Daitokuji natto, Edamame (or Eda mame or Yedamame), Ganmodoki, Hamanatto, Hiya-yakko, Kori-dofu, Koya-dofu, Nama-age, Okara, Tamari, Tonyu, Unohana, Yaki-dofu.

Note 4. The author apparently did not realize that the various soyfoods he defined (with the possible exception of soy sauce) were made from soybeans.

Note 5. This is the second earliest English-language document seen (June 1999) in which Chinese characters are used to write the name of the soybean or related products.

Note 6. This is the earliest English-language document seen that contains the word “tofu,” or the word “natto” (Jan. 2012), or the word “koji” or the term “koji-butu” (July 2012).

Note 7. This is the earliest English-language document seen (Feb. 2004) that refers to amazake, which it calls “Amazake.”

Note 8. This is the earliest English-language document seen (Oct. 2012) that uses the term “Shoyu” (or “shoyu”) to refer to soy sauce.

Note 9. This is the earliest English-language document seen (Dec. 2005) that uses the word “Kinako” to refer to roasted soy flour.

Note 10. This is the earliest English-language document seen (Dec. 2008) that uses the word “Kiradz” to refer to what is now called “okara,” or “soy pulp.” Address: Shanghai, China.

20. Champion, Paul; Lhôte, M. trans. 1869. Fabrication du fromage de pois en Chine et au Japon [Production of tofu in China and Japan]. In: P. Champion and S. Julien, eds. 1869. Industries Anciennes et Modernes de l'Empire Chinois... Paris: Eugene Lacroix. xiii + 254 p. See p. 185-89. [Fre]

• **Summary:** This chapter gives a detailed description of the production of tofu, but also mentions soymilk and yuba. "Tofu (*Le fromage de pois*, literally "pea cheese") which is regarded in China and Japan as a very important food, looks similar to *fromage à la pie* (a smooth cottage cheese or soft cream cheese; quark). It is made from a particular variety of soybeans (*pois oléagineux*, literally "oil peas"), which are also consumed directly and which can be used, in addition, to make an oil of very good quality and rather high price.

"The production of tofu is simple, but it demands much care. The soybeans are first soaked for about 24 hours, then they are drained in a wicker basket. Next they are ground in a mill, while mixing them with the soak water, which had been set aside. The mill used for this purpose is made of horizontal discs of hard stone. The upper stone is pierced with a conical hole. The apparatus is rotated by means of a connecting rod, connected by joints, that a worker rotates with one hand while the other hand is used to throw the soybeans into the hole of the upper stone with a spoon / scoop (*cuiller*). With each addition of the soybeans, a certain amount of water for grinding is added. The soybeans, ground by the action of the mill, are transformed into a liquid slurry (*bouillie liquide*), which collects between the millstones, falls into a circular channel, and accumulates in a tub. This slurry is poured onto a filter formed of a linen cloth attached to an overhead frame; when the filtration is very slow, the material is mixed. To facilitate this operation, the frame / chassis is suspended from the ceiling at the height of a man.

"The liquid filtrate (*Le liquide filtré*), mixed by hand, is collected in a wooden vat and poured into a cooking pot, where it is cooked slowly. This cooking pot is formed of a deep, wide pan of cast iron, surrounded by a type of wooden tub (frame?); the metallic surface presenting a limited area, permits the person cooking the liquid, without fear, to raise the temperature briskly; this can alter the material. This apparatus is almost always used by the Chinese for cooking organic materials. A second cooking pot is located next to the first one on the same stove, in the form of a parallelepiped (a six-sided polyhedron all of whose faces are parallelograms lying in pairs of parallel planes) and receives the direct action of the fire-box. The liquid which has flowed from the mill starts to be covered with foam at about 100°C. It is kept boiling for about 10 minutes, then is decanted into the second cooking pot, where it is subjected to a lower cooking temperature, because of the disposition of the stove. The first cooking pot, once empty, is refilled immediately with a new quantity of liquid filtrate. The drained pulp [okara] on the filter cloth is washed with water, and the liquid which runs

out is used to wet the beans which undergo grinding. This wash water carries with it a significant quantity of usable material.

"When the liquid (*la liquer*) has been heated for a few moments in the second pot, it is poured into a large tub and allowed to cool. One is careful to agitate it with the aid of one's hand, causing it to rotate. The foam which forms gathers in the middle of the surface and is removed with the aid of a copper scoop. After standing for several minutes, the liquid becomes covered with a thick film

pellicle (*pellicule épaisse*) [yuba], which is removed with a stick (*baguette*) without tearing it. The film is hung up to dry by affixing the stick in the wall. Sometimes a second film is formed; it is treated in the same manner. The material thus solidified at the surface of the liquid is employed in foods. It is eaten either fresh or dried and its flavor is not disagreeable.

Note: This is the earliest French-language document seen (Oct. 2012) that uses the term "pellicule épaisse" to refer to yuba.

"The liquid which remains in the vat is destined to produce the tofu (*fromage de pois*). One first adds to it a small quantity of water mixed with plaster (*plâtre*) [calcium sulfate], which has probably been baked in the cooking stove. Finally one adds a few drops of a concentrated solution from a salt marsh. (According to our analysis, this is nothing but magnesium chloride.) The liquids are mixed slowly to form a homogeneous mass, which soon coagulates and becomes a solid. The plaster is certainly added to coagulate the casein of the soybeans (*pois*). As for the magnesium chloride, it is rather difficult to define the role that it plays; it is used in only a few cities in China.

"Once formed, the tofu curds are poured, while still hot, into a square forming box, 40 cm on a side and 5 cm deep. These boxes, stacked up double, are placed side by side on a long stone table, having gutter drains along the two sides. The boxes on the table are closed at their lower part by a fine-weave linen, through which the water trapped in the cheese (*fromage*) can flow out. When the tofu (*fromage de pois*) is sufficiently drained, it is compressed in the box where it is trapped, by putting on the top a plank laden with weights. When the volume is reduced by half, the box is removed and the cheese it contains is sometimes shipped out to a great distance. To transport them, it is sufficient to close the box with planks, nailed with the aid of bamboo pegs. After arriving at the destination, it is cut into small pieces by means of a metal knife.

"Tofu is generally a grayish white and looks like a jelly. It does not keep more than a day during the hot months, and to preserve it from rapid deterioration, it is generally mixed with salt or sauces of various types [especially soy sauce]. It can then be kept for several years.

"A piece of tofu the size of a fist sells for 2 Cash, i.e., one centime. Sellers of tofu also offer for consumption the

hot uncoagulated liquid (*le liquide chaud non coagulé*) [soymilk], of which we have spoken previously. Poor Chinese nourish themselves on this substance, which has a dull flavor but is not disagreeable. The shops where this cheese is sold present a curious aspect at certain times of the day. Chinese workers come in great numbers to buy a portion of liquid cheese (*de fromage liquide*), which they carry away in small cups; others consume the coagulated cheese on the spot.

“For many people of the poorer class, the morning meal consists solely of a cup of soymilk (*une tasse de fromage de pois liquide*) in which they soak some cakes [crullers] that have been deep-fried in oil.”

Note: This is the earliest French-language document seen (Oct. 2003) that uses the term *fromage de pois liquide* to refer to soymilk.

“The production of tofu (“pea cheese”) is executed on a grand scale in most of the ports of China through which we have traveled, from the south to Peking, and in the few towns in Japan that we have been able to visit.

“Tofu is rather agreeable in flavor. It could render a great service to the feeding and nourishment of Europeans if they are able to cultivate the seeds... Tofu, deep-fried like french-fried potatoes, makes a very delicious dish.

“The seeds used to make tofu usually contain 17% of a clear oil, whose flavor is not disagreeable.”

“We will add to the above information some analytical results that our colleague, Mr. Lhôte, and we, have obtained on the soybeans (*pois oléagineux*, literally “oil peas”) and tofu (*le fromage*.” A table (p. 189) gives: (1) The percentage composition of soybeans (now called *Pois de Chine*, or Chinese Peas) on an as-is basis and on a moisture-free basis: Water 15.07/ -, ash 4.63/5.45, lipids (*matières grasses*) 12.98/15.28, and nitrogen 5.79/6.81.

(2) The percentage composition of tofu (called *Fromage de pois*, or pea cheese) on an as-is basis and on a moisture-free basis: Water 90.37/ -, ash 0.76/7.89, lipids 2.36/24.50, and nitrogen 0.78/8.09.

(3) The percentage composition of yuba (called *Matière coagulée pendant la préparation du fromage*, or “The material coagulated during the preparation of tofu”) on an as-is basis and on a moisture-free basis: Water 9.36/ -, ash 4.01/4.42, and nitrogen 9.70/10.71.

From 120 gm of soybeans one obtains 184 gm of tofu.

One full page (frontispiece, facing the title page) (see next page) contains a specimen of the Chinese text translated by Mr. Stanislas Julien. The characters are written with handsome calligraphy. Address: China & France.

21. *New York Times*. 1870. The Chinese. Jan. 2. p. 5.

• **Summary:** From the *St. Louis Democrat* [Missouri], Dec. 30. About 250 Chinamen arrived on Tuesday night. “The scene at the depot at the time the train arrived is said to have been ludicrous in the extreme. The word was given to John

to ‘go ashore,’ and at once there was a deafening clamor and confusion of tongues... The chatter resembled that of a council of monkeys, but all were good-natured. After getting on board the [steamer] *Mississippi*, the Celestials ‘simmered down,...’ and were soon dreaming of their far-away homes across the Pacific, and the wives and children left behind.

“Yesterday the lemon-colored travelers were visited on board the *Mississippi* by thousands of our citizens, who were anxious to see what they looked like.” “All wore the national pig-tail...” They were going to work on a railroad in Texas.

It was found necessary to establish a Chinese store in the vicinity of the place of labor. As a result of negotiation, the following goods were bought in Texas: “foo chuck, or bean curd sticks [dried yuba sticks], 10 boxes, or 400 pounds;... 10 boxes soy [sauce], 10 jars catsup,....” “The men are to receive \$30 coin per month.”

Note 1. This is the earliest English-language document seen (Oct. 2012) that uses the term “foo chuck” or the term “bean curd sticks” to refer to yuba.

Note 2. This entire article is written in a condescending and racist tone.

Note 3. This is a rare example of Chinese consuming “catsup.” What is this sauce made from? Is it the traditional Cantonese catsup? Are the yuba and the catsup imported? Probably.

22. *Godey’s Lady’s Book and Magazine* (Philadelphia). 1870. The Chinese are queer people. 80(478):389. April • **Summary:** “Many of them have gone to Texas for the purpose of working on the Pacific Railway of that State. Before entering into the contract of hiring, they insisted that a Chinese store should be established near the place of labor. The articles of Agreement provide for the establishment of this store, and contain an inventory of the stock that must be laid in. Some of the items, and the quantity to be purchased, are as follows: 6000 quires Chinese visiting card paper; 10 pairs crape suspenders; 10 boxes foo chuck, or bean curd sticks [dried yuba sticks]; 50 pounds orange-peel; 100 pounds pak ko; 50 pounds sugar candy ; 2000 pounds salt shrimps; 60,000 fire crackers; 40 sets chop sticks and bowls; jos paper and jos sticks;...”

23. Maclay, Robert Samuel; Baldwin, Caleb C. comp. 1870. An alphabetic dictionary of the Chinese language in the Foochow dialect. Foochow: Methodist Episcopal Mission Press. xxiv + 1107 p. See p. 773. 23 cm (8 vo.). [7 ref. Eng; Chi]

• **Summary:** Each Chinese character has a number, in parentheses directly above it. Below it is the Mandarin pronunciation. To the upper right of the first character for a certain sound in the Foochow dialect is written that sound. Tones are given for each character.

In the text below, we give the page number and the Mandarin pronunciation, followed by the Foochow

已足歇火一日揭棹取出竹蔴入清水漂塘之內洗淨
 其塘底面四維皆用木板合縫砌完以妨泥污造粗紙者不須
此爲洗淨用柴灰漿過再入釜中其上按平平鋪稻草灰
 寸許桶內水滾沸卽取出別桶之中仍以灰汁淋下倘
 水冷燒滾再淋如是十餘日自然臭爛取出入臼受舂
山國皆春至形同泥麩傾入槽內凡抄紙槽上合方斗
有水確尺寸濶狹槽視簾簾視紙竹蔴已成槽內清水浸浮其
 面三寸許入紙藥水汁于其中形同桃竹葉則水乾自
方語無定名成潔白凡抄紙簾用刮磨絕細竹絲編成展卷張開時

pronunciation in parentheses.

Introduction (p. vii): “The work contains 928 different syllabic divisions or sections, as written in Roman letters and numbered in the text. This of course does not include all the distinctions arising from difference in tone.”

Page 95 Chiang (Chiong): “A sauce, pickle, brine or condiment, made of salt and sugar [sic], used in cooking; relishes, seasonings, like oilmen’s stores; salted preparations: com., *tién chiong* sweet condiments; *chiong heong* or *chiong hwong taing* a shop where condiments are sold; *chiong e* sauces, condiments; Coll. *tau chiong* a bean relish.

Page 234 Fu (Ho): Corrupted, rotten, spoiled. Coll. *tau ho* bean curd; *ho p’iêng* thin slices of curd; *ho kang* dried bean curd [pressed tofu].

Page 401 Chüan (Kwong): *kwong chiéng* rolls of glutinous rice (in thin crusts of bean-curd).

Page 435 K’o (K’o): To cook thoroughly. *k’o tau ho* to cook bean curd thoroughly.

Page 596 Ya (Nga): A germ, plumule, bud, or sprout. *tau nga* bean sprouts.

Page 763 Ssu [Shu] (Seuk): A general term for edible kinds of pulse.

Page 773 Shih (Sié): Salted eatables, as beans, etc., dried and used as relishes... *sié iu*, soy [sauce]; *iu sié* soy-beans or residual grains; *tau sie kiong* a sauce of salted beans and ginger; *sié iu ch’iong*, a soy [sauce] factory.

Page 783 Shao (Sieu): Coll. *sieu king chio* Sieuhing bean curd.

Page 847 Tou (Tau): Beans, peas, legumes. *tau sié* salt-bean relish; *tau ho* bean curd; *tau kang* (coll. *tau kwang*) cakes of bean curd; *tau nga* bean sprouts, made by covering so as to heat or ferment; *tau ho tea* “curd chopsticks”—the film [yuba] from the surface of the curd [hot soymilk] made into rolls [probably dried yuba rolls]; *tau ho peng* a bean-curd press; *peng tau leng* crushed beans; *tau chio* fermented bean-relish.

Note: This is the earliest document seen (Nov. 2011) that uses the term “fermented bean-relish” or the term “salt-bean relish” (with or without hyphens) to refer to fermented black soybeans (*douchi*).

Soy is also mentioned on pages 157 right side (“to diffuse the soy by tossing”), p. 227 right (flavored with soy), p. 257 right (Sort of pork balls seasoned with soy and unions), p. 365 right (“scalded with seasoning of soy, &c.”), p. 557 left (“to fry with a seasoning of oil, soy, etc.”).

Note: The word Foochow is also spelled Fuzhou (pinyin), and Fuhtchou. Robert S. Maclay lived 1824-1907. Address: Rev., D.D., of the Methodist Episcopal Mission; 2. Rev., A.M., of the American Board Mission [Foochow, China].

24. Hepburn, James C. 1872. Japanese-English and English-Japanese dictionary. 2nd ed. Shanghai: American Presbyterian Mission Press. xxxi + 632 + 201 p. 28 cm.

• **Summary:** This is Hepburn’s 2nd Japanese-English dictionary. The words are arranged alphabetically by their romanized spelling. Each word is written in three ways. After the romanized word (main entry), written in uppercase letters with diacritical marks (which we have largely omitted below), the same word is written in katakana, then again in Chinese characters. Then comes an abbreviation of the part of speech (n. = noun; v. = verb, etc.). Finally, one or more definitions are given.

This 2nd edition is 162 pages longer than the original 1867 edition; the Introduction is 19 pages longer, the Japanese-English section 74 pages longer, and the English-Japanese section 69 pages longer.

We will not repeat definitions that are identical to those in the 1867 edition. For new spellings, the 1867 spelling will be shown in parentheses. No new soy-related words were found in this 1872 edition. Soy-related words and terms in the 1872 edition: Adzuki (replaces Adzki) [azuki]. Amazake. Daidzu (replaces Daidz) [Daizu]. Hiriodzu (replaces Hiriodz) [Hiryozu]: A kind of food made of *tofu* fried in oil.

Note 1. This is the earliest English-language document seen (May 2012) that contains the term *Hiriodzu* (the modern spelling is Hiryozu) which refers to deep-fried tofu treasure balls.

Kinako.

Kiradzu. Koji: Barm or yeast made by the fermentation of rice or barley, in the process of making sake and soy [sauce]. Koji-buta: A shallow box for holding barm. Miso. Miso wo suru: To rub *miso* in a mortar. Natto.

Nigari. Sashi (verb). Sashimi. Shitaji (replaces Sh’taji). Note 2. This is the earliest English-language document seen (April 2012) that uses the word “shitaji” [spelled like this] to refer to shoyu or soy sauce.

Shoyu. Tofu: A kind of food made of beans, bean curd. Umeboshi (*hakubai*).

Yuba [hot water + leaf]. Yu-dofu.

The English-Japanese part of this dictionary starts after p. 558 and is titled “An index; or, Japanese equivalents for the most common English words.” Separately numbered to p. 132, it includes: “Barm, Kôji; tane.” “Soy, Shôyu.”

Terms NOT mentioned include Abura-age, Aburaage, Aburage, Atsu-age, Daitokuji natto, Edamame (or Eda mame or Yedamame), Ganmodoki, Hamanatto, Hiya-yakko, Kori-dofu, Koya-dofu, Nama-age, Okara, Tamari, Tonyu, Unohana, Yaki-dofu.

Note 2. The author apparently still did not realize that the various soyfoods he defined (with the possible exception of hiriodzu and soy sauce) were made from soybeans. Address: M.D., LL.D.

25. Douglas, Carstairs. 1873. Chinese-English dictionary of the vernacular or spoken language of Amoy, with the principal variations of the Chang-chew and Chin-chew dialects. London: Truebner & Co. xix + 613 p. 28 cm.

• **Summary:** The Preface notes that the written language of China is uniform throughout the whole of China, but it is pronounced differently when read aloud in the different parts of China. Various spoken languages of China have already been studied by Western residents in China: the Mandarin, the Hakka, the vernaculars of Canton and Amoy, etc. The Amoy vernacular is believed to be spoken by 8-10 million people. Chinese characters are not used in this dictionary.

Abbreviations (at start of parentheses): R. = Reading or literary style as to sound or meaning. C. = Chang-ebow dialect. Cn. = Chin-chew dialect.

Soy-related terms include: chiap (R. id.), (Cn. tsap; p. 46 L.2) “juice, sap, gravy, etc. kôe-chiap, brine of salt or pickled fish, &c.” kê (Amoy = kôe; p. 201 L.7) “Pickled fish or shell fish.” kê-chiap (implied; p. 46 L.2).

hû (p. 156 R.3) tâu-hû “bean-curd shaped into squares (from the pulpy ‘tâu-hoe’), but not yet pressed. See tâu.

kôe-chiap (p. 242 L.4) “Brine of pickled fish or shell fish.”

tâu (p. 480 L.3) “pease or beans, pulse.” tau-khe “bean-cake from north China used as manure.” tâu-iû “soy [sauce].” tâu-chiû “a thick sauce made from pulse.” tâu-sí “salted beans” [fermented black soybeans]. tâu-hoe “soft bean curd not yet pressed or shaped.” tâu-chiû or tâu-hû “bean-curd shaped but not yet pressed.” tâu-hû-phê “bean curd made into thin sheets [yuba] for wrapping around eatables.”

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term *tâu-hû-phê* to refer to yuba.

te tâu-hû “to shape the pieces of ‘tâu-hoe’ into pieces of ‘tâ-hû.’” tâu-koa “bean-curd that has been pressed in a cloth.” tâu-jú “bean-curd that has been pressed in a cloth then cut into smaller pieces and salted.” tâu-kiâm or tâu-che or tâu-thâu “refuse from manufacture of bean curd” [okara].

Note 1. A new, revised edition of this work was published in 1899 in London by Presbyterian Church of England. A supplement by Douglas and Barclay was published in Shanghai in 1923. In some cases, the 1923 edition is bound at the back of the 1873 edition. The 1873 edition is dedicated to Rev. James Legge, D.D., a Christian missionary and Chinese scholar.

Note 2. This is the earliest English-language document seen (Oct. 2001) that mentions okara, which it calls “refuse from manufacture of bean curd,” along with its Chinese vernacular names.

Note 3. This is the earliest English-language document seen (Oct. 2001) that uses the term “cake” or “bean-cake” to refer to ground, defatted soybeans.

Note 4. This is the earliest English-language document seen (Feb. 2004) that uses the many terms such as “tâu-hoe,” “tâu-hû-phê,” “tâu-koa,” or “tâu-jú” to refer to the many uniquely Chinese varieties of tofu.

Note 5. This is the earliest English-language document seen (April 2012) that contains the terms “kôe-chiap” or

(by implication) “kê-chiap” to refer to pickled fish or shell-fish. These terms are said by some to be the ancestors of the Malay word *ketjap* / *kecap* meaning soy sauce.

Note 6. Schlegel (1894, p. 143 footnote) gives the character for *Kê-tsiap* but the 1873 ed. of Douglas’ dictionary gives no Chinese characters for any of the words defined. Address: Rev., M.A., LL.D. Glasgow, Missionary of the Presbyterian Church in England.

26. Hepburn, James C. 1873. Japanese-English and English-Japanese dictionary. Abridged by the author. New York: A.D.F. Randolph & Co.; London: Trübner & Co. vi + 330 + 206 p.

• **Summary:** “Preface: In order to render the Dictionary more portable and convenient in size, the Author has thought it best to abridge the larger work and bring it out in its present form. In so doing, he has omitted the Chinese and Japanese characters, the synonyms, and the examples showing the use of the words, excepting such as contained a peculiar idiom, and which could not be included in a definition. All the native Japanese words, with the exception of those which were rarely used or obsolete [such as Yu-dofu], have been retained; as, also, all the words derived from the Chinese which are in current use.”

“The Second, or English and Japanese, Part, has not been abridged or altered from the original, except in the correction of such typographical errors as were met with.”

Note 1. New words in this edition that are not in the 1867 edition are preceded by “**.”

Soy-related terms: Adzuki: A small red bean. Amazake: Sweet sake, a kind of fermented rice. Daidzu: A large white bean. Soja hispida. Hiriodzu: A kind of food made of tofu fried in oil.

Kinako: A kind of food made of beans. Kiradzu: The refuse of beans left in making tofu. Koji: Barm or yeast. Koji-buta: A shallow box for holding barm. Miso: A kind of sauce made of beans.

** Moromi: The grounds left in making soy [sauce], used as an article of food.

Note: This is the earliest English-language document seen (April 2012) that contains the word “Moromi.” However the definition is poor. The word *moromi*, which is often translated as “mash,” is the stage in making soy sauce (it has a consistency resembling apple sauce) before the liquid shoyu (soy sauce) is pressed out, leaving behind the shoyu presscake or residue (which could be called “grounds”).

Natto: A kind of food made of beans. Nigari: The brine formed by the deliquescence of salt. Sashimi: Raw fish cut in thin slices and eaten with soy. Shoyu: Soy, a kind of sauce made of fermented wheat and beans. Tofu: A kind of food made of beans. Yuba: A kind of food made of beans.

Terms NOT mentioned include Aburage, Abura-age, Aburaage, Daitokuji natto, Edamame (or Eda mame or

Yedamame), Hamanatto, Hiya-yakko, Koya-dofu, Kori-dofu, Okara, Tamari, Tonyu, Unohana, Yaki-dofu.

Note 2. The author apparently did not realize that the various soyfoods he defined (with the possible exception of soy sauce) were made from soybeans. Address: M.D., LL.D.

27. Ritter, H. 1874. Tofu, Yuba, Ame [Tofu, yuba, ame]. *Mitteilungen der Deutschen Gesellschaft fuer Natur- und Voelkerkunde Ostasiens (Yokohama)* 1(5):3-5. July. [Ger]
 • **Summary:** The discussion begins with tofu: Tofu (*Das Tofu*), one of the foods that is rather widely enjoyed by Japanese, is made from beans. It can be described most simply as 'bean cheese (*Bohnenkäse*);' the literal translation of the two characters, 'beans rotten,' seems to give us the first glance of its earlier meaning as a cheese—which is a product of fermentation. However, this only appears to be so, since tofu is definitely fresh and unfermented. Perhaps the earlier name signifies that the tofu essentially consists of legumin (*Legumin*; a legume protein), not considered as a portion but as a fermentation product of the beans.

The preparation is very simple. White soybeans (older beans are preferred to newer) are soaked for about 12 hours in cold water or 8 hours in hot water, then ground with water between the stones of a handmill to form a slurry (*Brei*). The slurry is filtered through a silk or very fine-meshed sieve. The larger particles remaining in the sieve are reground in the mill. The amount of water used during grinding is such that from one measure [volume] of beans about 10 measures of slurry are obtained. This slurry is then poured into a kettle, which contains an amount of boiling water equal to about one-third the volume of the slurry; it is simmered over a low / weak fire. It is best, when the kettle is only half full, because the foam will suddenly starts to rise; this rise can be moderated by the addition of some oil. As soon as the contents of the kettle comes to a boil, it is removed from the fire and the slurry is filtered through a cotton sack [over a vat], then pressed with a lever. The pressed residue in the sack (*Der Pressrueckstand* [okara]) is often cooked again with half the amount of water.

"The filtered liquid (*Die filtrirte Fluessigkeit* [soymilk]), which now consists of a solution of legumin, is carefully freed of its foam, and then the precipitation of legumin is brought about using nigari (*shio no nigari*, *Salzbitter*) as the coagulant. Nigari is the mother-liquor which drips out of [a sack of] sea salt in humid / wet weather, consists mainly of calcium- and magnesium salts. The nigari is added in three steps. First, about ½% of the liquid is added and only on the surface, while stirring slightly, since too much stirring would be disadvantageous. Then a somewhat larger amount is added, and without disturbing the first precipitation, stirred lightly. Finally, after most of it [the curd] has settled, a little more nigari is added, as much for the formation of the final curds and to obtain the right consistency. If you add too little nigari, you won't get any cakes (*Kuchen*) [of tofu], but too

much nigari will give you a hard cake; soft tofu is preferred.

The author concludes by noting: "One cannot deny that most of the dishes made from tofu are rather nice, even for the European palate."

Note 1. This is the earliest German-language document seen which contains a description of tofu by a German living in Japan or East Asia.

Note 2. This is the earliest German-language document seen (Oct. 2001) that uses the word *Bohnenkäse* ("bean cheese") to refer to tofu.

Note 3. This is the earliest document seen written by a Westerner (Nov. 2003) that uses the word *Nigari*.

Note 4. This is the earliest German-language document seen (Oct. 2003), that mentions soymilk, which it calls *Die filtrerte Fluessigkeit*.

Yuba (*das uba*) and ame (*das Ame*) are then described briefly. "Yuba is a peculiar preparation made from the legumin of the soybean [Note: *Webster's Third New International Dictionary* (1963) defines legumin (a term derived from the French *légumine*) as "a globulin [a type of protein] found as a characteristic constituent of the seeds of leguminous plants."] This thin yellow or brownish leathery tough film or skin is formed and consists of legumin which has become insoluble through cooking in contact with the air. It is prepared in the manner described above from the legumin solution in the soybean with addition of wood ashes [which raise the pH], cooked in an open kettle. As is the case with all alkaline protein solutions, there forms on the surface an insoluble film, which is then lifted off with a skewer and dried. Yuba is prepared as a food in various ways, but is used mostly as an addition to other foods."

Note 5. This is the earliest German-language document seen (Oct. 2012) that mentions yuba, which it calls *uba*.

Ame (grain syrup or *Midzuame*) is a widely used delicacy and sweet, loved by Japanese children. It consists of glucose (starch sugar) and dextrin that results from the malting of millet (*Hirse*) or rice. The *ame* made from millet is the sweetest, while that made from rice, especially from glutinous rice (*mochi kome*), has the advantage of being whiter." The process of making *ame* is then described in detail.

Dr. Rein adds to these proceedings that tofu is used in place of protein in lacquered or japanned work, in order to produce a more plastic product.

Note 6. This is the earliest document seen that mentions rice syrup (*ame* or *midzuame*) in Japan.

Note 7. The name of this journal varies. This issue was titled *Mitteilungen der Deutschen Gesellschaft fuer Natur und Voelkerkunde Ostasiens*'s and also known as the *Transactions of the German Asiatic Society of Japan*. The place of publication is Yokohama. This article actually has no title. Address: PhD, Japan.

28. Imperial Japanese Commission to the International

Exhibition at Philadelphia (1876). 1876. Official catalogue of the Japanese section: And descriptive notes on the industry and agriculture of Japan. Philadelphia, Pennsylvania: Published by the Japanese Commission. 130 p. 24 cm.

• **Summary:** The Preface (p. 3) begins: “Never until the year 1873, had Japan participated to any great extent in the various European International Exhibitions. Up to that time she had been merely represented by some of the provincial governments, acting independently of the central Government. However, the Government determined to be worthily represented at the Vienna International Exhibition of 1873,...” But Japan was well prepared for the Philadelphia Centennial Exhibition.

Under classes of “Agricultural products” (p. 32, 34): Class 621–Peas, beans, etc. (incl. Soya, adzuki). Class 650–Sea weeds (incl. Vegetable isinglass [agar, kanten]). Class 657–Flour and starch (incl. Kudzu {*Pueraria thunbergiana*}). Class 659–Wines and other kinds of drinks (incl. Sake, Soy {a kind of sauce}).

Page 71 discusses relief painting in lacquer: “The lacquer can even be carved, and, finally, the artisan can incrustate mother-of-pearl shell, ivory, thin metal, or anything he likes into the lacquer. By mixing a sort of paste made of [soy] bean powder, or the white of eggs, with the lacquer, he can thicken it to such an extent as to give it a kind of plasticity, admitting the possibility of making impressions which remain visible after hardening.”

In the long chapter titled “Descriptive notes on the industry and agriculture of Japan (p. 37-117) is section on “Agricultural products. Classes 620-21–Cereals, vegetables, etc.” (p. 104-06). Beans, generally referring to soy beans, are mentioned many times. “Manures of a mineral nature consist of marls, shells and ashes; those of vegetable origin of inferior kinds of beans and peas or their residues, of [soy bean] oil-cakes, the residues of sake-brewing,...”

“The excellent kinds of beans and peas, which are made into a kind of cheese [tofu] and a peculiar mixed dish called ‘misso’ [miso] afford the necessary nitrogenous substances, and to a certain extent form the substitute for meat; the Soyu [shoyu; soy sauce] also belongs to this kind of food, and is frequently mixed with other dishes. With regard to animal food, it is limited almost exclusively to fish, poultry and eggs. But a change has already been effected to a certain extent in the larger towns, where butcheries have been established. An experiment of sheep farming was commenced one or two years ago” (p. 106).

Note: This is the earliest English-language document seen (April 2012) that uses the word “Soyu” (regardless of capitalization) to refer to shoyu or soy sauce.

Under “Class 657, 658–Flour, starch, etc. we read (p. 110-11): “It has been mentioned above that the various kinds of beans constitute a very important element of the national diet. Some of the preparations made of beans and peas are worthy of a short notice. In preparing the ‘Tofu,’ white beans

are soaked in water, ground between two stones, strained through a sieve and afterwards boiled. The contents of the kettle are then filtered through cotton cloth and the residue pressed out. The liquid [soymilk], which may be considered as an alkaline solution of legumine, is precipitated by successive additions of the bitter lye [nigari] which runs off from sea-salt by deliquation, and which is mostly composed of magnesium salts. The precipitate is legumine with a small percentage of legumine-compositis [-composites] and a large proportion of water. The ‘yuba’ is also made by boiling the above-mentioned legumine solution in an open kettle, with a slight addition of ash-lye. The insoluble skins which form upon the surface of the boiling liquid, are taken off and dried. Another kind of preserved food is the ‘misso’ [miso]. White beans are first boiled, pounded in a mortar to form a paste, then mixed with fermenting rice and salt, whereupon the whole mixture is placed in tubs and left in some cool place; at the end of a month it is ready for use. In mentioning the various preparations made of beans, the ‘Soy’ or, as the Japanese call it, ‘Soyu’ [shoyu] should not be omitted; but as it belongs rather to the produce of fermentation, the process will be described under the head of Class 660 [Alcohol and malt liquors].

One page 112 we read: “The soy, or ‘soyu,’ is made of a small bean, the ‘Dolichos soja,’ or ‘Soya hispida,’ to which are mixed wheat, salt and water. The beans are first boiled, and the wheat bruised and steamed; both are then mixed with a small addition of fermenting wheat, placed in flat wooden boxes and kept for several days at a fixed temperature in a special room. At the end of three days, the mass [koji] is all covered with fungi and partly with roots of germination. After having been mixed with a salt-lye, which has been prepared hot and allowed afterwards to cool down, and to depose certain impurities, the mashings are now removed to enormous coops [vats] in which they are kept for several years. Experience has shown that the best soy is produced by mixing equal quantities of mashings of three years and five years’ standing. This mixture is transferred into bags of thick cotton-cloth, placed in large boxes, and then submitted to pressure—at first only to a slight pressure, which yields the best soy, and afterwards, however, to a gradually increasing pressure, the separation of the last portions being assisted by an addition of salt water.

“The soy forms a very important condiment for all kinds of dishes, and is consumed in large quantities. In 1874 the production amounted to 1,506,402 hectolitres.”

An interesting term in the Index (p. 129) is “Bean-cheese,” which refers to tofu (p. 110).

Also: Use of hemp (*asa*) for manufacture of cloth (p. 77, 113). The tea ceremony (p. 108). Sea weeds, incl. cultivated nori and Asakusa nori in Tokio bay, kanten or vegetable isinglass, and fu (that resembles carrageen [carrageenan] moss and is used in the sizing of the warp of silk goods) (p. 109). Kudzu (p. 110). Sake (p. 111). Address: Japan.

29. *Tokyo Iji Shinshi (Tokyo Medical Journal)*. 1878. Miso, tōfu, yuba shikensetsu [On the nutritional value of miso, tofu, yuba]. No 25. p. 3-7. July. [Jap]*

30. Commission Imperiale à l'Exposition Universelle de Paris, 1878. 1878. *Le Japon à l'Exposition Universelle de 1878* [Japan at the Universal Exposition of 1878]. Paris: Publiè sous la Direction de la Commission Impériale de Japon. 2 volumes in one. 26 cm. Preface by M. Matsugata. Facsimile edition (preservation photocopy) reprinted in 1998 by BookLab, Inc. [Fre]

• **Summary:** Part I (159 p.) is about the geography and history of Japan. Part II (192 p.) is about art, education and teaching, industry, production, agriculture, and horticulture in Japan. The Preface is by M. Matsugata, Head of the Imperial Department of Agriculture and President of the Japanese Commission to the Universal Exposition of 1878.

In Part II, the section on “Fermented beverages–Condiments” contains a long section on “Shoyu” (p. 124-25). It gives a brief description and discusses the ingredients (equal parts dehulled wheat, soybeans, and salt; the best salt comes from Ako in the province of Harima), purifying the salt by dissolving then heating it in water, and stirring the mash (2 or 3 times a day from June to September), aging for 15, 20, or sometimes 30 months to obtain shoyu. The mash is then pressed in cotton sacks, and the resulting liquid is boiled, cooled, allowed to settle, then stored in small wooden tubs. The residue from the first pressing can be used to make a second-grade shoyu, which can be mixed in varying proportions into different grades of shoyu.

Note 1. This is the earliest French-language document seen (April 2012) that uses the term *shoyu* to refer to soy sauce.

In the section on “Agriculture,” the subsection on “Cereal grains” (p. 133) discusses both soybeans and azuki beans (*Phaseolus radiatus*). “The soybean (*Le Mame*) or *Soja Hispida* is comprised of several varieties: The green soybean (*l’Awo mame*), the white soybean (*le Shiro mame*), the black soybean (*le Kuro-mame*), the yellow soybean (*le Ki mame*), *Konrinza mame*, *Ichia mame*, and the saddled soybean (*Kurakake mame*). Some of these different varieties are early maturing and some are late.

“The soybean finds numerous uses, for it can be eaten cooked, ground into flour, or used for the manufacture of shoyu, miso, or tofu. The bean, its seed coat, pod, leaves, and stem serve as feed for horses. Lately it has been used on a trial basis to feed sheep, and the results proved that it was the best feed that one could give to them.

“Tofu is made with two kinds of boiled soybeans: White and yellow. After being pressed and hardened, it will last for a long time. Yuba is a somewhat similar product, made with the same ingredients. Note 2. This is the earliest French-language document seen (March 2004) that contains the

word *Tofu*.

“The black soybean speckled with white (*Gan Kui mame* [*Gankui*]) is one of the best varieties to eat.”

The azuki (“*L’Azuki ou Phaseolus radiatus*”) includes the early and late types, and comes in several varieties such as the *Hine no Azuki*, the *Dainagon Azuki* (*le Dai Nagon Azuki*), the *White Azuki* (*Shiro Azuki*), etc. Sweet azuki bean paste (*L’An*), is widely used in confectionery, is made by mixing the Azuki and sugar. One cake made from it is called *Yokan*. Azuki flour (*farine de l’Azuki*) is used to remove greasy stains from fabric / cloth. The *Yaye Nari*, a green bean (*haricot*), is used in the same ways as the azuki bean (p. 135). Note 3. This is the earliest French-language document seen (Jan. 2005) that uses the word “Azuki.”

Also discusses: Sea vegetables (many individual types with both Japanese and scientific names, p. 127-29). Kudzu (*Pueraria thumbergiana* [sic, thunbergiana], starch from the roots and fodder from the leaves, p. 139; fibers used to make cloth, p. 153). Hemp seeds (p. 139). Sesame seeds and sesame oil (*Goma*, p. 145). Peanuts and peanut oil (*Tojin mame*, p. 145). Hemp as a fiber plant (p. 151). Address: Paris, France.

31. *New York Times*. 1879. A Chinese banquet: How the Viceroy of Canton regaled Gen. Grant. July 4. p. 2.

• **Summary:** After leaving the White House, President Ulysses S. Grant and his wife, Julia, decided to travel around the world. From the *Hong Kong Daily Press*: That evening, the Viceroy’s yamen (residence) was lit with thousands of lamps. The Chinese dinner menu, with many courses listed in detail, with both Chinese and English names, includes: Fu P’i Kap Tan (pigeon eggs inclosed in bean curd [sic, yuba]). Ui Wan Tau Kan (bean soup [sic, soup with pressed tofu]). Hang Yan Tau Fu (almond curd).

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “Fu P’i” to refer to yuba.

32. Greev, Edward. 1880. What the Japanese eat. *Frank Leslie’s Popular Monthly (The American Magazine)* 10(2):164-74. Aug.

• **Summary:** A very interesting article with many large illustrations. On page 171 we read: “We quitted the dealer in vermicelli, etc., and entered a shop devoted to the manufacture of *tofu* (bean-curd, or cheese), a national dish. It is semi-gelatinous, white, delicious and wholesome. Yuba is another sort of paste food, made from white beans. Misso [miso] is a white bean paste, mixed with fermented rice and salt. It requires a Japanese-trained stomach to digest this.

Note: This is the earliest English-language document seen (March 2009) that uses the term “bean paste” (not preceded by the word “soy” or “soya”) to refer to miso.

“Soyu [shoyu] (soy), a sauce made with boiled beans and wheat, was also sold at this establishment. The mess is fermented until it is a mass of fungi, then cooled and salted

with hot lye. It is next transferred to enormous vats, in which it is kept for several years, then pressed in bags made of thick cotton cloth. The brown juice that runs from the horrible mass is soyu, and is not only palatable, but wholesome. The Japanese flavor dishes with it, and use it as we do vinegar, for pickling. It tastes like mushroom catsup.

“I had seen the process of soy-making, therefore declined to visit one of those establishments; whereupon my guide took me to a candy factory. As a nation, the Japanese are not large consumers of sugar.”

Mentions many other Japanese foods and beverages including saké (rice-wine or rice-beer); he describes how it is made. Illustrations: (1) Seven Japanese men and women seated on tatami mats around a low table having a meal; in the background is a large painted wall. (2) A Japanese butcher's shop, as seen from outside. (3) A salt vender and house servant, carry goods at both ends of a shoulder pole. (4) The *Pelor japonicum*—a curious Japanese fish. (5) A dealer in dried fish with a man carrying goods on a shoulder pole. (6) Japanese entertaining European guests, seated in chairs at a raised table. (7) A rice warehouse near Tokyo. (8) A saké shop at New Year's with a large crowd of men. (9) A Japanese tea house.

33. Kinch, Edward. 1880. Contributions to the agricultural chemistry of Japan. *Transactions of the Asiatic Society of Japan* 8(Part 3):369-415. Oct. See p. 392-93, 398-401, 413-15. Reprinted in March 1907 as a monograph. [29 ref]

• **Summary:** “Of vegetable manure the principal are seaweed, the residues from different manufactures, e.g. rape cake, sesamum cake, cotton cake and other oil residues, as from camellia seeds, the residues from the manufacture of *shōyu*, *ame* [rice syrup], *sake*, *shōchu*, indigo etc.” (p. 392). [Note that soybean cake is not mentioned].

“The oil cakes, *ame kasu* (malt dust, the residue from the manufacture of *ame* from rice, millet and malt of wheat or barley) and *shōyu kasu* [The residue from the manufacture of *shoyu*] are the most valuable. These manures should not be applied in quantity at the seed time in an unmixed state, owing to their fermenting and also attracting and harbouring insects, which attack the seeds and young plants.” Rape cake (*Abura kasu*) and Sesamum cake (*Goma kasu*) are also mentioned.

There are original analyses (p. 393) of 6 samples of “Soy [sauce] residues, *Shōyu kasu* Residue from the manufacture of *Shōyu* from beans and wheat.” These vary over an extremely wide range. Nitrogen content ranges from 1.27% to 5.20%, and ash is 0.57% to 11.53%.

“Soy bean, sometimes called Japan pea, *Glycine hispida* (Moench) also known as *Soja hispida*: of this many varieties of different colour and size, etc. are met with, but as far as is known, they differ but little in composition. They are known collectively as *Daidzu* or *O-mame*; a common white round variety is known as *Miso-mame* and *Shiro-mame*; other

names of varieties are *Awo-mame*, *Kuro-mame*, *Ki-mame*, *Ichiya-mame*, *Kurakake-mame* and *Korinza* (p. 398).

Note 1. This is the earliest English-language document seen (March 2008) which states clearly that the present scientific name of the Japan pea is *Glycine hispida* (Moench)—that is, the soybean. Actually, however, the correct scientific name since 1873 had been *Glycine hispida* (Maxim.)

“This bean approaches more nearly in its proximate chemical composition to animal food than any other vegetable known. It contains about one-fifth of its weight of fat and nearly two-fifths of nitrogenous matter. It is extensively cultivated in the north of China and also grows in the Himalayas. In China it is compressed for the sake of its oil, and the residual cake is used for food and also extensively as a manure. In Japan it is used in the preparation of *Shōyu*, *Tōfu*, *Miso* and also of *Yuba*, and in these various forms enters to a considerable extent into the food of the nation, to which it is a most valuable contribution, supplying as it does the alimentary principles—albuminoids and fat—in which the staple food, rice, is deficient: it also contains a much larger percentage of the necessary mineral matters than does rice. Of late years this bean has been grown experimentally in different parts of Germany, with success. The haulm and leaves which furnish a valuable fodder, and a variety is cultivated specially for that purpose and known as *Kari-mame*.

“The composition of a sample of the white round variety known as *Miso-mame* was found to be: Water 11.32%, ash 3.86%, fat 20.89%, albuminoids 37.75%, fibre 2.00%, starch etc. 24.08%. Total: 100%” (p. 398). Note 2. This and each of the following nutritional analyses appear to be original, not cited from earlier sources.

A table then contains an analysis of each of the following 4 products: Shiro-miso from Osaka, aka-miso from Osaka, to-fu [tofu], and kori to-fu [tofu]. The composition of aka-miso was found to be: Water 50.40%, ash 12.50% (incl. 11.00% common salt), sugar 0.61%, nitrogenous matter 10.08%, fibre 8.25%, soluble carbohydrates 18.16%. Total: 100%.

The composition of to-fu was found to be: Water 89.29%, ash 0.48%, fat 3.32%, nitrogenous matter 4.87%, fibre -, soluble carbohydrates 2.04%. Total: 100%.

The composition of kori to-fu was found to be: Water 18.75%, ash 1.60%, fat 28.80%, nitrogenous matter 48.80%, fibre -, soluble carbohydrates 2.05%. Total: 100%.

There follows a discussion (p. 398-400) of foods that can be made the soy bean (*miso*, *kōji*, *tōfu*, *kōri-dōfu*, and *shōyu* or soy), and a description of how each is made. “*Miso* is made by mixing the boiled beans with *Kōji* (rice ferment used in *sake* brewing) in various proportions, and with more or less salt, and keeping the mixture in tubs in a cool place for about a month. It will be noticed [from the table above] that one variety contains much sugar, derived from the *Kōji*,

and little salt, and the other much salt and little sugar.

“*Tôfu* is made by pounding the soy beans after soaking in water, then straining through a sieve and boiling in water. The solution is filtered through cotton cloth and the residue pressed; the strained liquor, containing vegetable casein or legumin, is precipitated by brine. *Nigari*, formed by the deliquescence of common salt. The precipitate pressed and cut into cakes is *tôfu*.”

Note 3. This is one of the earliest English-language documents seen (Jan. 2004) that uses the word “tofu.” This is *the* earliest document seen (Jan. 2004) that uses the word “cakes” in connection with tofu.

Note 4. This is the earliest English-language document seen (Oct. 2008) that mentions “vegetable casein” in connection with soybeans or tofu, or that equates “vegetable casein” with “legumin” (the word Kinch used in 1979), the water soluble protein in soybeans that can be precipitated to make tofu.

“*Kôri-dôfu* is prepared from the above by freezing it and afterwards exposing to the sun, when, in the process of thawing, the greater quantity of the water is removed, leaving a horny spongy residue.

Note 5. This is the earliest English-language document seen (Feb. 2004) that mentions dried-frozen tofu, which it calls “kôri to-fu” or *kôri-dôfu*. This is also the earliest document seen (May 2012) that uses the word “spongy” to describe the texture of dried-frozen tofu.

“An example of *shôyu* or soy was found to have a specific gravity of 1.199 and to contain per litre: Total solid residue 359.88 grms., ash 195.16 grms., sugar 31.03 grms., nitrogenous matters 41.00 grms., free acid, expressed as acetic acid 6.20 grms. The ash is chiefly common salt, but contains a quantity of phosphates derived from the mineral matter of the beans and kept in solution by the acetic acid formed.”

“The [shoyu] mashings are removed to large vats and there kept for many months, usually twenty, and frequently for 3 or 5 years. The better qualities of *shoyu* are kept the longer times. It is found that the best soy is produced by mixing that kept for five years with that kept for three years. After it has been kept a sufficiently long time, it is strained through thick cotton bags and the residue pressed. Before filtering, honey is sometimes added in the proportion of 10 *kin* to 1 *koku* of *moromi* or crude soy, in order to give it a sweet taste. Occasionally a sweet sake, *ama-sake*, prepared by taking, 1 *koku* of *koji* to 7 *to* of water and 1 *to* of steamed rice, mixing them together and steaming for two hours is added instead of honey. The residue obtained on pressing *moromi* is usually again mixed with salt and water, and pressed; this yields an inferior *shoyu*. Sometimes water is added to this second residue and it is again pressed. The residue first obtained is sometimes used as food and the last residue as manure.

“The *Shoyu* after straining is allow[ed] to settle for two

days in large tanks, then drawn off and filtered; before sale it is heated to incipient ebullition, otherwise it quickly goes bad.

“The quantity of nitrogenous matter in solution in *shoyu* appears to increase with the length of time elapsing before filtering the *moromi*.”

Note 6. *Webster's Dictionary* defines ebullition as “the act, process, or state of boiling or bubbling up.”

Also contains detailed information on and chemical composition of adzuki beans or *shôdzu* (*Phaseolus radiatus*), daikon, sea-weeds (incl. three types of Asakusa nori (*Porphyra vulgaris*), kôbu (*Laminaria saccharina*) [konbu, which Thunberg and Kaempfer also discussed], wakame, arame or kokusai, awo-nori or ohashi-nori, hijiki, Irish moss or carrageen, tokoroten-gusa or agar agar, kanten or tokoroten, and funori), and sake.

At the end of the article is the summary of a discussion. Professor Atkinson made some remarks about *shôyu*. He said that Mr. Isono, a graduate of the University of Tôkiyô, had made analyses of *shôyu moromi* at various periods (after 3, 10, and 20 months), which are printed in full, together with an analysis of Kikkoman *shoyu*. “It was interesting to observe the disappearance of the glucose, and the gradual increase of the soluble nitrogen from the first sample to the last. The greatest change took place between the third and the tenth months. but, after the removal of the greater part of the glucose and dextrin, converted into alcohol and lost by evaporation, very little alteration occurred, except in the color of the liquid, which became darker.”

Note 7. This is one of the earliest English-language documents seen (May 1999) that contains an accurate description of miso; it also contains very early information on the composition of different types of miso.

Note 8. This is the earliest English-language document seen (Dec. 2000) that uses the term “chemical composition” in connection with the soy bean.

Note 9. This is the earliest English-language document seen (Nov. 2003) that uses the term “sesamum cake” to refer to sesame cake.

Note 10. This is the 2nd earliest English-language document seen (April 2012) that uses the term “shôyu” to refer to soy sauce.

Note 11. This is the earliest English-language document seen (July 2001) that contains the word “fibre” in connection with soy beans. The fibre content of one variety of soy bean and one miso variety are given.

Note 12. This is the earliest English-language document seen (July 2003) that uses the Japanese word “Goma” to refer to “sesame.”

Note 13. This is the earliest English-language document seen (Nov. 2005) that contains the term “cotton cake.”

Note 14. This is the earliest English-language document seen (April 2012) that contains the word “Kikkoman.”

Note 15. This is the earliest English-language document

seen (May 2012) that contains the term *shōyu kasu* (in italics, with diacritics) which it defines as “Residue from the manufacture of *Shōyu* from beans and wheat.” Address: Prof. of Chemistry, Imperial College of Agriculture, Komaba, Tōkiyō.

34. Giliaranskii, V.P. 1882. Monografiya Kitaiskago maslichnago gorokha “Soja hispida” [Monograph on Chinese oil-bearing pea plant *Soja hispida*]. *Trudy Imperatorskago Vol'nago Ekonomicheskago Obshchestva, St. Petersburg (Transactions of the Imperial Free Economic Society)* 3(3):269-71. Nov.; 3(4):435-50. Dec. [10 ref. Rus]

• **Summary:** Part I (Nov.): Soybeans were introduced to Russia to increase the country's food production. Discusses the nutritional value of soybeans. Haberlandt introduced the cultivation of soybeans to Europe, and his trials proved that soybeans could be successfully grown in various European countries. However Podoba was the first who practically / experimentally proved the success of soybean in Europe. Podoba also installed a laboratory partner named Fein in southern Russia. The first popularizer was A.V. Sovetov, who initiated further projects and data collection.

Giliaranskii began his work in 1881 when he received 5 soybean seeds from his director, Nikolai Pavlovich Ill'inu, who also allowed Giliaranskii to use his equipment and laboratory. In 1880 the Asian Department of Foreign Ministry (of Russia) obtained soybean samples by demand. In the same year, crop information about soybeans was received from the Consulate.

In the text, Giliaranskii then cites five documents that were helpful to him in compiling this article: (1) Organov, N. 1881. *Soia ili maslichnyi gorokh (Soja hispida *)* [Soybean or oil-bearing plant (*Soja hispida **)]. *Trudy Imperatorskago Vol'nago Ekonomicheskago Obshchestva, St. Petersburg (Scholarly Works of the Imperial Free Economical Society)* 1(2):184-198. Feb.; 1(3):304-325. March. (2) The publications of Dr. Bretschneider, who was on a mission to Peking. (3) *La Planta Soja hispida*, by Geerts, a report from a mission to Japan. Chapters 3 and 4 from Part 1; Chapters 4 and 5 from Part 2 (translation from French), including much information about soy sauce and miso. (4) The famous book: Haberlandt, Friedrich. 1878. *Die Sojabohne: Ergebnisse der Studien und Versuche ueber die Anbauwuerdigkeit dieser neu einzufuehrenden Culturpflanze* [The soybean: Results of studies and trials on the potential for growing this newly introduced crop plant]. Vienna, Austria-Hungary: Carl Gerold's Sohn. ii + 119 p. (5) *Oesterreichische Monatsschrift für den Orient* (Vienna). 1881. *Die japanische Sojabohne als Nahrungsmittel* [The Japanese soybean as a source of food]. 7(12):204-05. Dec. 15.

Part II (Dec.): Chapter 1. Oil of soybean seeds (*Maslo semian soi*). Bretschneider discusses the taste and use of soybeans in Russia. Karl Brendt is mentioned again. Giliaranskii states: “My yield included 40 *zlotnik* (1

zlotnik = 4.26 gm) of oil, produced from the variety of seeds received from Mr. Podoba. The oil was extracted using sulfuric ether. I had about 4 lb of soybeans, which I ground in a coffee mill. Then I immersed the flour in ether in a test tube for 4-5 days. Almost all of the oil was extracted. I also extracted the oil using carbon bisulphide, but the yield was 1.5% less than with sulfuric ether.

“I also tried to extract the oil using petroleum ether, but again the yield was unsatisfactory. In addition, the petroleum ether dissociates from the soybean oil, thus changing the latter's smell and taste. The product known as *rigolen*, which has a boiling point of 35°C, would be the best solvent of all, it is impossible to obtain in St. Petersburg.

“The oil I extracted using sulfuric ether had a clear, heavy yellow color, similar to olive oil in color and viscosity... however as time passes, under certain conditions, it becomes black in color.” Through his experiments, Giliaranskii proved that soybean oil contains nitrogen. Sato and his experiments are mentioned (p. 436-37).

A table (p. 437-38) gives the percentage composition of soybean cake (water, protein, fat, nitrogen-free extract, cellulose, ash), with two columns based on the research of Völcker (1872) and J. Kuehn (see Pott 1889, p. 490). Soybean oil cakes, known in English as “bean-cakes,” are an important export from the port of Newchwang to southern China, especially to Syamou (?). Discusses the price of soybeans.

Chapter 2. Uses of soy sauce (in China, as well as Europe). Methods of preparing soy sauce are described in numerous Chinese and Japanese publications, but also in European publications such as: (1) *Etude pratique du commerce d'exportation de la Chine*, by N. Rondot (1848, Renard, p. 188). (2) *Chinese Commercial Guide*, by W. Williams (1863, Hong Kong, p. 139). (3) Newspaper article by K.A. Skachkov in *Golos [Voice]* (No. 72, 1882). The main ingredients used in making soy sauce are yellow soybeans (*Soja hispida*, Shiro-daizu or Teppo-mamé or Shoyu-mamé), wheat koji, salt, and water. A detailed description of the process is given. Amazake is sometimes added to soy sauce to give variation in the flavor. Kinch's analysis of Geerts' data (p. 443) gives the relative density of soy sauce as 1.199. The density of soy sauce solids is 359.88 gm/liter. A table (p. 443) gives the density (in gm/liter) of soy sauce constituents as follows: Ash 195.16. Sugars 31.03. Albumen 41.00. Acids 6.20.

Chapter 3. Sauce *miso* or *dai-dzu-ko*. Describes seven different types of Japanese miso and how each is made: 1. Original miso or *shiro miso*—white with little salt. 2. *Chu-miso*—very salty. 3. *Aka-miso*—red, prepared with koji. 4. *Nagoya-miso*. 5. *Kinzanji-miso*—made with soybeans, eggplant and gingerroot. 6. *Mugi-miso*—made with barley and soybeans. 7. *Kogane-miso*—a type of *aka-miso*. A table (p. 445) compares the nutritional composition of *shiro-miso* and *aka-miso*.

Chapter 4. Tofu. Chinese name: doufu. English name: bean-curd. Japanese name: tofu. Yellow soybean varieties (*Gogwatsu-mamé*, *Wase-mamé*, and *Natsu-mamé*) are widely used in Japan to make tofu. A table (p. 447-48) gives the percentage composition of tofu, with two columns based on the research of Kinch (1880) and Geerts (1876). Tofu is seen as an excellent alternative for dairy cheeses.

Chapter 5. Preparation and composition of dried-frozen tofu (kori-tofu) and other types of tofu (dried cheeses). A table gives the nutritional composition of kori-tofu (based on Kinch 1880). Also discusses *agé-tofu*, *abura-tofu*, and yuba. Describes the method for preparing yuba, which is eaten in soups in Japan. Several tables were summarized by Nikitin in Russian (1900) and German (1901).

Note: This is the earliest Russian-language document seen (Oct. 2012) that mentions yuba. Address: USSR.

35. *Brisbane Courier* (Queensland, Australia). 1883. Imports (A special charge is made on consignees' announcements inserted in this column). June 9. p. 4.

• **Summary:** "Venice, s. [steamer], from Hongkong: 46 cases merchandise,... 47 boxes soy [sauce],... 1 bag seaweed,... 18 packages preserved ginger, 5 boxes bean curd, 15 boxes sauce, 8 baskets ginger,... 10 boxes bean cake,... 5 boxes bean stick" [dried yuba sticks].

Note 1. Bean cake, which is apparently a food, is probably fermented tofu, but could possibly be dried frozen tofu. If it is fermented tofu, this is the earliest English-language document seen (Oct. 2011) that mentions fermented tofu, which it calls "bean cake."

Note 2. These goods are clearly for Chinese customers in Australia.

Note 3. This is the earliest document seen (Jan. 2010) that clearly mentions yuba being imported or exported.

36. International Health Exhibition, London. 1884. The Health Exhibition Literature. Vol. XVII. London: William Clowes and Sons, Ltd. 749 p.

• **Summary:** Also cited as: (1) "Catalogue of the exhibits of Japanese Food Products at the International Health and Education Exhibition, held in London, 1884." (2) "Japan. International Health Exhibition A. Descriptive catalogue..." (3) "London, International Health Exhibition, London. 1884. The Health Exhibition Literature. Vol. XVII."

A map of the "International Health Exhibition, London, 1884" (p. 537-38), which was held at the Royal Albert Hall in South Kensington, on Exhibition Road near the High St. Kensington Station; gives an overview of the hall and surrounding roads and railway stations. The title of the section related to food is "Japan. A descriptive catalogue of the exhibits sent by the sanitary bureau of the Japanese Home Department," prepared under the direction of K. Nagai, Commissioner, and J. Murai, Assistant Commissioner. There follows a 2-page Introduction by Kiuchiro Nagai,

dated Sept. 1884. Then a table of contents of five groups; Group I is food. Then a table of Japanese weights and measures. Pages 545-71 begin: the "Descriptive catalogue." Group I—Food. Detailed information and / or chemical analyses are given of the following: are given: (7) Soy bean (*Glycine hispida*) *O-mame*. (7A) *Phaseolus radiatus*. Adzuki. (192) Dried fruit of *Lagenaria vulgaris*—*Kan-pio* [*kanpyo*], cook with soy sauce. Mushroom (*Agaricus campestris*). *Shii-take* [*Shiitake*], cook with soy sauce. Kanten, vegetable isinglass, cook with soy sauce. Frozen konniaku [*konnyaku*]. Minoboshi daikon, cook with soy sauce. Fu, nama-fu, yaki-fu (roasted) (Wheat gluten). Kuzu starch. Buckwheat soba, cook with soy sauce. (203) Hijiki sea weed (*Cystoseira* species), cook with soy sauce. (204) Ogo sea weed (*Gigartina* sp.), cook with soy sauce. (205) Wakame sea weed (*Alaria pinnatifida*), cook with soy sauce. (206) Agar-agar (*Gelidium corneum*. Tengusa). Use to make tokoroten or kanten. (207) Tangle (*Laminaria japonica*). Kombu [*konbu*]. (208) Laver, dried (*Porphyra tenera*). *Asakusa-nori*. (209) Awonori [*Aonori*], dried (*Enteromorpha compressa*).

(210) Frozen bean-curd. *Kôri-tôfu*. "Preparation.—It is made by steeping soy beans in water and then grinding them, after which the refuse is removed by boiling and dissolving it in a little oil. This refuse is called 'Kiradzu' [*kirazu*] or 'Unohana.' The liquid [soymilk] remaining after taking away such refuse is put into a kettle and again boiled. Upon the surface of the water [*sic*, soymilk] there forms a thin substance [film] like wet paper; this is skimmed off and dried. It is called 'Yuba' (lit., bean-curd skin), the taste of which is very agreeable. When it [the soymilk] begins to bubble up brine is sprinkled over it in order to stop the bubbles, and it is put into a special wooden box, then thrown into a cotton cloth bag and coagulated into long square shapes, which is bean-curd."

Three tables follow: (1) "Analysis of bean curd" [tofu]. (2) "Analysis of dried bean-curd" [dried frozen tofu]. (3) "Analysis of refuse of bean-curd" [*okara*].

Note 1. In the description of making tofu (above), yuba is removed during the tofu-making process.

(211) Yuba (Skin of bean curd; "Yuba is made during the process of making bean curd, and is a thin, yellow, transparent substance.")

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the term "bean-curd skin or the term "Skin of bean curd" to refer to yuba.

(213) Somen (Vermicelli), cook with *shioyu* (soy sauce).

Note 3. This is the earliest English-language document seen (April 2012) that uses the term *shioyu* to refer to shoyu / soy sauce.

(228) Umeboshi (Salted and dried plums). (229) Miso (a fermented substance made from soy beans and yeast [*koji*]). *Miso-ai*, *Sansho-miso*, *shoga-miso*, *wasabi-miso*, *togarishi-miso*, *goma-miso* [*sesame miso*], *keshi-miso*, *katsuwo-miso* [*katsuo-miso*]. (229a) *Konomono* [*Kô-no-mono*] (Vegetables

pickled in fermenting mixture of bran and salt (incl. Nukamiso-dzuke ([Nukamiso-zuke] pickled in salt and bran), Takuwan-dzuke (Takuan-zuke; daikon radishes pickled in salt and bran), Shiwodzuke ([Shiozuke] salt-pickled), Shiooshi (salted and pressed), Kasudzuke ([Kasuzuke] pickled in sake residue), Misodzuke (Misozuke; pickled in miso), &c.). Takuwandzuke [Takuanzuke; Takuan pickles]. (229b) Kasuzuke (mentions miso soup). (230-35) Shoyu (Soy) and how it is made [p. 21 of section]. Chemical analysis of Kikkoman shoyu. Eight chief brands of shoyu. (236) Mirin (a kind of sweet liquor), with koji. Sembei [senbei], with miso. (242) Yokan, three varieties. (246) Midzu-ame [mizuame]. Frozen mochi.

Class III—Prepared animal substances. Dried cod fish, cooked with soy [sauce]. Beef tsukudani, cooked with soy [sauce].

Class IV. Beverages. Sake (wine), made with koji (yeast). “Koji (yeast) is used for brewing Sake in Japan, almost like malt used for brewing beer in western countries,…”

Class VI. Cookery practically demonstrated. Nippon Ryoriya (Japanese restaurant), incl. misoshiru (miso soup), and konomono. Address: England.

37. International Health Exhibition, London. 1884. (210) Frozen bean-curd. Kōri-tōfu (Document part). In: International Health Exhibition, London. 1884. *The Health Exhibition Literature*. Vol. XVII. London: William Clowes and Sons, Ltd. 749 p. See p. 560-61.

• **Summary:** “It is made by freezing common bean-curd. Bean-curd is made of *Daidzu Glycine (soja) hispida* and contains a large quantity of vegetable albumen. This is one of the most frequent kinds of food of the middle and lower classes of the people of Japan; it contains an abundance of nourishment, and Hygeists recommend its use. However, bean-curd is indigestible as in passing through the process of freezing, it undergoes a change. Ordinary bean-curd is not a safe eatable to remove to a distance, as it spoils very readily: therefore, frozen bean-curd only is exhibited here with explanation of the ingredients of the common curd.

Preparation.—It is made by steeping soy beans in water and then grinding them, after which the refuse is removed by boiling and dissolving it in a little oil. This refuse is called “Kiradzu” or “Unohana.” The liquid remaining after taking away such refuse is put into a kettle and again boiled. Upon the surface of the water there forms a thin substance [yuba] like wet paper; this is skimmed off and dried. It is called “Yuba” (lit., bean-curd skin), the taste of which is very agreeable. When it begins to bubble up brine is sprinkled over it in order to stop the bubbles, and is put into a special wooden box, then thrown into a cotton cloth bag and coagulated into long square shapes, which is the bean-curd.

“Analysis of bean curd: Nitrogen 0.76%. Fat 2.36%. Water 90.37%. Ashes [ash] 0.76%.

“Analysis of dried bean-curd [moisture free]: Nitrogen 8.09%. Fat 24.59%. Ashes [ash] 7.79%.

“Analysis of refuse of bean curd [kirazu or unohana]: Albumen 3.664%. Fat 0.837%. Glucose 0.266%. Starch 2.630%. Cellulose 2.896%. Other non-nitrogenous substances 6.156%. Water 85.660%.”

Note: This is the earliest English-language document seen (July 2012) that seems to use the word “nitrogen” and the word “albumen” interchangeably.

“Use.—Bean curd is prepared for eating by boiling it or holding it over a fire; it is usually eaten with soy [sauce] and various condiments. It easily digests and is suitable food for adults, for infants, or for invalids, but it cannot be preserved for more than a day or two, owing to its perishable nature, whereas frozen bean curd does not easily spoil and can be preserved for a length of time, but it is indigestible and furnishes less nourishment than the unfrozen.” Address: England.

38. International Health Exhibition, London. 1884. (211) Yuba (Skin of bean curd) (Document part). In: International Health Exhibition, London. 1884. *The Health Exhibition Literature*. Vol. XVII. London: William Clowes and Sons, Ltd. 749 p. See p. 561-62.

• **Summary:** Preparation.—Yuba is made during the process of making bean curd [tofu], and is a thin, yellow, transparent substance.

“Use.—It is used as a food adjunct with boiled rice, by most persons, by boiling or warming over a fire and salting it.

“Analysis: Albumen 51.597%. Yellow oil 15.620%. Cellulose 0.401%. Nitrogenous substances 6.651%. Ashes [ash] 2.821%. Water 22.850%. Total 100.000%

“Analysis of dry substance [moisture free]: Carbon 2.821%. Nitrogen 22.850%. Hydrogen 42.024%. Oxygen 8.257%. Ashes 5.868%. Water 18.180%. Total 100.000%” Address: England.

39. *Gardeners' Chronicle (London)*. 1884. Japanese food vegetable products. 22:781-82. Dec. 20. New Series.

• **Summary:** “The Japanese Commission at the late International Health Exhibition have produced an excellent catalog of their exhibits, which contains a great deal of valuable information on the production and uses of the specimens in question. In the first group, devoted to food products, a series of analyses is given of the principal grains and pulses, fungi, cucurbitaceous fruits, &c.”

“*Kori-tōfu: Frozen Bean Curds*.—It is made by freezing common Bean curd, which is made of *Daidzu (Glycine [Soja] hispida)*, and contains a large quantity of vegetable albumen. This is one of the most frequent kinds of fruit of the middle and lower classes of the people of Japan; it contains an abundance of nourishment, and hygeists [hygienists?] recommend its use. Bean curd is indigestible,

but in passing through the process of freezing it undergoes a change. Owing to the Bean curd spoiling very readily, it is not suitable for carrying long distances. It is made by steeping Soy Beans in water and then grinding them, after which the refuse is removed by boiling and dissolving it in a little oil. The liquid remaining after taking away such refuse, is put into a kettle and again boiled. Upon the surface of the water a thin substance, like wet paper, forms, this is skimmed off and dried and known as 'Yuba,' the taste of which is very agreeable. When it begins to bubble up brine is sprinkled over it in order to stop the bubbles and it is put into a special wooden box and afterwards thrown into a cotton-cloth bag and coagulated into long square shapes, which is the Bean curd.

"Bean curd is prepared for eating by boiling it, or holding it over a fire. It is usually eaten with soy [sauce] and various condiments; it is easily digestible and is suitable food for adults, infants, or invalids, but it cannot be preserved for more than a day or two owing to its perishable nature, whereas frozen Bean curd can be preserved for a length of time, but it is indigestible and furnishes less nourishment than the kind first named. The "yuba" or skin of the Bean curd is used as a food adjunct, with boiled Rice, by most persons, by boiling or warming over a fire and salting it."

Other Japanese foods described in detail in this early article are Ginkgo biloba (Ginnan, the fruit of the maidenhair tree), Lagenaria vulgaris (Kau-pio, a dried fruit), Agaricus campestris (Shii-take [Shiitake] mushrooms), Gelidium corneum (Agar-agar or Kanten), Frozen Kouniaku [Konnyaku], Katakuri Starch, Kuzu Starch (from the root of Pueraria Thunbergiana), Warabi Starch, Hijiki (Cytoseira sp.), Ogo (Gigartina sp.), Wakame (Alaria pinnatifida), Tangre [Tangle] or Kombu (Laminaria japonica. "It is used as a food by boiling with soy, sugar, mirin, &c., or served in soup"), Laver, dried-Asakusa-nori (Porphyra vulgaris) [Note that items from Hijiki to Laver are sea vegetables], Umeboshi: Salted and dried plums.

Continued in the issue of 10 Jan. 1885.

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the terms "frozen," or "Kori-tôfu," or "Bean Curds," or "Frozen Bean Curds" to refer to frozen tofu.

Note 2. This is the earliest document seen (Jan. 2010) concerning the use of soya in infant foods or infant feeding.

Note 3. This is the earliest English-language document seen (Dec. 2006) that uses the word "Umeboshi" or the term "Salted and dried plums" to refer to umeboshi salt plums.

Note 4. As of 1975, the scientific name of the shiitake mushroom was *Lentinus edodes*. It had been cultivated and used as human food for centuries in China and Japan. It is not used much in most developing countries, nor in the West where the common champignon *Agaricus bisporus* (*A. brunnescens*) is the mushroom of commerce. One important advantage of shiitake is that it can be cultivated on wood.

Note 5. This is the earliest English-language document seen (Oct. 2008) that uses the term "vegetable albumen" to refer to soy protein.

40. *Brisbane Courier (Queensland, Australia)*. 1885. Imports (A special charge is made on consignees' announcements inserted in this column). June 23. p. 4.

• **Summary:** "De Bay, s. [steamer], from Hongkong:... 30 cases 20 boxes, 10 packages and 38 bundles tea, 10 cases eggs, 4 boxes opium, 50 cases oil, 2,693 bags and 2 boxes rice, 5 boxes wine, 1 box beans,... 2 boxes beansticks [probably dry yuba sticks],... 29 cases soy [sauce],... boxes bean cake [fermented tofu],... 4 boxes bean sauce,... 4 boxes sauce beans, 4 packages ginger,..."

Note: This is the earliest English-language document seen (Oct. 2012) that uses the word "beansticks" to refer to what are probably dried yuba sticks.

41. *Brisbane Courier (Queensland, Australia)*. 1886. Imports (A special charge is made on consignees' announcements inserted in this column). Nov. 20. p. 4.

• **Summary:** "Tannadine, from Hongkong: 10 baskets and 6 chests bean sticks [probably dried yuba sticks],... 1 basket bean curd [tofu], 10 baskets [soya] bean sauce, 3 baskets salt bean [probably fermented black beans / fermented black soybeans],... 6 boxes preserved plums,... 4 boxes beans,... 15 chests soy [sauce], 1 chest Joss sticks,..."

42. Hepburn, James Curtis. 1886. A Japanese-English and English-Japanese dictionary. 3rd ed. Tokyo: Z.P. Maruya & Co., Limited. Yokohama, Shanghai, Hongkong & Singapore: Kelly & Walsh, Limited. London: Trübner & Co. 962 p. 22 cm.

• **Summary:** "During the fourteen years which have elapsed since the publication of the last edition of this Dictionary [in 1867], the Author has kept it constantly before him, correcting errors, improving and enlarging the definitions, and adding new words and illustrations, according as his time and other important engagements allowed him. But owing to the amazing changes and rapid advancement of the Japanese in every department, he has found it difficult to keep pace with the corresponding advance of the language in the increase of its vocabulary. He has endeavored, however, to collect these words, examine, classify and define them. Many, no doubt, have escaped his notice. Still there is an addition of more than ten thousand words to the Japanese and English part."

New soy-related definitions in this edition, not found in or changed from the 1867 edition: Aburage: Anything fried in oil or grease, especially fried *tofu*. [fried tofu].

Amazake: Sweet *sake*, a kind of drink made of fermented rice.

Azuki: A small red bean, *Phaseolus radiatus*. Daizu: A kind of large white bean, *Soja hispida*.

Hiriôzu: A kind of food made of *tôfu* fried in oil.

Kinako: A flour made of beans.

Kirazu: The refuse of beans left in making *tôfu* [okara].

Note 1. This is the earliest purely English-language document seen (Aug. 2011) that uses the word “Kirazu” to refer to what is now called “okara” or “soy pulp.”

Koji: Barm or yeast made by the fermentation of rice or barley in the process of making *sake* or *soy* [sauce].

Miso: A kind of sauce made of beans, wheat and salt.

Miso wo suru: To rub miso in a mortar.

Sake: A fermented liquor brewed from rice. Sake wo

kamosu: To brew sake. Sake ni yô: To be drunk. Sake no uye ga warui hito: One who behaves disorderly because of drink.

Sake ni oboreru: To be addicted to drink [alcohol].

Shoyu: Soy, a kind of sauce made of fermented wheat and beans. Syn. [Synonym]: Shitaji.

Tamari: Soy, shôyu. Note 2. This is the earliest English-language document seen (April 2012) that uses the word “Tamari” to refer to a type of Japanese soy sauce,

Tofu: A kind of food made of beans, bean curd.

Unohana: The *Deutzia scabra*; also refuse of beans from making tofu. Yuba: A kind of food made of beans, the skin of bean curd.

Terms listed unchanged from the 1867 edition include Natto, and Yu-dofu.

No listing is given for: Daitokuji natto, Edamame [Yedamame], Hamanatto, or Okara.

The “English and Japanese dictionary,” which starts on page 771-73, contains the most important English words with numerous examples. Included are: Bean: Mame. Spec. Azuki, sora-mame, daizu, endo, ingen, sasage. Bean pod: Mame no saya. Bean curd: Tôfu.

Soy: Shôyu.

Note 3. This is the earliest English-language document seen (Oct. 2001) that uses the word *Unohana* to refer to okara. Address: M.D., LL.D., Yokohama, Japan.

43. Rein, Johann Justus. 1886. Japan: Nach Reisen und Studien, im Auftrage der Koeniglich Preussischen Regierung dargestellt [Japan: Travels and researches undertaken at the cost of the Prussian government. Vol. II.]. Leipzig, Germany: Verlag von Wilhelm Engelmann. 679 p. See p. 5, 65-70, 123-27, 185, 649. Illust. Indexes (1 German and Latin, 1 Japanese). 2nd ed. 1905. [9 ref. Ger]

• **Summary:** A superb book, showing the high German art of studying other cultures. The many illustrations are either beautiful wood engravings (*Holzschritte*), real photographs, or actual samples of paper or textiles (glued in). In the chapter on “Food plants” (*Nährpflanzen*), the following is a partial contents of the section on “Pulse or leguminous plants” (*Hülsenfrüchte oder Leguminosen*, p. 65-71): Introduction to crops cultivated in Japan. 1. The ground-nut and ground-nut oil. 2. The soybean: “Among the pulse of Japan (and not the less of China), the soy-bean ranks first

in extent, variety of use, and value; and chemical analyses prove the empirical judgment is well founded. In point of nutriment, the soy-bean is of all vegetables the nearest to meat. It contains nearly two-fifths of its weight in legumin rich in nitrogen, and nearly one-sixth in fat. The soy-bean is to the inhabitants of Japan what their *garbanzos* (chick-peas) are to the Spanish, and their *feijao preto* (black beans) to the Brazilians. The author then describes the characteristics of the soy-bean, the work of Haberlandt with soy-beans in Austria, and the yields that he and his co-workers obtained.

“In Japan the varieties of soy-bean are distinguished—according to colour, as white (more properly yellowish), black, brownish red, green, and spotted; according to duration of growth [maturity] as early-ripening, middle-ripening, and late-ripening; according to form, as spherical, ellipsoidal, kidney-shaped, and compressed laterally; and according to use, as to those which serve primarily in making Shôyu (soy), Tôfu (bean-cheese), and Miso (a sort of sauce), and those eaten in any plain shape.”

Soy-bean varieties in Japan include: 1. “White (pea-yellow) soy-beans, Japanese Shiro-mame or Haku-daidzu. To this division belongs an early-ripening sort with very small seeds, called Goguwatsu-mame [Go-gatsu], or ‘five-months-kind,’ because it ripens in the fifth month of the old Japanese calendar, our July; also another small-seeded, early-ripening variety, the Wase-mame or Natsu-mame, that is, early and summer-bean. These two are also called Tôfu-mame, because they are used chiefly in making Tôfu. Another sort serves to produce Miso. It is called Nakate-mame, ‘middle-late bean,’ its time of maturity occurring half-way between that of the early and late kinds. Its seeds are round and somewhat larger. The late ripening varieties, Okute-mame (late-bean), Maru-mame (bullet-bean), and Teppô-mame (gun-bean), or Aki-mame (autumn-bean) have, as their names indicate, mostly bullet-shaped seeds, which become harder and larger than the early ones. The variety last named is used in making Shôyu, while Maru-mame is valuable as horse-feed.

2. Black soy-beans, Japanese Kuro-mame or Koku-daidzu. These are eaten boiled with sugar, as an entrée, or as a relish to rice. There is a middle-late sub-species, with round, elliptical seeds, Kuro-mame, in short, and another like it with big, bullet-shaped beans is called Kuro-teppô-mame. And again there is a late-ripening sort with flat, elliptical seeds under several names.

3. Brown soy-beans, Japanese Katsu-daizu (thirsty soy-bean) are much less grown than the white and black sub-species, and are used like the latter. They are distinguished as Aka-mame, red soy-beans, round, reddish-brown in colour, in different varieties, and Cha-mame, tea beans, three light-brown sorts of small extent and significance.

4. Greenish or bluish green soy-beans, Japanese Ao-mame or Sei-daizu, are eaten mostly boiled and with sugar, like the black and brown-red varieties. And, with the brownish sorts, they are much less widely grown than the

black and yellowish. The Japanese distinguish the following sub-species of Aō-mame [sic, Ao-mame]:—(a) Sei-hito,—epidermis green, inside a whitish yellow. (b) Nikuri-sei,—greenish throughout. Both sub-varieties run from roundish-ellipsoidal to a bullet roundness, are of medium size, and remind one of green peas. (c) Kage-mame, with pale green, round beans. 5. Speckled soy-beans, Japanese Fuiiri-mame or Han-daidzu. This group is not important. Its cultivation is confined to a small area, in a few provinces. Its sub-varieties are known as:—(a) Kuro-kura-kake-mame, with a black spot on the saddle (eye), otherwise greenish; flat and with the outline of an egg. (b) Aka-kura-kake-mame, with a brown spot on the saddle (eye), otherwise yellowish-green, flat and drawn out long. (c) Fuiiri-mame or Udzura-mame, speckled or spotted soy-bean, yellowish-green with many dark flecks. A rare variety, grown only in a few places, especially in Harima.

“Early-ripening soy-beans are sown as early as April in Southern Japan, in Central Japan during May. Those that ripen in autumn need much more warmth, and are sown, as a rule, one month later... Late-ripening Daidzu is also a favourite for planting along the edge of fields and on the new-built dykes of rice-fields.”

Returning to the work of Haberlandt: “At the end of his above-mentioned treatise, Haberlandt summed up in five noteworthy propositions, the results of his experiments with the soy-bean and of its chemical analysis. His conclusions are as follows:

“(a) The acclimatization of the early-ripening sorts, particularly those with yellow and reddish brown seeds, appeared to have fully succeeded in Central Europe.

“(b) The seeds obtained were larger, heavier, and handsomer than those from Eastern Asia, the chemical composition, however, remaining unchanged.

“(c) The soy-plant resists light spring frosts better than our young beans, and endures greater dryness in summer than most leguminous plants, though otherwise much like other kinds of beans.

“(d) It is distinguished by heavy crops, besides furnishing, in its stems and leaves, either green or dried, a nourishing feed, of which cattle are very fond.

“(e) In their high percentage of protein and fat, they far excel all other pulse in nutritive quality; and when properly prepared are second to none in flavour.

“After such favourable judgments, it might have been expected that the soy-bean, at least in the warmer regions of the Austro-Hungarian monarchy, would soon become popular and generally cultivated. The result, however, was quite otherwise. The hopes which he had aroused in behalf of this plant seem to have disappeared with Haberlandt, who died in 1878.

3. Azuki beans (many varieties are named and described).

Two tables (p. 73-74) show the following: (1) Analysis

of 10 different numbered samples of soybeans, empty pods, and straw and leaves. Eight are from Haberlandt’s book *Die Sojabohne* [The Soybean] (1878), two are from Caplan, and one each from Mach, Senff, Levallois, and Kinch. (2) Comparative composition of 9 different legumes, including soybeans, azuki beans, common peas, broad beans / faba beans, lentils, yellow lupins, and peanuts. The soybean has by far the most crude protein, is second in fat (after peanuts), and is average in (minerals).

Foods made from soybeans (p. 123-27): Shoyu (*Shōyū*, *die japanische Bohrensauc*e, auch *Soja*). Miso (made with rice koji [*Kōji* oder *fermentierender Reis*]). Tofu (*Tōfu*, *Bohnenkäse*, made with *Shio-no-nigari* (*Salzbitter*)) incl. dried-frozen tofu (*Kori-tōfu*, *gefrorener oder Eis-Tōfu*).

“Kori-tōfu, frozen or ice-Tōfu, is the spongy, horn-like substance that remains when common Tōfu is allowed to freeze and then thawed and dried in the sun, thus getting rid of most of its water. By Yuba [Yuba] is meant a third preparation, consisting of brownish, tough skins (*Häuten*), made by boiling the dissolved legumine of the Tōfu-process, with the addition of some wood-ashes, and then taking away in succession the skins that rise” (p. 126-27; see Rein 1889).

Note 1. This is the earliest German-language document seen (Oct. 2012) that contains the word Yuba.

The section on “Oil plants and their products” (p. 176-89) gives details on 13 plants and the oil obtained from them, including: 1. Rapeseed oil. 2. Mustard oil. 3. Camellia oil. 4. Cottonseed oil. 5. Peanut oil. 6. Sesame oil. 7. Perilla oil (*Perilla ocymoides*). 11. Hempseed oil. Soybean oil is not one of these. However a table (p. 185) gives the average composition of various Japanese oilseeds (Source: E. Wolff et al.; Ollech 1884): Rapeseed, peanuts, cottonseed, sesame (brown and white), hemp seeds, shelled beech-nuts, and soybeans.

Note 2. Volume 1 was published in 1881. The title of volume 2 is *Land-und Forstwirtschaft, Industrie und Handel*. Johann Justus Rein lived 1835-1918.

Note 3. This is the earliest German-language document seen (Feb. 2004) that uses the term “kori-tōfu,” or “gefrorener Tōfu,” or “Eis Tōfu” to refer to dried-frozen tofu.

Note 4. Also discusses: Ame, midzu-ame, and barley malt syrup (p. 121-22). Fu, or baked wheat gluten cakes. Hemp, hempseed, and hempseed oil (p. 88, 177, 184-85). Kudzu (p. 75, 199, 217). Peanuts and peanut oil (p. 176-81, 185). Sea-weeds—especially marine algae (p. 93-96). Sesame seeds and oil (p. 88, 176-78, 181-82, 185). Address: Prof. of Geography, Univ. of Bonn, Germany.

44. Tawara, R. 1887. *Nihon shoku no chōsa* (Zen kōno tsuzuki). *Shoku sen chōsa* [Investigation of Japanese foods. Part II]. *Tokyo Kagaku Kaishi* (*J. of the Tokyo Chemical Society*) 8:53-76, 77-101. [Jap]

• **Summary:** Discusses miso, natto, tofu, and yuba.

45. Hepburn, James C. 1887. A Japanese-English and English-Japanese dictionary. Abridged by the author. Second edition. Revised and enlarged. Tokyo: Z.P. Maruya & Co., Limited. Yokohama: Kelly & Walsh, Limited. London: Truebner & Co. vi + 330 + 962 p. 16 cm.

• **Summary:** Soy-related definitions include: Dengaku: A kind of food made of baked *tôfu*.

Go: [Soy] Beans mashed into paste for making *tôfu*; also used by dyers to limit colors. Mame no go: [Soy] bean paste.

Go-koku [Gokoku]: The five cereals—wheat, rice, millet, beans, and sorghum.

Hitashi-mono [Hitashimono]: Beans or vegetables boiled or steeped in *shôyu* [shoyu].

Irimame: Parched peas [sic, parched soybeans = soynuts].

Kirazu: The refuse of beans left in making *tôfu*.

Mamemaki: The ceremony of scattering parched [soy] beans about to drive out evil spirits on the last evening of the old [lunar] year.

Toshi-koshi [Toshikoshi]: The crossing from the old to the new year; the ceremonies observed on the last day of the year,... when parched [soy] beans are scattered after sundown to drive off noxious influences and evil spirits. The parched beans used this evening, if kept and eaten when the first thunder of the new year is heard, are supposed to protect against lightning.

Tsui-na (*oni yarai*): The ceremony of driving evil spirits out of the house by scattering parched beans about on the last evening of the old year.

Yô-kan [yokan]: A kind of confectionery made of sugar and [azuki] beans.

Yuba: A kind of food made of beans.

James Curtis Hepburn lived 1815-1911. Address: M.D., LL.D., Tokyo, Japan.

46. Rein, J.J. 1889. Tofu, kori-tôfu, and yuba (Document part). In: J.J. Rein. 1889. The Industries of Japan. Together with an Account of its Agriculture, Forestry, Arts, and Commerce. London: Hodder and Stoughton. xii + 570 p. See p. 107-08. [3 ref. Eng]

• **Summary:** “8. Tôfu, called in English bean curd, in German and French, less appropriately, *Bohnenkaese* and *fromage de pois*, is a valuable article of food made in Japan and China from yellow Soja-beans. It consists of fresh coagulated legumine [legumin], so that the English term suits it better than the German. Its preparation is simple.

“The yellow Soja-beans are put to soak, in cold water for from twelve to twenty-four hours, or a shorter time in warm, and then ground between the stones of a hand-mill, water being added to assist maceration. It becomes thus a thin mass, in which the quantity of water exceeds that of the beans about ten times. This is next filtered or pressed through a fine sieve, and the remnant put through the mill a second

time. Ten volumes of this filtered stuff are now diluted with three volumes of hot water, and heated to boiling-point. This is done in a kettle, which is only about half filled. When cool again, the mass is filtered through a woollen sack, and the process ends with pressing it under the lever.

“As in our soups from leguminous plants, the legumine is now found dissolved in the filtrate. To coagulate and separate it, there is added Shio-no-nigari (salt-bitter), i.e. brine from sea-salt, consisting principally of chloride of magnesium. Care is taken to have the precipitation take place slowly and quietly. (In China, according to St. Julien, burnt gypsum is also added.) When the liquor has cleared it is dipped out carefully, while the stuff precipitated is placed in four-cornered wooden forms with punctured, movable walls, which are lined with cloth. This is folded together over the Tôfu, a board is laid on top, and the Tôfu pressed out with a moderate weight of stones. Finally, the soft greyish mass is cut into tablets with broad latten [resembling brass] knives, and put away under water. In summer this suffices only for a short time. To be kept longer, it is put up in Shôyu, or pickled, etc.

“Kori-tôfu, frozen or ice-Tôfu, is the spongy, horn-like substance that remains when common Tôfu is allowed to freeze and then thawed and dried in the sun, thus getting rid of most of its water. By Yuba is meant a third preparation, consisting of brownish, tough skins, made by boiling the dissolved legumine of the Tôfu-process, with the addition of some wood-ashes, and then taking away in succession the scums that rise.”

Note 1: This is the earliest English-language document seen (Feb. 2004) that uses the term “frozen Tôfu” or “ice-Tôfu” to refer to dried-frozen tofu.

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the word “scums” to refer to yuba. Address: Prof. of Geography, Univ. of Bonn.

47. Sagot, Paul Antoine; Raoul, Edouard François Armand. 1893. Manuel pratique des cultures tropicales et des plantations des pays chauds [Practical manual for tropical crops]. Paris: Augustin Challamel. xxxii + 734 p. See p. 151-55. [Fre]

• **Summary:** In the chapter titled *Légumes et Culture Potagère*, there is a section on soybeans and soyfoods written by Edouard Raoul titled “Soja hispida Moench, Pois Soja, Pois oléagineux de Chine. Daïzou des Japonais.” It discusses the widespread culture of soybeans in southern Asia, China, and Japan. “The seed is very rich in oil and in casein soluble in water. Its consistency, especially before maturation, is very tender and fine. Unfortunately it does not have much taste of its own. The pod is very small and contains only 2-3 seeds. It is not easily opened. I prefer soybean seeds having a color that is clear fawn-colored or tawny (*fauve*) or greenish, to those which are black.”

“The plant must be sown from very fresh seeds. The

germination (in Europe) is often very unequal, and many of the seeds don't develop... Some seeds sent by me to French Guiana (*la Guyane*) have been cultivated by Mr. Bar au Maroni, and have borne fruit, but I don't have precise details on their vegetation or ease of utilization."

Brief descriptions are then given of miso, shoyu, tofou (tofu), *kouri-tofou* [dried-frozen tofu], "which is nothing but tofu dried using heat" [sic], and *uba* (yuba, "a product very rich in nitrogenous materials {proteins} and fats"), followed by a list of the names of the best-known Japanese soybean varieties, and a discussion of the difference between *Glycine hispida* Moench (*Kuro mame* [black soybeans], *no mame*, *kuzu*, *yama-daizou* [wild soybeans]), and *Glycine soja* Siebold et Zuccar. (*kiu mame* and *tsourou-mame*). Typical analyses of the stems and leaves, seeds, and entire plants are given based on research conducted by M. Joulie. A comparison of the nutritional value of soya and wheat is given based on the research of Wechler in Austria and Messrs. Fremy, Muentz, and Pellet in France. Dr. Menudier uses soy flour in diabetic diets.

Also discusses: Winged beans (p. 149-50; *Psophocarpus tetragonolobus* Dec., *Dolichos tetragonolobus* L., *Pois carré*). Peanuts (p. 150-51; *Arachide*, *Arachis hypogaea*). Bambarra groundnuts (p. 151; *Voandzou*, *Voandzeia subterranea* Dup. Th.).

Note 1. This is the earliest document seen (May 2009) concerning soybeans in French Guiana, or the cultivation of soybeans in French Guiana. This document contains the earliest date seen for soybeans in French Guiana, or the cultivation of soybeans in French Guiana (1893). The source of these soybeans was Prof. E. Raoul, who was apparently in France.

Note 2. This is the earliest French-language document seen (Feb. 2004) that mentions dried-frozen tofu, which it calls "kouri-tofou." Note 3. Sagot lived 1821-1888.

Note 4: This is the earliest document seen (Nov. 2003) concerning general information on soybean production in the tropics.

Note 5. Notice that "kuzu" is given as a name for the wild soybean in Japan. Address: 1. Docteur en Médecine, Ancien Chirurgien de la Marine, Ancien Professeur d'Histoire Naturelle à l'École Normale Spéciale de Cluny; 2. Pharmacien en Chef du Corps de Santé des Colonies. Professeur du Cours de Productions et Cultures Tropicales à l'École Coloniale.

48. Inouye, M. 1895. The preparation and chemical composition of tofu. *Bulletin of the College of Agriculture, Tokyo Imperial University* 2(4):209-15. Aug. [6 ref. Eng] • **Summary:** One of the best early articles on tofu in Japan. Inouye tried to make a product resembling Swiss cheese with tofu, with moderate success.

"The efforts to prepare an easily digestible food from soya beans led to the preparation of *miso* and *natto*, two

kinds of vegetable cheese, which were investigated some time ago in the laboratory of this college. (Footnote: On the preparation of *miso*, by O. Kellner, this Bulletin, Vol. 1, No. 6. On *natto*, by Yabe; Bulletin Vol. 2, No. 2).

"But the most interesting preparation is *tofu*, which consists principally of the protein-matter of the soya bean and which, according to the investigation of Prof. Osawa in Tôkyô, is as easily digestible as beef. This preparation is freshly made every day and sold in the form of tablets [cakes] about 10 c.m. broad, 2 c.m. thick, and 25 c.m. long [4 by 10 by 0.8 inches thick], is of snow-white appearance and of the consistency and taste of freshly precipitated casein of milk, but as there is no trace of bacterial action connected with its preparation, the name vegetable cheese is certainly not justified." A table (p. 211) shows the composition of tofu as determined by Kellner.

"*Tofu* is also sold in another form called *kori-dofu* [dried-frozen tofu]. It is prepared by exposing the fresh *tofu* tablets to the action of frost, under which they shrink considerably, lose water, and become more compact. While fresh *tofu* contains, on an average, 89.02% of water, *kori-tofu* contains only 15.32% in the air dry condition. The analysis of *kori-dofu* gave me the following results: Water 15.32%. Albuminoids 41.42%. Fat and lecithin 23.65%. Non-nitrogenous extract 15.05%. Cellulose 1.48%. Ash 3.08%."

The author then describes the tofu manufacturing process, noting that it "is manufactured only on a small scale, by people who sell it in their own shops." "The beans are first soaked for about twelve hours in water and then crushed between two mill-stones until a uniform pulpy mass is obtained. This is then boiled with about three times its quantity of water for about one hour, whereupon it is filtered through cloth. This liquid is white and opaque, exactly like cow's milk; while the smell and taste remind one of fresh malt." "I also analyzed the fresh milky liquid with the following results" for "Soya bean milk" and cow's milk, respectively (p. 212): Water 92.53% / 86.06%. Albuminoids 3.02% / 4.00%. Fat 2.13% / 3.05% Fibre 0.03% /-. Ash 0.41% / 0.70%. Non-nitrogenous extract, including carbohydrates 1.88% /-. Milk sugar-/ 5.00%.

"The fat contained in this liquid as well as in the *tofu*-tablets was found to consist partly of lecithin. *Tofu* dried at 100° yielded 26.65% fat and 4.83 gr. of this fat yielded, after igniting with carbonate of soda and nitrate of potash in the usual way, 0.280 grm. of magnesium pyrophosphate, which, when multiplied by the lecithin-factor, 7.2703, corresponds to 2.035 grm. lecithin, amounting to 11.2% of dried *tofu*, leaving for the genuine fat 15.4% (Footnote: A portion of this lecithin was probably present in the soya bean as lecithalbumin; comp. Leo Liebermann, J.B. f. Thierchemie, 1893, p. 32, and E. Schulze, *Chemiker Zeitung*, 1894, No. 43); more of the latter, therefore, is left in the refuse than of the former."

Note 1. This is the earliest English-language document

seen (March 2001) that contains the word “lecithin” or “lecithalbumin” in connection with soy—in this case tofu.

“In the manufacture of *tofu*-tablets from the freshly prepared milky liquid, about 2% of concentrated brine [natural nigari] as it is obtained as mother liquor from the preparation of sea salt, is added with constant stirring, whereupon a flocculent precipitate is soon formed which is separated by means of a cloth filter, slowly pressed, and then cut into tabular shape. I have tried to arrive at a satisfactory explanation of the nature of *tofu*, and have found that the salt-brine does not act by its chloride of sodium, but by the calcium and magnesium salts which are in it; for we can at once obtain precipitate from the milky liquid if we add a little calcium nitrate or magnesium sulphate, while we can not obtain any separation or precipitation by adding even considerable quantities of sodium chloride or sodium sulphate.”

“I have analysed a sample of the salt brine used for *tofu* making and found it to contain, besides chloride of sodium, 27.9% of chloride of magnesium and 7.0% of chloride of calcium.”

Footnote 4 (p. 213): “In order to see whether a product similar to Swiss Cheese could be obtained from the crude soya casein or *tofu*, I infected 50 gm. of fresh *tofu* with a small dose of pulverised Swiss cheese, and added ten per cent of common salt to the mixture, pressed it in cloth, and allowed it to stand in a moist beaker glass for several months. The product resembled, only to a limited extent, the cheese from milk, but further experiments with the addition of small quantities of milk sugar are intended.”

Note 2. This is the earliest English-language document seen (Oct. 2003) that contains the term “soya bean milk.”

Note 3. This is the earliest English-language document seen (Oct. 2003) that contains the word “milky” in connection with soymilk, or that uses the term “milky liquid” to refer to soymilk. It is the second earliest English-language document seen (Oct. 2003) that mentions soymilk, and the earliest that mentions it in connection with Japan. However there is no suggestion that Japanese consume soymilk as a beverage.

Note 4. This is the earliest English-language document seen (March 2009) that uses the term “vegetable cheese” to refer to miso.

Note 5. This is the earliest English-language document seen (Feb. 2004) that uses the term *kori-tofu* or the term *kori-dofu* to refer to dried-frozen tofu. Address: Nôgaku-shi [Prof. of Agriculture], Japan.

49. Agricultural Society of Japan (*Dai Nihon Nokai*). 1895. Useful plants of Japan: Described and illustrated. Vol. 1. Tokyo: Agricultural Society of Japan. 233 p. See p. 5-6. 22 cm. [Eng]

• **Summary:** Discusses five varieties of *Glycine hispida* (p. 5-6) including: 21. Black soy-bean, Jap. *Kuro-mame*.

“The beans have black skin. They are eaten either boiled or parched and also used to make *miso* (a kind of sauce with solid consistency), cakes, and *natto* (a cooked beans eaten as relish to rice).”

Note 1. The writer fails to mention that both miso and natto are fermented foods.

Note 2. This is the earliest English-language document seen (Jan. 2012) stating that natto is eaten with rice, or as a relish to rice.

22. White soy bean, Jap. *Shiro-mame*. Similar to No. 21 but the beans have yellowish-white skins. “Numerous varieties as to size, form, or duration of growth occur, and all are eaten either boiled or parched. Many important services are due to this bean. They are used to make malt [koji], *miso* (a kind of sauce), *shôyû* (bean sauce), and *yuba* (a kind of food). The *mamenoko* (bean flour) [probably roasted soy flour or *kinako*] is made of the beans and is eaten with *dango*, etc. It yields a dye called *Mame-no-go*. Oil is also pressed out from these beans. They are used in many other different ways.”

Note 3. This is the earliest English-language document seen (Dec. 2005) that uses the word *mamenoko* to refer to roasted soy flour.

23. Green bean, Jap. *Ao-mame*. Similar to No. 21 but with larger seeds of greenish color. “One variety with green colour both of the skin and albumen called *Konrinzai* occurs, and is used to make *Aomame-no-ko* (green bean flour).

24. Jap. *Goishi-mame*. The seed of this variety is flat and black. Eaten boiled.

25. *Gankui-mame*. “Closely allied to the preceding. The beans are larger and thinner in the middle, and eaten principally boiled.”

Also discusses: Job’s tears (*Coix lachryma*, Jap. *Tômugi*, *Hatomugi*, p. 5. The grain is pounded in a mortar, cleaned, and “consumed as meal and *mochi*. An infusion of the parched and ground grains is used instead of tea, and is called *Kosen*.” Five varieties of adzuki beans (*Phaseolus radiatus*, p. 7-8).

Pea-nut (*Arachis hypogaea*, Jap. *Tôjin-mame*, *Nankin-mame*, p. 9. “They are eaten parched or used in confectionery, or to extract oil. A variety with larger nuts about 3 times bigger was introduced from America in 1873”).

Kudzu (*Pueraria thunbergiana*, Jap. *Kudsu*, *Makudsu*, p. 69-70, 92. “The largest roots are about 3-4 ft. [long] and about the thickness of a man’s arm. In winter they are taken, and an excellent starch is prepared from them. It is used for food or paste. The vine is used to make baskets, and its fibre is taken for cloth. The leaves are used to feed cattle”).

Sesame (*Sesamum indicum*, Jap. *Goma*, p. 84. “There are three varieties, black, white, and brown colored. The latter variety is the best to take oil. The oil is principally used for dressing food. The grilled seeds are used to add to cakes, salads, etc.”). Address: Tameike 1, Akasaka, Japan.

50. Langworthy, C.F. 1897. Soy beans as food for man. *Farmers' Bulletin (USDA)* No. 58. p. 20-23. July 7. Revised (very slightly) in 1899. [1 ref]

• **Summary:** Describes and gives the nutritional composition of various Japanese soyfoods, including natto, miso (white, red, or Swiss), tofu, frozen tofu, yuba, shoyu. Many of his descriptions of soyfoods are based on Trimble (1896).

“Tofu, or bean cheese, is prepared as follows: The beans are soaked in water for about twelve hours, and crushed between millstones until of a uniform consistency. The ground material is then boiled with about three times its bulk of water for about an hour, and filtered through cloth. The filtrate is white and opaque, having somewhat the appearance of milk. It has, however, the taste and smell of malt. This milky liquid, to some extent, resembles cow's milk in composition, as is shown by the following table:” The table, titled “Comparison of the composition of soy-bean milk and cows' milk,” shows that the two liquids (soy / cow) have the following composition: Water 92.53% / 86.08%, albuminoids 3.02% / 4.00%, fat 2.13% / 3.05%, etc.

“The protein in soy-bean milk is precipitated by adding the mother liquor obtained in the manufacture of salt from sea water, which contains considerable magnesium chloride. The precipitate is filtered off and formed into cakes with the hands. It is eaten in the fresh state or frozen. In the latter case it loses part of its water.”

“Though these soy-bean products are prepared chiefly in Japan and other eastern countries, their manufacture has been attempted to some extent in Switzerland and elsewhere...”

“Bean sausages in considerable variety are prepared in Germany, and formed part of the ration of the German soldier in the Franco-Prussian war. So far as can be learned, these are always made from ordinary varieties of beans and not from soy beans...”

“Under the name of coffee beans, soy beans are eaten to some extent in Switzerland as a vegetable, and dried and roasted are also used as a coffee substitute. Their use for this latter purpose is not unknown in America. The attempt has recently been made by certain dealers to place the soy bean on the market as a new substitute for coffee and to sell it under other names at an exorbitant price.

“Bulletin No. 98 of the North Carolina Experiment Station recommends soy beans as a palatable vegetable when prepared as follows: Soak the beans until the skins come off and stir in water until the skins rise to the surface and then remove them. Boil the beans with bacon until soft, season with pepper, salt, and butter, and serve hot. If the beans are green the preliminary soaking may be omitted. No other references to the use of soy beans for human food in the United States have been found.”

Note 1. This is the earliest English-language document seen (Oct. 2003) that contains the term “soy-bean milk.” It is also the earliest U.S. government document or USDA

document seen (May 2006) that uses the term “soy-bean milk” (or any other term containing the word “milk”) to refer to soymilk.

Note 2. This is the earliest document seen (Jan. 2005) concerning the work of the USDA with nutrition (or home economics) and soybeans. Address: Office of Experiment Stations, USDA, Washington, DC.

51. Trimble, Henry. 1897. The soy bean. *American J. of Pharmacy* 69:584-93. Nov. [11 ref]

• **Summary:** Much of this material is derived from Williams and Langworthy (1897). Illustrations (p. 585, from Williams, p. 5) show: (a) flowering branch of a soy bean plant (reduced 2/3), (b) one of the flowers (enlarged), (c) pods of a soy bean plant (reduced 2/3).

One table (p. 588) shows the chemical composition of various kinds of forage made from the soy bean (fresh or air-dry substance, or water-free substance): Fodder (early bloom to early seed), soy-bean hay, straw, straw (hulls and vines after threshing), soy-bean seed, soy-bean meal (18.9% / 21.0% fat), soy-bean ensilage, corn and soy-bean ensilage, millet and soy bean ensilage.

Another table (p. 591) shows the composition of the following “Soy-bean food products”: Fresh tofu, frozen tofu, natto, yuba, white miso, red miso, Swiss miso, and two types of shoyu. For each is given the percentage of water, protein, fat, nitrogen-free extract, fiber, and ash [minerals].

Note: This is the earliest English-language document seen (Sept. 2011) that contains the term “soy-bean food” or “soy-bean food products.” It is also the earliest document seen (Sept. 2011) concerning the etymology of the word “soyfoods.” Address: USA.

52. *New York Times*. 1898. To stop customs frauds: Unusual instructions for United States consuls at foreign shipping ports. Appraisers to have facts. April 28. p. 4.

• **Summary:** The U.S. Treasury Department and State Department are working “to stop undervaluations of imports at the Port of New York.”

“Consuls at Hongkong and other Chinese ports are directed to forward at frequent intervals price lists or quotations on the following enumerated articles: Birds' nests, lichees preserved in tin, bamboo shoot, shrimp sauce, oyster sauce, plum sauce, bean sauce, soy sauce, preserved ginger, beansticks [dried yuba sticks], and dried mushrooms.”

53. Brinkley, Frank; Nanjō, F.; Iwasaki, Y.; Mitsukuri, K.; Matsumura, J. 1898. An unabridged Japanese-English dictionary: With copious illustrations. Tokyo: Sansendo. xxvi + 1687 p. Illust. [Jap; Eng]

• **Summary:** For each entry, the romanized word comes first, followed by the word written in hiragana and then in kanji (Chinese characters). Note: The authors often use the word “bean” when they should use the word “soybean.” Soy

related:

“Aburage: Bean-curd fried in oil.

“Amazake: Sweet *sake*; a kind of drink made of fermented rice. Syn. [Synonym]: Hitoyozake, Kozake.

“Ame: A honey-like jelly made of flour of various grains; starch-sugar.

“Ammochi: Mochi stuffed or covered with boiled and crushed pea-beans [sic, azuki beans] mixed with sugar.

“Azuki [bot.] Mungo.

“Azuki meshi: Rice and red pea beans mixed and boiled for food.

Azuki mochi: Same as Am-mochi.

“Dengaku: (2) (Coll.) *Tôfu* baked and covered with sweetened miso. *Dengaku wo yaku*: to bake or prepare *dengaku*.

“Dengaku-dôfu: See above.

“Daizu (Bot.) Soja bean.

“Edamame: (1) (lit.) Branch bean. (2) (coll.) [Soy] Beans boiled in pods on the stalks.

“Gobuzuke: Dried radish chopped into pieces of about 5 *bu* (of half an inch) in length and cooked with soy [sauce] and sugar.

“Gusokuni: Lobster chopped into transverse pieces and cooked with sugar and soy.

“Hachihaidôfu: *Tôfu* chopped into small pieces and boiled in a soup composed of four cups full of water, two of soy, and two of sake.

“Hitasu-Shôyu ni hitasu: To steep in soy.

“Hiyayakko: *tôfu* served cold.

“Ikanago-shôyu: Soy prepared in Sanuki [on Shikoku island], from a kind of fish called *Ikanago*.

Irimame: Parched peas or [soy] beans. *Irimame ni hana ga saku* (coll. Prov.) (lit.) blossoms on parched peas; something regarded as impossible.

“Iritori: Fowls boiled with a mixture of sugar, soy and *mirin* until the sauce is fully absorbed.

“Iritsuke: Any fish roasted or boiled in a pan until the sauce or soy is fully absorbed.

“Kabayaki: (1) A way of roasting fish. (2) Eels cut open on the dorsal line, covered with soy mixed with sugar, and roasted. (3) Unagi no kabayaki: Roasted eels.

“Kenchin: (Modern Chin.) (1) Black beans malted and fried, and eaten with soy or table salt. (2) A soup containing various vegetables and *tôfu* mixed together and fried.

“Kigaracha-meshi: Rice boiled with water and a small quantity of *sake* or soy (so called from its yellowish color).

“Kijiyaki: The flesh of bonito or tunny-fish covered with soy and sugar, and baked.

“Kinako: [Soy] Bean flour (of yellowish or greenish color).

“Kinome-dengaku: *Tôfu* or the fruit of the egg plant covered with a pasty mixture of *miso*, sugar, and the buds or leaves of the *sanshō*, and baked.

“Kiuri-momi: Cucumber chopped fine and seasoned

with salt, vinegar and soy.

“Kôji: Yeast, barm [sic]. *Kôji wo nekasu*: To make yeast [sic, kôji].

“Kokushô: A soup prepared with *miso* and the flesh of *koi* [carp] (*cyprinus haematoperus*).

“Kombumaki: Roasted or cooked fish wrapped in a piece of *kombu*, tied and boiled with sugar and soy.

“Kuromame: (Bot.) Black soy bean.

“Kyarabuki: The stems of the *fuki* boiled with soy.

“Mamemaki: A ceremony of scattering parched peas [sic, soybeans] about in an occupied house to drive out evils spirits, celebrated on the last night of December, or the early part of January (o.s.) [old style] crying aloud the while *fuku wa uchi* (fortune inside), *oni wa soto* (devils outside). Syn. Oniyarai, Setsubun.

“Mame-no-ko: [Soy] Bean flour used for covering or sprinkling over *mochi*, *dango*. Syn. Kinako.

“Miso: A kind of sauce made of wheat, [soy] bean, and salt. *Miso wo tsukeru*: (a) (lit.) to spoil (as one's coat) with miso. (b) (fig. coll.) to disgrace one's self; *Tonda miso wo tsuketa*: (coll.) have met with a shocking failure.

“Misokoshi: A miso strainer.

“Misomame: (Bot.) Soja bean, Glycine.

“Misoshiru: A kind of soup made with miso.

“Moromi: The grounds or lees left in making soy or *sake* and used as food.

“Moromi-sake: A kind of sake with rice grounds not separated from the liquid. Syn. Doburoku, Nigorizake.

“Murasaki: Another name for the sardine, or for soy. Namaage or Nama-age: Not listed.

“Nattô: A kind of food made of boiled [soy] beans (usually sold in small packages made of rice straw).

“Nigari: The brine left by the deliquescence of salt.

“Nigashio: Same as Nigari.

“Oborodôfu: (1) A *tôfu* boiled down until it is almost dry and relished with soy and sugar. (2) A kind of *tôfu* [sic, unpressed tofu curds].

“Omame: (Bot.) Soy bean.

“Satsuma-iri: Food prepared by cooking a mixture of parched rice and finely chopped sweet potato, and relishing it with soy and sugar.

“Shitaji: Soy. See *Shôyu*.

“Shôyu: A kind of sauce made by pressing a fermented mixture of calcined barley meal, boiled [soy] beans, yeast, water, and salt; soy. Syn. Shitaji, tamari.

“Shôyu no moromi: Soy before it is pressed.

“Suiri: Cooked with vinegar. *Iwashi no suiri*: A sardine cooked with a mixture of vinegar and soy. Syn. Suni.

“Sukimi: Flesh of fish sliced thin, and eaten relished with soy and *wasabi* or horse-radish.

“Sukiyaki: Roasting sliced meat or flesh with soy, in a shallow pan. Note: This is the earliest document seen (April 2012) that contains the word “sukiyaki.”

“Sumiso: A kind of sauce made by rubbing together

miso and vinegar in a mortar [suribachi].

“Suribachi: An earthenware vessel used in rubbing *miso*; a mortar.

“Sushi: (1) Fish seasoned with vinegar. (2) A general name for food made of boiled rice and fish, eggs, vegetable, etc. seasoned with vinegar and soy. As an affix the form is changed to *zushi*. *Inari-zushi*: food made of fried *tôfu* stuffed with a kind of *chirashi-zushi*.

“Tamari: Soy before it is pressed [sic].

“Tekkamiso: A kind of food made by roasting *miso* mixed with parched beans, chopped burdock, and a little oil.

Temae: (1) One’s own side. *O temae miso wa shio ga karai*: (coll.) Self approbation is disgusting.

“Teriyaki: Flesh of fish baked with a kind of sauce composed of soy, *mirin*, and sugar.

“Tôfu: A kind of food made from bean curd hardened by mixing with a small quantity of the brine left after the deliquescence of salt [nigari]. In composition the form changes into dôfu. *Tôfu ni kasugae*: (Prov.) (lit.) an iron clamp to connect pieces of tofu; no effect. Yaki-dôfu: Baked [grilled] *tôfu*.

“Tsukuru: To pickle in sake, brine vinegar, etc. *Shôyu wo tsukete yaku*: To bake [grill] seasoned with soy. Syn. *Hitasu*, *uruosu*.

“Uchimame: The soy bean flattened with hammer and boiled in soup.

“Udondôfu: Tôfu cut into udon like pieces, and eaten boiled in a soup made of cups of soy, two of *sake* in four cups of water.

“Yuba: The skin of bean curd used as food. Syn. *Uba*.

“Yudôfu: Boiled *tôfu*.” Address: 1. Captain, R.A., Editor of the *Japan Mail*; 2. M.A., Bungakuhakushi; 3. Nôgakushi.

54. *Proceedings of the American Pharmaceutical Association*. 1898. Report on the progress of pharmacy. 46:582-1120. See p. 857-60.

• **Summary:** In the section titled “Materia medica,” under “Vegetable drugs,” we read: “*Soy Bean-Food Value, etc.*—Referring to his paper on the soja bean (see *Proceedings* 1896, 634), in which he gave a summary of the literature on this valuable food product, Prof. Henry Trimble reproduces in the abstract a recent paper entitled “The Soy Bean as a Forage Crop,” by Thomas A. Williams, with an appendix on “Soy Beans as Food for Man,” by C.F. Langworthy, published in *Farmer’s Bulletin*, No. 58, issued by the U.S. Department of Agriculture. While not adding anything new to the knowledge of the digestive ferment, which was prominently discussed in the summary above referred to, there is much valuable information that is of interest to the pharmacist.

Discusses *Glycine hispida*, soy bean, Prof. Haberlandt, yuba, shoyu, tofu, frozen tofu, natto, and miso.

See: Trimble, Henry. 1897. “The soy bean.” *American J. of Pharmacy* 69:584-93. Nov.

55. Tran, Nguyen Hanh. 1898. Fromage de pâte de haricots [Fermented tofu]. In: *Essais Agricoles et Industriels Faits en Cochinchine Depuis la Fondation de Cette Colonie Jusqu’en 1897*. 2 vols. Saigon, Vietnam: Imprimerie Commerciale Rey. See Vol. 2, p. 190-92. [Fre]

• **Summary:** At top of title page of this volume 2:

“Publications de la Société des Études Indo-Chinois de Saigon—No. 1.” In middle of title page of volume 2: “Extraits des Bulletins du Comité Agricole et Industriel (1865-1883) et de la Société des Études Indo-Chinois (1883-1896).”

With the haricot bean [*soybean*] (*dau-nanh* in Annamite) the indigenous people prepare a series of foods which are consumed abundantly in this country [Vietnam] and in China. It could be that with carefully-made preparations, Europeans could make use of it [the bean].

The soybean contains an abundance of a milk-like substance with which the followings cheese can be prepared.

1. Tofu (*Dau hu*)—A type of cheese that is eaten the day it is made. It has a consistency somewhat similar to that of Swiss cheese. It is widely used as an ingredient in other dishes, seasoned with either sugar or salt, or in cooked foods, because heat does not damage it.

2. Pressed tofu (*Dau-hu-cu.ng*; [*cu.ng* means “hard”])—Used in the same way as No. 1, it is always cut into pieces and cooked with other ingredients. Having a firmer consistency than No. 1, it can be kept for a day or so.

3. Yuba (*Dau-hu-ky*; [literally “bean curd skin”])—This cheese comes in dry sheets. It is cooked in other culinary preparations. It serves as a mild seasoning and as a wrapper like some Italian pastas.

Note 1. This is the earliest French-language document seen (Aug. 2010) that uses the word *Dau-hu-ky* (regardless of hyphenation or capitalization) to refer to yuba.

4. Fermented tofu (*Dau-hu-nhan*; [*nhan* means “bitter”])—This fermented and salted cheese will keep for a month or even a year. It is eaten with bread, with cooked rice, or even with meats.

5. Chao—Another fermented and salted tofu, but sold in an alcoholic brine, and diluted to make a soft paste. Used in much the same way as butter. It sometimes accompanies starchy foods (grains, bread, etc.) and sometimes it is added to meats or fish.

6. *Dau-hu-oa*—A creamy cheese which is eaten with sugar or water sweetened with sugar. Note 2. These are soymilk curds (*doufu-hua* in pinyin). Also called *Tao pho* (in Hanoi). *Dao-hu hoa* (in Hue). *Tau-hu* (Saigon).

The next section describes how to make each of the six different types of tofu and yuba.

1. Tofu—As with other cheese, each of these must be prepared with care. Start by crushing soybeans into pieces—3 or 4 pieces per bean at most, then soak in water for 18-20 hours. Stir from time to time so that the hulls rise to the surface, then decant then off. Grind the rest finely to obtain a

fluid puree. Bring to a boil. After 15 minutes, add sea salt to coagulate the liquid. The sea salt can be replaced by gypsum, but the result will not be the same.

2. Pressed tofu—Prepare like No. 1 but cook longer and press in a form with a very heavy weight for several hours until it is about 1 cm thick and of firm consistency so that it will last for several days.

3. Yuba—Lift off the thin films that form on the surface of hot soymilk with a fork. Let them dry in the sun. The films, which are either white or yellow, will last for a year, if care is taken to dry each film slowly and for a long time; otherwise they will turn red.

4. Salted, fermented tofu (Da-hu nhan)—Cut tofu in pieces a little larger than one's thumb and spread them on a plate covered by a banana leaf. According to the season, leave them here for 2-3 days or more, until each piece is entirely covered with mold. Wipe off the mold and layer them in a deep crock. Between each later add powdered salt. Hermetically seal the mouth of the crock / vase and expose it either to the rays of the sun or to a source of heat; continue this for 10-15 days, until the cheese is ready. It is an excellent condiment.

5.—Chao. The complex fermentation is described in detail.

6. Soymilk curds before they are pressed. Very light and delicate, with subtle sweetness.

56. Blasdale, Walter C. 1899. A description of some Chinese vegetable food materials and their nutritive and economic value. *USDA Office of Experiment Stations, Bulletin* No. 68. 112 p. See p. 32-36. [19 ref]

• **Summary:** “According to Prinsen-Geerligs [*Chemiker-Zeitung*, 20 (1896) 67-69], ‘tao hu,’ or bean cheese, is prepared from the seeds of the white variety of soy bean. These are allowed to soak for three hours in water, are then reduced to a thick paste, and the mass cooked. The cooked mass is strained through a coarse cloth. The filtrate consists of a milky-white liquid containing protein and fat. As soon as this becomes cool some material is added (for instance, crude salt containing magnesium chlorid [chloride]), which precipitates the proteid material, the fat being inclosed in the coagulated mass. The coagulated material is pressed and kneaded into small cakes. The cakes may be dipped for a few moments into a saline solution of curcuma. Variations in the process give rise to a number of varieties of bean cheese. This is essentially the method used by the Chinese of San Francisco in the preparation of the bean cheese used by them. It is sold either in the form of a freshly precipitated curd or in the form of small square cakes obtained by compressing the former material. It is usually cooked in peanut oil before being eaten and, in the author's opinion, is a palatable food. A partial analysis of one of the cakes gave 81.35 per cent, fat 5.19 per cent, and ash 0.80 per cent.

“The filtrate from the cooked soy beans resembles milk,

and, on heating, a skin [yuba], not unlike that formed on milk, rises to the surface of it.”

A large number of varieties of the soy bean are in cultivation in China and Japan, but only two were found in the Chinese markets in San Francisco, a yellow and a black variety. Aside from a difference in color, the two forms apparently do not differ materially from each other. The yellow variety is known as ‘wong tau,’ and is designated by the characters ‘yellow’ + ‘bean,’ while the black is known as ‘hak tau,’ and is designated by the characters ‘black’ + ‘bean.’

“Both varieties obtained from the Chinese market in San Francisco grew readily in Berkeley, attaining a height of about 3 feet, and in spite of a very dry season produced an abundant crop of seeds... The composition of the seeds of the two varieties is shown in Table 10 (p. 33), the average composition of American-grown soy beans being quoted also for purposes of comparison.” On a dry-weight basis, the original black soy beans contained, on average, 0.35% more protein (39.62% vs. 39.27%) and 0.72% less fat (18.77% vs. 19.49%) than the yellow soy beans. The soy beans grown in Berkeley (average of 8 analyses) contained 38.1% protein and 19.00% fat.

Photos show: (1) The upper portion of a plant of the black soy bean (p. 33).

(2) “Mature plant of yellow soy bean” (showing only the pods and stems, no leaves, p. 35). Address: Instructor in Chemistry, Univ. of California.

57. Kano, S.; Iishima, S. 1899. Honpo-san shizenbutsu oyobi shikohin 18 shu no kyûshû ni tsuite [Digestion experiments on 18 Japanese foods]. *Gun-i Gakko Gyofu Koku Nobu (Bulletin of the Army Medical College)* No. 3. p. 101-33. [Jap]

• **Summary:** These human digestion experiments with single food materials were conducted at the Army Medical College in Tokyo. They are summarized in English by Oshima (1905, p. 168-73). Most of the experiments used shoyu as a seasoning. Experiment #89 used *kingyo fu* (a gluten preparation) and raw red azuki (adzuki) beans. #92 used tofu. #93 use tofu cake or okara. #94 used yuba. #97 used kuzu starch (made from *Pueraria thunbergiana*). Address: Army Medical College, Tokyo.

58. Douglas, Carstairs. 1899. Chinese-English dictionary of the vernacular or spoken language of Amoy, with the principal variations of the Chang-chew and Chin-chew dialects. New edition. London: Presbyterian Church of England. xix + 612 p. 27 cm. [2 ref]

• **Summary:** The Preface begins: “The vernacular or spoken language of Amoy, which this dictionary attempts to make more accessible than formerly, has been also termed by some ‘The Amoy Dialect’ or ‘The Amoy Colloquial;’ and it particularly coincides with the so-called ‘Hok-kien Dialect,’

illustrated by the Rev. Medhurst in his quarto Dictionary under that title.”

On page 58, under the character for *chiang-chiu* a sort of sauce or condiment. *tau chiu* sauce made from beans and flour. *chiu-chheng* the thinner part of *tau chiu*. *koan-kiu-chiu* this sauce seasoned with cayenne pepper. *chiu-liau* various sorts of vegetables preserved in *tau chiu*. *chiu-koe* pumpkins so preserved. *chiu-kiu* ginger so preserved. *chiu-mia-chia* wheaten dough balls in this sauce.

On page 156, under the character for *hu-tau-hu* bean curd shaped into squares (from the pulpy “tau-hoe”), but not yet pressed. See *tau*.

On page 176, under the character for *iu* meaning oil or fat. On the last line of the right column—*tau-iu* soy [sauce]. *e-tau-iu* dark-colored soy. *seng-iu* the common oil from ground-nuts. *moa-iu* oil from hemp-seed.

On page 423, under the character for *shi-si* salted vegetables and fruits. *tau-si* pickled and salted beans [soybeans]. *tau-si-pe* black beans [soybeans] boiled, dried, and kept till mouldy, to be made into soy [sauce]. *tau-si-phoh* beans from which soy has been made, broken down small. *mi-si* (Cantonese) = *tau-chiu* (Amoy), sort of salted sauce.

On page 480, under the character for *tau-tau* peas or beans; pulse. *tau-khe* bean cake from North China, used as manure. *tau-iu* soy (see *iu*). *tau-chiu* a thick salt sauce made from pulse. *tau-si* salted beans [fermented black soybeans]. *tau-hoe* soft bean curd not yet pressed or shaped. *tau-chiu* same. *tau-hu* bean curd shaped but not yet pressed. *tau-hu-phe* same, but made into thin sheets for wrapping around eatables. *teh tau-hu* to shape the *tau-hoe* into pieces of *tau-hu*. *tau-koa* bean-curd that has been pressed in a cloth. *tau-ju* same cut into smaller squares and salted. *tau-kiam* (Cantonese) same. *tau-che* refuse from manufacture of bean-curd [okara]. *tau-thau* same. *the-tau* = *lok-kha-seng*, the Arachis, ground-nut, or pea-nut, from which oil is made. *tho-tau* same.

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “pickled and salted beans” to refer to fermented black soybeans.

Note 2. The first edition of this book was published in 1873. In 1970 the Ku-T’ing Book Store in Taipei published a photoreprint of the 1899 London edition; it was bound with a Supplement photoreprinted from the 1923 Shanghai ed. (612 p., 27 cm). Carstairs Douglas lived 1830-1877. Address: Rev., M.A., LL.D. Glasgow, Missionary of the Presbyterian Church in England.

59. Langworthy, C.F. 1899. Appendix: Soy beans as food for man. *Farmers’ Bulletin (USDA)* No. 58 (Revised ed.). p. 20-23. [1 ref]

• **Summary:** This part of Bulletin 58 is identical to the original July 1897 edition. Address: Ph.D., Office of Experiment Stations, USDA, Washington, DC.

60. Langworthy, C.F. 1900. Vegetable cheese. *Sanitary Home (Fargo, North Dakota)* 2(3):55-57. May.

• **Summary:** “It is commonly believed that the Japanese, Chinese, and other oriental peoples live almost exclusively on rice, eating little or no meat... In the course of centuries the Japanese and Chinese have evolved the art of preparing substances resembling dairy products from vegetable sources. It is well known that beans, peas, and other legumes contain large amounts of protein... The soy bean, which is perhaps the principal legume grown in Japan and China, is less suited for food in its natural state.”

“Though the soy bean is not relished when cooked in the ordinary way, the Chinese and Japanese prepare very satisfactory foods from it in ways which are unknown to western cooks. Bean cheese or bean curd, called by the Japanese *tofu* and by the Chinese *tao hu*, is one of the most important of these products and is prepared as follows: The soy beans are soaked in water for about 12 hours and crushed between mill stones until of a uniform consistency. The ground material is then boiled with about three times its bulk of water for an hour or more and filtered through cloth. The filtrate is white in appearance and has somewhat the appearance of milk. It has the taste and smell of malt. Analysis shows that it resembles cow’s milk in composition. When heated a film forms on the surface which in appearance suggests cream. This is dried and eaten under the name of *yuba*. As soon as the soy bean milk becomes cool, some material is added; for instance, crude sea salt, containing magnesium chlorid [chloride], which precipitates the proteid material, the fat being inclosed in the coagulated mass. The coagulated material is pressed and kneaded into small cakes or cheeses. These are sometimes dipped in saline solutions of curcuma to color them. The bean cheese cakes are sometimes eaten fresh or may be cooked in different ways. Often when practicable they are frozen. This removes a considerable part of the water present. As shown by analysis, the fresh bean cheese contains about 5 per cent of protein and 3 of fat. Ordinary cheese made of milk contains about 28 per cent protein and 36 per cent fat.

“Miso resembles *tofu* to some extent. It is prepared from cooked soy beans, which are rubbed to a thick paste and fermented with rice wine ferment. *Shoyu* is a thick sauce prepared from a mixture of cooked pulverized soy beans, roasted and pulverized wheat, wheat flour, salt, and water. The mass is fermented with rice wine ferment in casks for from one to five years being frequently stirred. The resulting product is a moderately thick, brown liquid, in odor and taste, not unlike a good quality of meat extract, though perhaps a trifle more pungent. Throughout the East it is eaten in large quantities with rice and other foods and is an important source of protein. Under the name of soy sauce, it has been known to Europeans in India for many years, and is not unknown in the United States. Most of the soy bean products are fermented; that is, they are prepared

with the aid of micro-organisms. The micro-organisms break down the cell walls and similar materials and thus the cell contents are rendered more accessible to the digestive juices at the same time peculiar and pleasant flavors are developed. The manufacture of these products is of very ancient origin and affords an interesting, practical illustration of the use of bacteria for economic purposes.

“The Chinese residents of San Francisco and other cities consume large quantities of these soy bean products and it is stated on good authority that soy bean cheese is manufactured in this country, though doubtless it is seldom, if ever, eaten by any except the Chinese.”

Note 1. This periodical was later named *North Dakota Farmer*.

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term “soy bean cheese” or “bean cheese cakes” to refer to tofu.

Note 3. This is the earliest document seen (June 2011) concerning soybeans in connection with (but not yet in) North Dakota.

Note 4. This is the earliest English-language document seen (Oct. 2003) that contains the term “soy bean milk.”

Note 5. Dr. E.F. Ladd was a nationally-known pioneer in food safety and sanitation in the United States. He published this periodical, *Sanitary Home*, in Fargo and distributed it free of charge like an extension publication before the extension service was created; North Dakota State Univ. paid the printing and mailing expenses. Interested in home safety, he rewrote technical publications in a language homemakers could understand. He did much work with North Dakota food purity and chemical purity laws. Address: PhD, Office of Experiment Stations, Dep. of Agriculture, Washington [DC, USA].

61. Abel, Mary Hinman. 1900. Beans, peas, and other legumes as food. *Farmers' Bulletin (USDA)* No. 121. 32 p. See p. 9-11. Illust. Revised Nov. 1904. Corrected March 1906. [1 ref]

• **Summary:** A section titled “Soy Bean (*Glycine hispida*)” (p. 9-11) briefly describes the soybean plant and the rich nutritional composition of its seeds. The first paragraph is quoted from USDA Farmers' Bulletin 58.

Starting with paragraph 2: “This leguminous plant, probably native in China, is the most important legume of China and Japan... In the Orient this bean and the various food products made from it are so largely consumed that it is perhaps the most important food plant next to rice. The soy bean is eaten to a small extent boiled like other beans, but in China and Japan it is elaborated into a variety of products, all of which have a high percentage of protein, and when eaten in connection with the staple food, rice, which is so deficient in that constituent [protein], helps to make a well-balanced dietary. Some one of these products is eaten at perhaps every meal and by rich and poor alike, especially in the interior of

these countries, where sea food is not obtainable.

“One of the most important of these preparations is shoyu, and it is the only one that has been introduced to any extent into other countries, where it is known as soy sauce...”

“There are also several varieties of bean cheese or similar products made from this legume which are very important foods. These are natto, miso, and tofu. Natto is made from soy beans that have been boiled for several hours until very soft, small portions of the still hot mass being then wrapped securely in bundles of straw and placed in a heated, tightly closed cellar for twenty-four hours. Bacteria, probably from the air or the straw, work in the mass, producing an agreeable change in its taste.

“For tofu, the soy bean, after soaking and crushing, is boiled in considerable water and filtered through cloth. To the resulting milky fluid 2 per cent of concentrated sea brine is added, which, probably by virtue of the calcium and magnesium salts present, precipitates the plant casein, which is then pressed into little snow-white tablets. It is made fresh every day. Tofu is sometimes cooked in peanut oil before it is eaten. In natto and miso the action of minute organisms plays an important part. In tofu there is no such action. The composition of a number of these products is as follows:”

A table (p. 11) shows the nutritional composition of food products made from soy beans, including fresh tofu, natto, white miso, red miso, Swiss miso, and shoyu (2 samples).

An illustration (non-original line drawing, p. 10) shows a soy bean plant with a cluster of 7 pods to its upper left (slightly changed from an original in Carrière 1880, p. 154).

This bulletin also discusses (with an illustration of each): The bean—Broad or Windsor bean (*Vicia faba*). Kidney bean (*Phaseolus vulgaris*). Lima bean (*Phaseolus lunatus*). Scarlet runner (*Phaseolus multiflorus*). Frijole (*Phaseolus spp.*). Cowpea (*Vigna catjang*). Lablab bean (*Dolichos lablab*) and other common varieties. Locust bean (*Ceratonia siliqua*).

The pea—Field pea (*Pisum arvense*). Garden pea (*Pisum sativum*). Chick-pea or gram (*Cicer arietinum*).

The lentil (*Lens esculenta*). The peanut (*Arachis hypogaea*).

Note 1. This is the earliest English-language document seen (Aug. 2011) that uses the term “milky fluid” to refer to soymilk.

Note 2. Mary Hinman Able was not an employee of the USDA or of the federal government. She was a pioneer in the fields of nutrition, nutrition education, home economics, and popularizing science for the general public. Between 1904 and 1913 she wrote several farmers bulletins for the USDA. From 1909 to 1915 she was editor of the *Journal of Home Economics*.

62. Aymar, R.W. 1900. Looting Peking's priceless treasures: When allies entered the Imperial City. *Atlanta Constitution (Georgia)*. Oct. 9. p. 5.

• **Summary:** “‘Look at this,’ begged a soldier, holding up to

me a lantern of bronze. It was of superb design, with tracings on it as fine as the filaments of a spider's web. The treasure was at least 400 years old. The most marvelous thing about it was the translucent globe—made of what do you think? Of bean curd, a wonderful fabrication, flimsy as gelatin and warranted not to break or crack.”

Note 1. It is unclear how one could make a translucent globe out of bean curd [tofu]. H.T. Huang says: I really have no idea how it was done. My best guess is that it was made by using bean curd skin (yuba).

63. Boorsma, P.A. 1900. Scheikundig onderzoek van in Ned.-Indie inheemsche voedingsmiddelen. De sojaboon [Chemical analysis of some indigenous foodstuffs in the Netherlands Indies. The soybean]. *Geneeskundig Tijdschrift voor Nederlandsch-Indie* 40:247-59. [18 ref. Dut]

• **Summary:** Contents: Literature review. Introduction (Boorsma is living in Java). Chemical composition of indigenous soybeans: Table giving figures (based on Boorsma's original research) for large black, large yellow, small yellow, unripe or immature black soybeans, soy protein (*eiwit in de soja*) or legumine, the oil (*De vette olie*), analysis of the ash, starch, the black soybean (*zwarte kedeleh*), use of soybeans in Java and Japan. Japanese soy preparations (*Japansche soja preparaten*): Shoyu (soja) made with koji, tofu, yuba, miso and natto. Indigenous (Chinese) preparations: Tempeh (*tempe kedeleh*), Indonesian soy sauce (*Ketjap-Bataviasche soja*), tofu and pressed tofu (*Tao-hoe en Tao-koan*), Indonesian miso and fermented black soybeans (*Tao-tjo en Tao-dji*).

Note 1. This is the earliest document seen (Jan. 2012) in any language that mentions “Tao-dji.”

Note 2. This is the earliest Dutch-language document seen (Jan. 2012) that mentions fermented black soybeans, which it calls *Tao-dji*.

Note 3. This is the 2nd earliest document seen (March 2009) that mentions Indonesian-style miso, which it calls “Tao-tjo.” This is the earliest Dutch-language document seen (Feb. 2009) that uses the word “Tao-tjo” to refer to Indonesian-style miso.

The section titled “Japanese soy preparations” (p. 251-53) includes descriptions of koji, tofu, dried frozen tofu, yuba, miso and natto, as follows: Tofu is the Japanese name for a yellow-white to gray mass, which is prepared by macerating the finely ground up soybeans with water; an initial [natural] fermentation, which occurs alongside, creates enough acid to precipitate part of the protein. Then a short heating, causes as much fat as possible to bind to the protein, so that the liquid after filtration has a milky appearance. Through the addition of the highly alkaline magnesium concentrate, a by-product of making sea salt, the protein is precipitated, separated out by hand and shaped into cakes—which contain lots of water, protein and fat. As a side dish or in the preparation of soup, tofu is used a lot. To remove most

of the water, it is common to freeze and dry the cakes in the sun afterward. Then they are called kori-tofu.

Yuba is an even fattier product obtained by the evaporation of the cream layer, that aggregates on the surface of the just mentioned bean milk.

In Japan, most soybeans are processed into cheese types, called miso and natto [which the author confuses in the following].

The cooked beans, that have been formed into a firm dough are fermented again with koji, kitchen salt and water. The temperature and the amount of kitchen salt, that one uses, affect the nature of the product [miso] and the speed of fermentation. Finally the mass is cooked for a long time in the brine, separated and shaped into cakes. The resulting vegetable cheese [natto] is then wrapped in bundles, of about 500 grams, of straw, and left to its own for a few days in a heated space; where, according to Loew [sic, Yabe 1895, p. 438-39] the microbes attached to the straw cause an additional post-fermentation.

The reason for the somewhat extensive attention [in this writing] to the latter, is that the native soybean (*katjang kedeleh*) preparations of the Dutch East Indies are, more or less, patterned after the Japanese.

This excellent article contains a 4½-page description (the best seen to date, p. 253-58) of the traditional process for making soybean tempeh (*Tempe kedeleh*). The soybeans are parboiled, soaked in water for 2-3 days, drained, steamed in a steamer (*koekesan*), spread in a layer several centimeters thick on woven bamboo trays in shelves, and covered completely with banana leaves. They are then inoculated with the *bijang*, which is the “mold containing residues of a previous preparation.” This is mixed in here and there, then the trays are covered lightly with banana leaves so as to let in some air. “Rampant growth of the mold soon begins. In the evening the mass is molded a little and after two 24-hour periods one will obtain a coherent cake, which is cut into pieces and taken as is to the market.”

The cotyledons are stuck together by a dense mycelium, which has grown into a somewhat white covering. According to Prinsen Geerligs (cited above), the name of the mold is *Chlamydomucor Oryzae*.

During the two days of rampant mold growth, a radical conversion takes place in the components of the seeds; a lot of water, carbonic acid, and heat start to develop... A thermometer inserted into the fermenting mass shows a temperature 10-12°C above that of the environment.

As the preparation is finished, the banana leaves are taken away; the temperature drops slowly to normal, the rampant mold growth stops, and the mass dries out slightly. In this condition, the tempeh can be kept for several days without spoiling.

When the rampant mold growth is allowed to continue for a third day, simply by leaving the banana leaves in place, the conversion will soon become much stronger as noted by

the formation of ammonia. Also poisonous products start to form; a monkey, given a little bit [of overripe tempeh] among his other foods that day was vomiting violently one hour later. Thus we should admit that the stories about poisonings caused by various sorts of tempeh [such bongkreng, made from coconut presscake] probably have some foundation. But there is little fear of this from soybean tempeh.

After microscopic examination, Boorsma concluded that Prinsen Geerligs and others were wrong in stating that (1) the mold hyphae penetrate and dissolve the hard soybean cell walls, and (2) cellulose is decreased during tempeh (*tempe*) fermentation. He studied the chemical and compositional changes at four stages during a 3-day tempeh fermentation; a table shows his findings. He observed that fats and soluble carbohydrates decreased substantially, while nitrogen decreased only slightly. He also discussed the hydrolysis of soybean lipids, and why tempeh is easier to digest than whole soybeans.

Note 4. This is the earliest Dutch-language document seen (Sept. 2011) that uses the term *tempe kedele* or the word *tempe* to refer to tempeh.

Note 5. This is the earliest document seen (Jan. 2012) that describes how to make tempeh on a commercial scale.

On page 258 Boorsma briefly discusses Ketjap (which he called *Bataviasche soja*, or Jakarta soy sauce) and Tao-hoe and Tao-koan (tofu and firm tofu), based on information from Prinsen-Geerligs (for both) and Vorderman (for firm tofu). For each he gives a nutritional composition. On page 259 Boorsma briefly discusses *Tao tjo* and *Tao-dji* (Indonesian-style miso and fermented black soybeans). Note 6. This is the earliest Dutch-language document seen (Dec. 1999) that uses the term *Tao tjo* to refer to Indonesian-style miso or tauco / tauchō.

Note 7. This is the earliest document seen (April 2001) that contains the term *Tao-koan*.

Note 8. This is the earliest Dutch-language document seen (Jan. 2012) that contains the word *natto*.

Note 9. This is the earliest Dutch-language document seen (Oct. 2012) that mentions yuba, which it calls *Yuba* and describes as *een nog vetrijker product dat verkregen wordt bij uitdampen van de roomloog, die zich bij de zoeven genoemde boonenmelk aan de oppervlatke verzamelt.*"

Note 10. Boorsma was a Dutch naturalist who lived in Indonesia in the early 1900s. Address: Netherlands.

64. Zavitz, C.A. 1900. Co-operative experiments in agriculture. *Ontario Agricultural and Experimental Union, Annual Report* 21:6-37. For the year 1899. See p. 9, 16, 31-32.

• **Summary:** A table (p. 7) shows the number of distinct experiments in agriculture, number of experimenters, and number of satisfactory reports each year for 1886, 1888, and 1891-99. For 1886 these numbers were 1, 12, and 8. For 1888 they were 1, 90, and 40. For 1891 they were 12, 203,

and 126. For 1895 they were 15, 1699, and 513. For 1899 they were 23, 3485, and 739. Thus, during these 14 years the Union made remarkable progress.

A table titled "List of experiments for 1899" (p. 9), under "Grain crops" includes "Testing three varieties of Japanese beans—3 plots."

In a long "List of experimenters" we read (p. 16) that the Japanese beans were grown by: (1) F.B. Doud, Branchton, Brant Co. (2) Simon Miller, Unionville, York Co. (3) Jno. D. Neilson, Thedford, Lambton Co. (4) O.A.C., Guelph, Wellington Co.

In the section titled "Conclusions" (p. 31-32), table 15 shows the results (based on 4 tests) of testing three leading varieties of Japan [soy] beans: Medium Green (estimated value 72), yielded 2.6 tons/acre of straw and 22.4 bu/acre of grain. American Coffee Berry (estimated value 100), 1.4 tons/acre of straw and 21.3 bu/acre of grain. Extra Early Dwarf (estimated value 86), 1.1 tons/acre of straw and 12.7 bu/acre of grain.

The text immediately below the table explains: "The Soy beans [sic] (*Glycine hispida*) is a leguminous plant native of Japan and China, and ranks very high from a chemical point of view. The plant is an annual, erect in growth and branches profusely. There are a large number of varieties, nearly all of which are too late for the conditions of Ontario. The different varieties are distinguished largely by the time required for the plants to mature and by the color of the seed; the yellow, the green, and the black, being the most common. The Soy beans are used for green fodder, silage, hay, pasture, and as a soil renovator, and the grain is used as a feed for live stock. These beans have been used as a food for man from the earliest times in Japan and China, and more recently in the European countries. They are not used as a food by themselves, but are made into different complex forms, of which five are quite common among Japanese, namely: natto, tofu, miso, yuba, shoyu.

"Conclusions.

"1. The Soy beans gave very good results in the Union experiments in 1899.

"2. The medium green Soy beans which gave the largest yield of grain per acre of the three varieties tested over Ontario in 1899, is the latest of the three varieties.

"3. The American Coffee Berry was the most popular variety with the experimenters when yield, time of maturity, etc., were all taken into consideration."

Note 1. This is the earliest report seen (Aug. 2002) in this periodical concerning soy beans. C.A. Zavitz is also secretary of the Ontario Agricultural and Experimental Union, and a member of its Committee on Agriculture (appointed at the last annual meeting).

Note 2. This is the earliest document seen (Jan. 2012) that mentions natto in Canada. Address: B.S.A., Director of Co-operative Experiments in Agriculture, O.A.C. [Ontario Agricultural College], Guelph [Ontario, Canada].

65. Hosie, Alexander. 1901. Manchuria: Its people, resources, and recent history. Tou-fu or bean curd (Document part). London: Methuen & Co. xii + 293 p. See p. 183-84.

• **Summary:** “The Tou-fu, or bean curd,... is a product of universal consumption in China. The beans—yellow or green—are steeped overnight in cold or, if time is an object, in warm water. In the morning they are taken out much swollen and ground in a stone mill, water being poured in at the hole in the top of the mill-stone every few seconds to hasten the process. The whole is then collected and passed through a sieve or piece of cloth, which retains the epidermis of the beans. The filtrate is thereafter poured into a pot and brought to the boil. It is then poured into an earthenware *kang*, or jar, and half a bowl of brine (*Lu shui*) [nigari], from sea-salt, well diluted, is added to and stirred in it to cause coagulation of the legumine. This occurs in about an hour, when it is transferred to a wooden frame some three inches deep, with wooden sides and bottom, whereon a cloth has been previously spread. The water escapes through the cloth and by a drainage opening at the end of the frame, the cloth is folded over the legumine, and a lid of bamboos or reeds is placed on the top and weighted with stones to press out the moisture and shape the curd to the size of the frame. This is soon completed; the stones and lid are removed; and the cloth folded back exposes a whitish grey mass of the consistency of cream cheese. It is now ready to be cut up by knife, and is sold at from 8 to 9 copper cash (960 to 1,000 copper cash = 1 Mexican dollar = about 2s.) a catty of 1 1/3 lb. Three shêng (1 shêng = 3 catties = 4 lb.) of beans will yield 50 catties, or 66 2/3 lb. of bean-curd. Besides the actual curd various analogous substances are produced, such, for example, as Tou-fu-kan-tzu (dry bean-curd cakes), where the curd is cut up and undergoes additional pressure; Tou-fu-nao (bean-curd brain), a substance of less consistency than the curd itself, obtained by putting powdered gypsum instead of brine in the filtrate after it has been brought to the boil; Tou-fu-p’i (bean-curd skin [yuba]), the scum of the boiling filtrate, which is taken off and hung up to dry; Ch’ien-chang-tou-fu (bean-curd wafers or sheets), made by placing thin layers of the legumine in cloth and subjecting them to considerable pressure, and Tung-tou-fu (frozen bean-curd), where the bean-curd is cut up, frozen and then exposed to the rays of the sun, whereby the greater part of the moisture is removed during the process of thawing.”

Note 1. This is the earliest English-language document seen (Oct. 2012) that uses the term *Tou-fu-p’i* to refer to yuba.

Note 2. This is the 2nd earliest English-language document seen (Oct. 2012) that uses the term “bean-curd skin” (regardless of hyphenation or spacing) to refer to yuba.

Note 3. This is the earliest English-language document seen (Aug. 2011) that uses the term “dry bean-curd” or the term “dry bean-curd cakes” (regardless of hyphenation or

spacing) to refer to pressed tofu (doufu-gan). Address: M.A., F.R.G.S., Once Acting British Consul, Tamsui; Now at Aberdeen (Scotland or Hong Kong).

66. Koenig, Franz Joseph. ed. 1903. *Chemie der menschlichen Nahrungs- und Genussmittel*. Vol 1. *Chemische Zusammensetzung...* Ed. 4 [The chemistry of human foods and food adjuncts (stimulants / enjoyables). Vol. 1. Chemical composition... 4th ed.]. Berlin: Verlag von Julius Springer. 1535 p. See vol. 1, p. 97-98, 595-600, 638, 651-53, 1463, 1483-84, 1509. [31 ref. Ger]

• **Summary:** Summaries of early studies on the chemical composition of soybeans and various soyfoods, plus some original studies. Commercial sauces and Japanese shoyu (p. 97-98). Cites: Wein, Kinch, Anderson, Senff, Schwackhöfer & Stua, Zulkowski, Mach, Ulbricht, Wildt, Schröder, Blaskovics, Caplan, Pellet, Carriere, Kellner, Jenkins, Becke & Cosack, Kornauth. Soybeans in Russia: Nikitin, Giljaranski, Lipski [Lipskii] (p. 1483-84). Address: Geh. Reg.-Rath, o. Professor an der Kgl. Universitaet und Vorsteher der Agric.-Chem. Versuchsstation Muenster in Westphalia, Germany.

67. Abel, Mary Hinman. 1904. Beans, peas, and other legumes as food. *Farmers' Bulletin (USDA)* No. 121. 39 p. See p. 11-13, 18-20. Revised. Illust. [1 ref]*

• **Summary:** A revised edition, 3 pages longer than the 1900 original. The information about soy is unchanged, however it is on different pages (see above). The section titled “Nutritive value of the legumes” (p. 18-20) includes a table titled “Composition of fresh and dried legumes compared with that of other foods.” Under “Dried legumes,” the composition of “Soy beans” (dry, containing 10.8% water) is given.

68. *Semiannual Index to Treasury Decisions under the Customs, Internal Revenue, Industrial...* 1904. Bean cake, bean stick, and potato cake (24513–G.A. 5361). 6:33.

• **Summary:** Bean cake is Koya-dofu [dried-frozen tofu]. Bean stick is dried yuba sticks. Potato cake is konnyaku.

“The merchandise in question in these cases was imported from Japan and China into the port of Honolulu, Hawaiian Islands, and consists of so-called bean cake, bean stick, and potato cake. The goods were classified and assessed for duty under the provision for “all vegetables prepared or preserved,” in paragraph 241 of the tariff act of 1897 at 40 per cent ad valorem, and are claimed to be dutiable at 20 per cent ad valorem, as nonenumerated manufactured articles, under section 6 of the act.

“The bean cakes are small, approximately rectangular shapes of porous consistency and yellow color, which break into crumbs under pressure. The bean sticks [dried yuba sticks] are lengths of hard, brittle, yellow substance, having a glazed appearance and resembling a piece of molasses candy.

“Kikujiro Shimada, owner of the Tofu Manufactory in Yokohama, who has been engaged in this business over thirty-five years, thus describes the manner in which bean cake is made: To manufacture bean cake, koya tofu, first keep soja beans in water at least twenty-four hours (beans are now mostly imported from China), and when the beans become very soft, grind them under the millstone; mix the ground beans with water and boil the mixture in kettles about half an hour. When cooled, by pouring it into a cloth sack and squeezing it, we get a milk-like juice, which is too rich for tofu manufacturing. What remains in the sack is mixed with water and boiled again and the squeezing repeated. The thin milk-like juice we get is mixed with the rich one obtained by the first squeezing, and while the mixture is yet warm it is poured into the mold and a little quantity of nigari (the brine left by the deliquescence [deliquescence] of a salt) is added to cause the bean juice to coagulate. The mold has several holes lined with fine cloth to allow the water to drop away. In the course of an hour or so we get tofu, white jelly-like food. Slice the tofu carefully and freeze it in cold nights and then dry it in the sun. Repeat this for days and nights until the frozen tofu is perfectly dry, when it is marketable.

“The process of making bean stick is described in a letter dated February 20, 1903, from the commercial museum, department of agriculture and commerce, Tokio, received by the collector from the same source as the manufacturers’ affidavits above quoted. It is as follows:

“Yuba (bean stick). Keep the soja beans in water until they are very soft; then rub them fine in “suribachi” (mortar like earthen pot) and then boil these. Thick creamlike matter will collect on the surface. This when dried by fire is yuba.”

69. Kadono, C. 1905. The diet of the Japanese. *Times* (London). Feb. 11. p. 6, cols. 3-4.

• **Summary:** This article is actually mostly about soya beans and their products. “It is well known that the Japanese diet consists chiefly of rice, vegetables, and fish, with very small and occasional additions of butchers’ meat. The relative quantities of these, and vegetables and products thereof used, would be interesting and in some respects instructive.

“The following bill of fare, which attempts to give the three meals of a day for a family of moderate circumstances, will show how they live. It may also be said that all Japanese live rather simply whether high or low in their station of life, and the menu can be taken as typical of all classes.

“Breakfast (about 7 to 7:30 a.m.).—Miso soup (with vegetables, tofu, &c.), pickles, boiled rice, tea (sometimes raw egg or boiled sweet soya beans, or natto, &c.).

“Lunch (12 noon).—Fish boiled in soya, vegetables stewed in soya, pickles, boiled rice, tea.

“Supper (6 to 6:30 p.m.).—Soya soup (with vegetables, fishes, &c.), raw fish sliced and eaten with soya sauce, broiled fish (or boiled) with vegetables (or butchers’ meat or fowl and vegetables stewed), rice, tea...

“From the foregoing it can be seen how cereals and vegetables predominate in Japanese diet. Rice and miso and soya, as will be seen from the menu, form the predominant feature of the food, and it may not be an exaggeration to say that the Japanese physique is mainly built up on the products of soya beans, such as miso, soya sauce, tofu, &c.”

There follows a detailed table titled “Analysis of Soya Beans and Their Products. (Extract from a table by Mr. C. Omura.)” Nutritional analyses are given for the following, written exactly as they appear: Soya beans (5 varieties), miso (white, red Osaka, red Tokio, red Sendai), soya sauce (regular or Noda), tofu, dried frozen tofu, fried tofu, mash residue from tofu (Okara), yuba (Dried skim off tofu-mash), natto (Steamed beans with surface fermentation).

Note 1. This is the earliest English-language document seen (May 2012) that contains the term “fried tofu.”

“Soya beans are grown all over Japan and in Manchuria, and so far as I know cannot be had here [in England]. They are eaten boiled, either young or ripe.” They are manufactured into those articles shown above, of which miso, soya, and tofu are the most important...” The author then gives a 5-10 line description for each of how miso, soya sauce, and tofu are made. Tofu is coagulated with a “strong brine. “The remnant (okara), being a white pulverized mass, called fancifully ‘snow balls’ by Japanese, is eaten boiled and seasoned with soya sauce.

“I have given Japanese meals to some English friends and most have pronounced the food excellent, and some have even braved the sliced raw fish with soya sauce.”

Note 2. Concerning the idea that okara is sometimes fancifully called “snow balls,” the term *kirazu* is written with three characters: yuki = snow, hana = flower(s), and sai = vegetable(s). Or the author may be referring to a local term from some part of Japan.

Note 3. This is the earliest English-language document seen (Oct. 2001) that uses the Japanese word *okara* or the term “mash residue from tofu” to refer to okara.

Note 4. This is the earliest English-language document seen (Nov. 2011) that contains the word “dried frozen tofu” (or “dried-frozen tofu”). Address: England.

70. *Manchester Guardian*. 1905. What the Japanese eat. Feb. 13. p. 12.

• **Summary:** This is a summary of: Kadono, C. 1905. “The diet of the Japanese.” *Times* (London). Feb. 11. p. 6, cols. 3-4. Mentions soya beans, miso soup, tofu, natto, soya sauce, etc.

71. Oshima, Kintaro. 1905. A digest of Japanese investigations on the nutrition of man. *USDA Office of Experiment Stations, Bulletin* No. 159. 224 p. See p. 20-33, 40-43, 46-47, 145-53, 168-73. [26 ref. Eng]

• **Summary:** One section titled “The Soy bean and its preparations” (p. 23-33) gives detailed discussions of tofu

(including yuba, frozen tofu, kara [okara], and fried tofu), miso (incl. white miso, red or Sendai miso), shoyu, and natto. The nutritional composition of each is given, and many early studies by Western and Japanese scientists are cited.

“Next to rice in importance in the Japanese diet are legumes, which are universally used... Of the different legumes used as food in Japan, the soy bean (*Glycine hispida*) is by far the most important. According to agricultural statistics for the years 1879 to 1887, nearly 10 per cent of the cultivated land in Japan was devoted to the growth of this legume, an area somewhat larger than that devoted to wheat growing. In the northern Island [Hokkaido] in 1887 nearly 17 per cent of the total cultivated area was devoted to the soy bean. The average yearly production of soy beans amounts to about 360,000,000 kilograms... A part of the product is of course used for seed, and a not inconsiderable part is used as fertilizer.*” (Footnote: * “In northern China soy beans are used to some extent in the production of oil, which is used for cooking and illumination [in oil lamps]. The residue from this process [the presscake] is imported largely into Japan, where it is used as a fertilizer”). Other legumes widely used in Japan include the mungo bean (*Phaseolus mungo radiatus*) and the adzuki bean (*Phaseolus mungo subtrilobata*) (p. 23-24).

“Many varieties of soy beans are known, being designated according to the color, size or shape of the seed, and the time required for maturity. For example, there are black, green, yellow, and white varieties, and these are again designated as early, medium, or late, according to the season of maturity, and small, medium, and large, according to the size of the seed. The black soy beans are used chiefly for cooking, with sugar and shoyu; the green variety is also used in this way, either in the fresh state or after being dried” (p. 24). There follows a long section on tofu (detailed in a separate record).

The “larger part of the leguminous food in the Japanese diet consists of the preparations of soy beans, such as miso, shoyu and tofu,...” (p. 46).

In Japan, legumes about 8% of the protein and 11% of the fat in the diet (p. 137). Many digestion experiments are described (p. 144-87), including those with tofu, shoyu, “tofu cake or kara, the soy-bean residue remaining from the preparation of tofu (see p. 26),” and yuba conducted in Japan by Osawa and Ueda (1887), T. Suchi (1887), Kano and Iishima (1899). Table 91 (p. 191) is a “Summary of results of digestion experiments with legumes and legume preparations.” The percentages given are “coefficients of digestibility.” Experiments No. 6 and 7—soybeans (average): Protein 65.5%, fat (uncertain), carbohydrates (incl. crude fiber) 85.7%. Experiments No. 8 and 92—tofu (average): Protein 92.7%, fat 96.4%, carbohydrates (incl. crude fiber) 93.3%. Experiment No. 94—“yuba (soy legumin coagulated):” Protein 92.6%, fat 95.7%, carbohydrates (incl. crude fiber) 86.6%, crude fiber 35.5%. Experiment No. 93—

“tofu cake (soy-bean residue [okara]):” Protein 78.7%, fat 84.3%, carbohydrates (incl. crude fiber) 82.8%, crude fiber 89.6%.

Note: This is the earliest English-language document seen (Oct. 2001) that uses the Japanese word *kara* to refer to okara.

Other Japanese foods discussed include adzuki or adzuke beans (*Phaseolus mungo subtrilobata*) (p. 24, 170), dried algae (sea vegetables, p. 34), and kuzu (p. 170). Address: Director, Hokkaido Agric. Exp. Station, Sapporo, Japan.

72. Oshima, Kintaro. 1905. A digest of Japanese investigations on the nutrition of man: Tofu (Document part). *USDA Office of Experiment Stations, Bulletin No. 159*. 224 p. See p. 26-28. [1 ref. Eng]

• **Summary:** “Tofu: This term is commonly translated as bean cheese—though sometimes bean curd—in English and *Bohnen-käse* in German. Tofu is not strictly equivalent to cheese, however, as neither bacteria nor ferments are involved in the process of manufacture. It consists chiefly of the albuminoid materials of the soy bean combined with magnesium and calcium salts, as pointed out by Inoue.” To make tofu, soaked soybeans are ground between millstones. “The mass is then mixed with about three times its bulk of water and boiled for about an hour, after which it is filtered through a cloth. By this process about 30 per cent of the total protein of the beans is dissolved and contained in the filtrate, ready to be precipitated as tofu. The filtrate is white and opaque, somewhat resembling milk. To this is added, with constant stirring, about 2 per cent of the concentrated mother liquid [nigari] obtained in the manufacture of salt from sea water, whereupon the albuminoid material is precipitated in combination with calcium and magnesium salts.” After pressing, the tofu is finally cut into cakes about 10 cm broad, 2 cm thick, and 25 cm long [about 3.9 by 0.79 by 9.8 inches], though the size varies in different localities.

“The residue from the boiled and filtered beans is known as kara [okara], or tofu cake, and contains a large quantity of protein and carbohydrates. It is a good food material, being used considerably by poor people as an ingredient of miso soup.

“If the milky filtrate mentioned above is boiled, a sort of film forms on the surface. This film, which consists mainly of coagulated albuminoids and fat, is sometimes prepared in large quantity, and when dried is used as an article of food, being known as yuba.

“Tofu is generally prepared every day and is eaten in the fresh condition simply with a little shoyu, though it is also frequently cooked in shoyu or in miso soup. Fried tofu, called abura-age, is also a very popular article of food. Rape-seed oil is generally used in frying, though sesame oil is sometimes used.

Note. This is the earliest English-language document

seen (May 2012) that uses the word “abura-age” to refer to fried tofu or to deep-fried tofu pouches.

“Tofu may also be prepared for preservation and transportation. For this purpose it is cut into smaller pieces and exposed to severe cold weather, to remove the water by freezing, and then dried in an oven. As thus prepared it can be preserved for several years. When the tofu is frozen the water collects in fine needles of ice distributed throughout the mass. When the ice melts and the water runs out, it leaves the tofu porous and it may be easily dried. If it is not frozen, it is difficult to dry it and the resulting material is dense and horn like.”

Table 2 (p. 28) gives the average composition of the above-mentioned tofu preparations: “Fresh tofu, frozen tofu, fried tofu, tofu cake [okara], yuba.”

The digestibility of the nutrients in tofu has been found to be high, as will be seen from the results of digestion experiments summarized later (p. 191). As much as 95 per cent of the protein is digested and about the same proportion of fat. The carbohydrates were found to be somewhat less digestible when the tofu was eaten alone, but when it was eaten with rice about 99 per cent of the total carbohydrates of the diet was digested.

“Both the composition and the digestibility of tofu, therefore, prove it to be a very nutritious food material. This is extremely significant, because tofu in its various forms is used very extensively by all classes of Japanese. In the interior of the country, where fish can not be easily obtained, it is a most important source of protein. For Buddhist priests, as well as the strict adherents to Buddhism (who eat no animal food), it forms a very popular and almost indispensable dietary article. Though no authentic record has been found regarding the manufacture of tofu in Japan, it is believed on good authority that the method was first introduced from China by Buddhists for their own use.”
Address: Director, Hokkaido Agric. Exp. Station, Sapporo, Japan.

73. Abel, Mary Hinman. 1906. Beans, peas, and other legumes as food. *Farmers' Bulletin (USDA)* No. 121. 38 p. March 25. See p. 11-13, 18-20. Corrected. [1 ref]

• **Summary:** A corrected edition, one page shorter than the 1904 revised edition. On the cover, below the title is written “(Corrected March 25, 1906),” yet at the bottom of the same page the publication date is given as 1904.

The section about soy (p. 11-13) is titled “Soy bean (*Glycine hispida*) and its preparations,” but the information in that section appears to be the same as in the original 1900 edition, as is the illustration of the soy bean plant (p. 12) and the table on page 19.

74. Loew, O. 1906. Ueber einige sonderbare japanische Nahrungsmittel [On some special Japanese foods]. *Mitteilungen der Deutschen Gesellschaft fuer Natur- und*

Voelkerkunde Ostasiens 11(1):109-11. [Ger]

• **Summary:** Prof. O. Loew includes a discussion of tofu, soymilk, yuba, and shoyu (*shōyū-sauce*). On the coasts of Japan there were fresh seafish, and in the inland regions some salted fish were used. People have learned how to prepare wheat gluten (*Jap: fu; German: Weizenkleber*) in various dried forms, which are very porous and easily digested. The protein of the soybean, under the name of tofu (*Tōfu*), comes in the form of soft white cakes and is prepared daily. It is sold from door to door by salespeople.

The cooking of the softened soybeans, before the precipitation of the tofu, has a very milklike consistency. Without doubt, it is similar in nutritional value to milk but it can be recommended only for adults, and not for sensitive infants. “When this soybean milk (*Soyabohnenmilch*) mixed with some gelatine [sic] is simmered down, and while in a concentrated condition the mixture is poured into flat, level containers, there results from the drying of the gelatinous mass thin skins, which are sold under the name of yuba.”

Note 1. This is the earliest German-language document seen (Oct. 2003) that uses the term *Soyabohnenmilch* (“soybean milk”) to refer to soymilk.

Note 2. The date on the title page is given as 1907-09. The place of publication has now changed to Tokyo. Address: Prof. of Agricultural Chemistry, Imperial University, Tokyo, Japan.

75. Senft, Emanuel. 1906. Ueber einige in Japan verwendete vegetabilische Nahrungsmittel, mit besonderer Beruecksichtigung der japanischen Militaerkonserven [On some vegetable foods used in Japan, with special attention to Japanese military canned foods]. *Pharmazeutische Praxis* 5(12):481-91. [5 ref. Ger]

• **Summary:** Working for the German Food Administration, the author examined a number of preserved foods that had played an important role in helping Japan to win the Russo-Japanese war. He drew heavily on Loew (1895). “Widely distributed in Japan is a unique baked good, which is produced primarily from wheat gluten with only a little of wheat flour; it is called *Fu* (wheat gluten bread).

“A very important role is played by the soybean and the many diverse products made from it: Yuba, the vegetable cheeses tofu, natto, and miso, plus shoyu or soy-sauce (*Shoju oder Soy-Sauce*). Like the soybean, tofu and natto are rich in protein. They supply the protein lacking in rice.”

Also discusses fresh konnyaku, dried-frozen konnyaku, dried persimmons, sea vegetables (12 types in great detail, with an illustration of the cells of a kombu plant), and warabi (dried ferns). Address: Official of military medicines, Committee of military hygiene.

76. Bloch, A. [Armand-Aron]. 1907. Le soja. Sa culture, sa composition, son emploi en médecine et dans l'alimentation [The soybean. Its culture, its composition, its use in medicine

and in food]. *Bulletin des Sciences Pharmacologiques (Paris)* 14:536-51. Sept.; 14:593-606. Oct. [46 ref. Fre]

• **Summary:** A review of the literature drawing heavily on Egasse (1888), Trimble (1896 and 1897), and Williams & Langworthy (1897, revised 1899), and including many others. Contents: Introduction (mainly a long history of the soybean worldwide, with emphasis on Europe). Chemical composition of the soybean. Chemical composition of the soybean plant.

Part II: Preparation of shoyu. Preparation of miso. Natto. Preparation of tao-yu ([Chinese-style soy sauce] a condiment made with black soybeans, hibiscus leaves, and *Aspergillus Wentii* mold) and tuong. Tofu and yuba. Other soyfoods, incl. soy coffee.

“We are presently looking everywhere for ways of giving economic value to our colonies. It seemed interesting to me to draw attention to the soybean, the Chinese bean (*le Soja, Haricot chinois*) which contributes a large part of the food of the people in China, Japan, and the Far East. Already in use in Indochina, tested in Europe with success then abandoned for no apparent reason, the soybean could acclimatize itself in other colonies of ours, particularly in Madagascar, and perhaps in certain of our African possessions, and therefore could contribute to increasing their riches and the well being of their indigenous peoples.”

Soy oil “can be extracted partially by pressure or completely by ether or petroleum ether. It is yellowish red with a not particularly disagreeable odor.”

Mr. Lailleux, a former intern at the hospital in Algiers, has reported that a certain number of diabetic Arabs under treatment at the hospital of Dey, in Algiers [Algeria], have been helped by a dietary regimen based on soybean pap.

Note: This is the earliest document seen (Aug. 2009) concerning soybeans in connection with (but not yet in) Madagascar. Address: Pharmacist major 2nd class of the colonial troops. Doctor of pharmacy.

77. Senft, Emanuel. 1907. Ueber einige in Japan verwendete vegetabilische Nahrungsmittel, mit besonderer Beruecksichtigung der japanischen Militaerkonserven [On some vegetable foods used in Japan, with special attention to Japanese military canned foods]. *Pharmazeutische Praxis* 6(3):81-89; 6(4):122-24, 131-32; 6(6):211-12, 219. [19 ref. Ger]

• **Summary:** These three sections contain a good review of the literature (especially the Japanese literature) in German. Issue No. 3 begins with “Phanerogams. Chapter 5. Legumes. Soybeans and soybean preparations” (p. 81-89). Contents: Introduction. Varieties: Group I. Soja platycarpa-Harz (5 forms—olivacea-Harz and punctata-Harz, melanosperma, platysperma, parvula Martens). Soja tumida-Harz (3 forms—pallida Roseb. [sic, Roxb = Roxburgh], castanea-Harz [brown], atrosperma-Harz). Anatomy and cell structure of different parts of the plant and seeds. A non-original

illustration (line drawing; p. 83) shows a soy bean, full-size and at cellular levels. Haberlandt and the Vienna World Exposition of 1873. Foods made from soybeans in China and Japan described by Charles Bryant (1785): Miso, soy sauce (*sooju-sauce* or soy), Roos, Koji. Tofu, sake. Shoyu or Soja-Sauce. Miso (vegetable cheese; “Recently the firm Jul. Maggi & Comp. in Kempthal makes a type of miso and sells it commercially”).

Issue No. 4 begins with “Natto and tofu” (*Bohnenkäse*) (p. 122-24) and includes fresh tofu and frozen tofu (*gefrorener tofu*). Yuba. A separate section on miso pickles (*Misozuke*; p. 131-32) describes the different types, especially those made with daikon (*Rettiche*).

Issue No. 6 discusses shoyu (called *Extrakt-Sauce Japonica*, or Shoyu-Sauce) (p. 211). A table (p. 212) lists the main food plants of Japan, including five different “varieties” (“var.”) of soybeans: *Kuro-mame, Shiro-mame, Ao-mame, Goishi-mame, Gankui-mame*. A photo (p. 219) shows various Japanese preserved foods, including a metal box containing “Fukujinsuke” [*fukujinzuke*] consisting of sliced vegetables (cucumbers, bamboo shoots, onions) preserved in soy sauce. Address: Military medicine official, Germany.

78. Strakosch, Siegfried. 1907. Das Problem der ungleichen Arbeitsleistung unserer Kulturpflanzen [The problem of the unequal production efficiencies of our crop plants]. Berlin: Verlagsbuchhandlung Paul Parey. 110 p. No index. 23 cm. [Ger]

• **Summary:** This book, dedicated to Julius Wiesner, “the master of plant physiology,” looks at national food supplies from the viewpoint of plant physiology. In the section on “Calculation of assimilative effects,” a table (p. 44-45) compares rye, wheat, corn, rice, soybeans, and potatoes in their production per hectare of starch, digestible protein, value of product in German marks, value of nutritive elements consumed, assimilative effect (defined as the ration of the value of the usable substance produced per unit area to the value of the nutritive elements borrowed from the soil by producing this substance), assimilative effect compared with rye, and difference between the production and consumption in German Marks. Soybean produces much more protein per given area of land than the other crops, has the highest assimilative ratio, 6.68 times larger than that of rye. Thus the culture of soybeans should be the most remunerative.

In the same section, a bar chart (p. 48) shows the value (in marks) of physiologically useful substance resulting from withdrawal of one mark worth of soil nutrients. The soybean gives the greatest returns of the 22 plants listed.

In the section on “Consideration of plant production efficiency in crop rotations” (p. 66+), the legumes are praised and soybeans are mentioned on pages 71 (the most productive of all legumes with an enormous number of 668) and 73. In this context, the work of Friedrich Haberlandt with soybeans and his book, *Die Sojabohne* (The Soybean,

Vienna, 1878) are described in detail (p. 74-76). Haberlandt died shortly after the publication of this book, and Hecke, his friend, carried on his work.

In the last chapter, "Goals and consequences," a table (p. 102) shows the productivity in the northern U.S. states of nine crops, including wheat, barley, corn, sugar beets, peas, Jerusalem artichokes, and soybeans. In value of crop per hectare, soybeans are third after Jerusalem artichokes (German: Topinambur; French: Topinambour) and sugar beets. Two long footnotes (No. 122 and 123, p. 109-10) discuss the importance in Japan of soybeans and the various foods made from them including shoyu (Shoju, Shoyu), miso, tofu, and yuba. Address: Dr., Wien-Hohenau.

79. Bloch, A. 1908. Le soja. Sa culture, sa composition, son emploi en médecine et dans l'alimentation [The soybean. Its culture, its composition, its use in medicine and in food]. *Annales d'Hygiene et de Medecine Coloniales* 11:85-122. [29 ref. Fre]

• **Summary:** This article is identical to that published by Bloch in 1907 in *Bulletin des Sciences Pharmacologiques* (Paris). Address: Pharmacist major 2nd class of the colonial troops. Doctor of Pharmacy.

80. Ruhrah, John. 1909. The soy bean in infant feeding; Preliminary report. *Archives of Pediatrics* 26:496-501. July.

• **Summary:** This pioneering paper was read before the Twenty-first Annual Meeting of the American Pediatric Society, Lenox, Massachusetts, May 28, 1909. "The soy bean (*glycine hispida*), sometimes incorrectly called the soja bean, is an annual leguminous plant which originally grew in a wild state from Cochin China to the south of Japan and Java."

There follows a brief but accurate history of the soy bean. "In 1875 Professor Haberlandt began a series of investigations with this plant in Austro-Hungary, and in his work published in 1878 he urges the importance of the soy bean as a food both for man and animals. After his death, which occurred in 1878, very little notice was taken of the soy bean in Hungary and the prophecy that he made for its future failed."

"As early as 1829 Thomas Nuttall wrote an article in the *New England Farmer* concerning the bean as a valuable crop for this country. The Perry expedition to Japan also brought back soy beans, but until the last fifteen or twenty years the plant was known only as a curiosity."

"The plant is grown in America, but is used chiefly for the purpose of a forage crop and comparatively little reference has been made to its use as food for man." The plants "bear a remarkable number of beans and the flowers are self-pollinated, making the yield independent of insects. The bean may be easily grown in Maryland. I am indebted to three friends for experimenting with this plant in their gardens and obtaining good crops..."

Note 1. This is the earliest document seen (May 2009) that mentions soybean pollination—quite remarkable since it is by a pediatrician writing about a completely different subject. It is also the earliest document seen (May 2009) that uses the term "self-pollinated" (or self-pollinating, etc., with or without the hyphen) in connection with soybeans.

"At the present time there are seven varieties handled by seedsmen, and some twenty-two distinct varieties are known." The varieties Mammoth Yellow, Hollybrook, and Ito San have been used in infant feeding experiments. "The other varieties are the Guelph (green), the Samarow (green), the Ogemaw (brown), and the Buckshot (black). All of these latter may be grown in the north."

"I am indebted to Mr. Frank N. Meyer, agricultural explorer for the Department [U.S. Department of Agriculture], for information concerning the use of the beans in the East... The light-colored beans are eaten in soups and the pods are sometimes picked green, boiled, and served cold with a sprinkling of soy sauce. The green varieties are often pickled in brine and eaten moist or dried with meals as promoters of appetite; the same varieties are often slightly sprouted, scalded and served with meals in winter time as a green vegetable." Also discusses soybean oil, soy bean milk (which "has a composition nearly the same as that of cow's milk" as shown in a table), "natto, tofu, miso, yuba, shoyu,..." (p. 498).

"The soybeans are sometimes roasted and then used as a substitute for coffee" (p. 499)

"The fact that the soy beans contain little or no starch suggested to Dujardin-Beaumetz that they be used as a food for diabetics. The soy bean flour has been placed on the American market, but was withdrawn owing to the fact that according to the manufacturers it contained 8 per cent. carbohydrate. It contains much less carbohydrate, however, than any of the other diabetic foods."

"As regards the use of the beans in infant feeding it seemed to me that soy bean gruel or milk, either alone or with cow's milk, might be of value in feeding several classes of cases, viz., of marasmus and malnutrition, as a substitute for milk in diarrhea, and in intestinal and stomach disorders, and in diabetes mellitus."

Note 2. This is the earliest document seen (July 2008) that suggests the use of a soybean preparation as a milk substitute for infants."

Note 3. This is the earliest document seen (Aug. 2003) concerning the actual feeding of soymilk to infants or children, or concerning a soy-based infant formula. The author was the world's first pediatrician to use soybeans in infant feeding, and did the first U.S. studies with soyfoods and human nutrition.

Note 4. This is the earliest English-language document seen (Oct. 2003) that uses the term "substitute for milk" to refer to soymilk. Note 5. This is the earliest English-language document seen (Nov. 2002) that uses the word "malnutrition"

in connection with soyfoods.

The writer had hoped to conduct experiments and make a more complete clinical report but several misfortunes attended his efforts to secure the beans. "My first crop was eaten by rats, my second moulded in the pods owing to some unusually damp weather, and insects ate about two-thirds of my last crop. Fortunately, the beans may now be obtained from Messrs. T.W. Wood & Son, Richmond, Virginia.

"So far the gruel has been prepared by soaking the beans over night, stirring to remove the envelope surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained if necessary [to make real soymilk]. This has the odor and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two. The gruel is retained unusually well and seems to be easily digested. The stools are not more frequent than with other foods. The stools are light brown in color like those from malted milk. This soy bean gruel has nearly the same food value as milk and for certain children may need further dilution. About the same size feedings should be used as if milk were being given. Five percent sugar may be added to increase the fuel value.

"I have not used the beans in a sufficiently large number of cases nor over sufficient periods of time to justify any further statements at this time, but I do feel that properly used they will be a most valuable addition to the dietary of the sick infant. Grinding them to a bean meal would simplify matters very much, and, if success attends their use, a soy bean meal could easily be prepared.

"I hope to be able to make a second report at the next meeting and have called your attention to the bean in hope that other members may try them and report at the same time."

Note 6. Pediatrician Herman F. Meyer (1960, p. x) published a long poem by Dr. John Ruhräh titled "A Simple Saga of Infant Feeding," which described the history and present status of infant feeding. Meyer described Ruhräh as a "philosopher, teacher, poet, pediatricist [pediatrician] and able historian."

Note 7. This is the earliest English-language document seen (Oct. 2001) that uses the term "soy bean flour."

The following photo of Dr. John Ruhräh (1872-1935) was taken in about 1914. Born in Chillicothe, Ohio, he was a graduate of the College of Physicians and Surgeons (Baltimore, 1894), did post-graduate work at Johns Hopkins, the Pasteur Institute, Paris (1897), and in other European schools (1900-1901), and was quarantine physician of the port of Baltimore (1898-1900), where he became Professor of pediatrics in the University of Maryland Medical School and in the College of Physicians and Surgeons.

His autograph is shown below. Address: M.D., Baltimore, Maryland.

81. Langworthy, C.F. 1910. Apendice. La soya como alimento para el hombre [Appendix: The soy bean as human food]. *Boletin de la Sociedad Agricola Mexicana* 34(20):389-92. May 25. [1 ref. Spa]

• **Summary:** This is a Spanish-language translation of USDA Farmers' Bulletin No. 58 (1897, Revised 1899). The soybean is referred to throughout as "La haba soya." It describes and gives the nutritional composition of various Japanese soyfoods, including natto, miso (3 types; *miso blanco*, *colorado*, *Suiza* [Swiss]), tofu (*Tofu o queso de haba*; *Tofu fresco*), soymilk (*leche de la haba soya*), frozen tofu (*Tofu helado*), yuba, soy sauce (*salsa de la haba soya*).

Note 1. This is the earliest Spanish-language document seen (Oct. 2012) that mentions yuba, which it calls *yuba*.

Under the name of coffee beans (*habas de café*), soybeans (*las habas soya*) are sometimes consumed in Switzerland as legumes (*como legumbres*); when they are dry and toasted, they are used as a substitute for coffee (*sustituir al café*). No mention is made of soybeans or soyfoods in Mexico.

Note 2. This is the earliest Spanish-language document seen (July 2000) that mentions tofu, which it calls *Tofu or queso de haba*.

Note 3. This is the earliest Spanish-language document seen (Jan. 2012) that mentions natto, which it calls *natto*.

Note 4. This is the earliest Spanish-language document seen (March 2009) that mentions miso, which it calls *miso*.

Note 5. This is the earliest Spanish-language document seen (Feb. 2004) that mentions soy as a substitute for coffee, which it calls *sustituir al café*.

Note 6. This is the earliest Spanish-language document seen (Oct. 2003) that uses the term *leche de la haba soya* to refer to soymilk.

Note 7. This is the earliest Spanish-language document seen (Feb. 2004) that mentions frozen tofu, which it calls "Tofu helado."

Note 8. This is the earliest Spanish-language document seen (April 2012) that mentions soy sauce, which it calls "salsa de la haba soya." Address: PhD, Office of Experiment Stations, USDA, USA.

82. Mene, Edouard. 1910. La Chine a l'Exposition de Bruxelles [China at the Brussels Exposition]. *Bulletin de l'Association Amicale Franco-Chinoise* 2(4):336-46. Oct. See p. 340-43, 346. [Fre]

• **Summary:** 1. The Chinese pavilion: In the beautiful and grandiose Universal Exposition of 1910, that a frightful fire partially destroyed, the Chinese section merits special mention. It is not an official exposition organized through the care of the Chinese administration. Rather, it is an exposition organized by five Chinese merchants. The last one, Mr. Tsu represents both soya and the ideal kite (*soja et cerf-volant idéal*).

Note: The meaning of *cerf-volant idéal* is unclear. The

Chinese have long been known for their beautiful and well-designed kites, some with long, flowing tails. However, if Mr. Tsu was exhibiting kites, he would have used the plural form of the noun. Is he saying that soy is like a high-flying kite?

These exhibitors have gathered a certain amount of indigenous and modern objects, commercial and artistic in a pavilion located in the section reserved to foreign countries (start of p. 339).

In the back of the room, to the right are displayed by Mr. Tsu, the different products extracted from one of most utilized plants in China: *Soja hispida*, Houang-teou, the soybean of the leguminous family.

One can observe plates filled with soybean seeds (*graines*), looking like little round (broad) beans (*fèves*), and some dehulled soya beans; jars filled with white soya cheese, looking like quark [tofu], cheese in round boxes, looking like Camembert [fermented tofu]; a jar with the skin of the soya cheese [yuba]; a vial with soya casein [soy protein].

A display case is filled with jars of different types of yellow, green, and black soybeans, of soya flour, of semolina, of a brownish soya coffee in bean and powder form, of bottles of soymilk, of soy oil, and of Soy [sauce], this condiment so utilized in Chinese cuisine. On a table are displayed soya pastries resembling in their shape, the Commercé madeleines [small sponge cakes shaped like sea shells], some noodles, macaroni and soya bread that is prescribed to diabetics as well as a gruel of soya flour. On the floor are placed several square soybean cakes (*tourteaux*), residue of the soya oil production, of a grey-yellow color, to be used as fertilizer. A brochure on soya-based food products, excerpted from the book *The Soybean (Le Soja)* by Mr. Li Yu-ying is being handed out through the care of the exhibitor, Mr. Tsu.

This brochure, titled: 'Soya based Food Products' (*Produits alimentaires à base de Soja*), Caseo-Sojaïne, rue Denis-Papin, les Vallées (Seine), describes these products and their preparation: soya milk, liquid or in powder form, derived from the grinding of the beans, after immersion, in water, for several hours. The grain content consisting of legumin or vegetable casein, is placed under a grindstone: one derives an homogenous, nutritive and digestible milk product. Fermented and powdered milk is produced, soya casein, extracted from the soya milk, with uses in food and in industry; soya flour, obtained by the grinding of the dehulled beans, completely deprived of their seed coat to lessen the proportion of cellulose and increase its digestibility. It does not contain any starch; soya bread, well utilized to feed diabetics; by perfecting fermentation, one makes a rather light bread, one that reminds one of rye bread; pasta / noodles; cookies, pastries, white- and pink-tinted pasta prepared with soya flour, soy sauce (Soy) with a bouquet that reminds one of burned onion that is used to enhance fish and vegetables; soya jam (*confiture de Soja*), similar

in appearance and taste to chestnut cream (*à la crème de marrons*), soya oil for food use; green vegetable soybeans (*légumes de Soja*), whose sprouts may be used as a salad. As for the soybean cakes (*tourteaux*), these are used for animal feed and fertilizer.

In China, the *Soja hispida* (the soybean), with hairy pods, with yellow, reddish, black, green, white, variegated beans, whose taste echoes the green bean, the lentil, the pea, and that has a high content of culinary oil, is grown, on a large scale, in Mongolia, in Manchuria, and in the provinces of Henan, Zhejiang, Jiangxi (*Ho-nan, Tchokiang, Chan-si et Chang-tong*). It is one of the most utilized plants from the culinary and industrial point of views.

Soy sauce, called Soy in English and in Chinese *Tsiang-yeou*, is a greatly-appreciated condiment that is prepared with yellow soybeans named *Houang-teou* and that one flavors with star anise, green anise, and grated orange rind. It is a blackish liquid, lightly syrup-like used to enhance the flavor of fish, meat, and vegetables. Another Chinese condiment [fermented black soybeans] is made with soybeans mixed with salt and ginger. In Canton, *Kiu-tsu* [*jiuzi*, Cantonese wine starter, a ferment] is made with soybeans, red rice, and leaves of *Glycosmis citrifolia*. As for soya cheese, it is made as follows (see footnote): Soak the soybeans in water for 24 hours to make them swell; drain off the water, grind while adding fresh water to form a slurry that is run through a filter. Stir it by hand, then pour it into a caldron, where it undergoes a slow cooking. Let it cool in a tub and remove and foam with a big spoon.

A thick film [yuba] is formed on the surface. It is lifted off with a round wooden stick shaped like a long chopstick (*baguette*) and it is allowed to dry on thin ropes. This skin is called skin of soya cheese [yuba]. To the remaining soymilk, add a little water mixed with calcium sulfate (*plâtre*) and several drops of nigari, which is magnesium chloride derived from the salt in salt beds.

Footnote at the end of page 342: See (1) *Bulletin of the Society for Acclimatation*, second series, volume 13, page 562, 1866, "On The production of tofu in China," by Paul Champion.

Stir in the liquid coagulant which will cause the casein in the soymilk to coagulate. Pour the warm mass into in a wooden frame or box lined internally with a fine cloth through which the liquid whey will seep. Atop the frame or box place a board loaded with weights to press the cheese which is of a grayish white color, looks like quark, and has a pea-pod taste (*à goût de pois*); with the addition of salt, this cheese will keep; without this precaution, it spoils. It is used to feed the impoverished portion of the population: often, it is fried in soya oil. Soya cheese [tofu] is manufactured on a large scale near Peking and in most of the sea ports of Southern China. It is mostly the town of Ning-po that is the center of this production. Each year, thousands of junks (*jonques*) loaded exclusively with soya cheeses leave this

town harbor to reach other Chinese harbors.

Besides cheese [tofu], the most important soya product is the oil that is extracted from its beans, mostly the yellow beans called *Houang-teou*. This yellow oil, which is siccative / drying, has a special smell and a pea-pod taste. At Kaifeng (K'ai-fong) in Henan (Ho-nan) province, at Tsinan in the Chan-tong, and at T'ai-yuan in the Chan-si, are located important soya oil manufacturing plants. But it is mostly Ningpo in the Tcho-kiang, that is the center for the production and the centralizing of soya oil. Much is also produced in Newchwang [Nieou-tchouang], and in Chefoo / Tantai (Tche-fou) in Shantung province. The soybean cakes (*tourteaux*), the by-products of soya oil processing, are a major export out of Newchwang and Chefoo; they are shipped to Swatow and Amoy to be used as fertilizer in sugar cane plantations.

These soybean cakes (*tourteaux*) are sought after as much as the beans themselves, and are to feed cattle, as are the pods, the stems and the foliage of the plant. The beans of *Hei-teou*, the black soya bean, mixed with cut up straw, are given as feed to horses and mules in Northern China and in Manchuria.

Note: This periodical was established to promote understanding and friendship among the people of France and China. Soja is mentioned on pages 341, 342, 343, and 346. Address: Dr.

83. Kato, Yogoro. 1910. Yuba no seisei [On the chemistry of the formation of yuba]. *Tokyo Kagaku Kaishi (J. of the Tokyo Chemical Society)* 31(11):1139-55. Nov. [11 ref. Jap]

• **Summary:** Contents: The surface tension of soymilk (p. 1140). Relationship between the formation of yuba and the gas in contact with the surface of the soymilk (1142). Relationship between the formation of yuba and the evaporation at the liquid surface (1143). Relationship between the concentration of soymilk and the formation of yuba: Table shows concentration vs. time for yuba to form (1144). Changes in the concentration of soymilk during yuba formation (1146). Relationship between the sequence of yuba films and their respective composition (1146). Changes in the composition of the soymilk during yuba formation and relationship between concentration of the milk and the yuba (1148). Relationship between yuba formation and temperature (1149). Nature of the soymilk after removal of oil/fat (1150). Experiment on film formation using cow's milk (1151). Formation of films on a liquid consisting of dissolved starch (1153). Summary and conclusion (p. 1153).

Note: Throughout this article, the term for "soymilk" is written *tōeki*, or "bean liquid." Address: Rigakushi.

84. Friedenwald, Julius; Rühräh, John. 1910. The use of the soy bean as a food in diabetes. *American J. of the Medical Sciences* 140:793-803. Dec. [9 ref. Eng]

• **Summary:** The article begins: "The soy bean (Glycine

hispidia), sometimes incorrectly called the soja bean, is an annual leguminous plant..." It continues with a brief but accurate history of the soy bean in Europe and the USA, a botanical description of the plant, examples of food uses such as boiled whole dry soybeans, green vegetable soybeans ("The beans are eaten as a vegetable, in soups, sometimes picked green, boiled and served cold with a sprinkling of soy sauce and sometimes served as a salad... If the beans are green, the preliminary soaking may be omitted."), soy sauce or shoyu, natto, tofu, miso, yuba, a coffee substitute, and whole dry soybeans. A brief description of the process for making tofu is given, together with nutritional analyses of tofu, and 4 varieties of soybeans. "The most striking point about the bean is that it contains no starch, or, at least a very small quantity, which is strange when one considers it resembles the various beans very closely and all other varieties of beans are extremely rich in starchy materials." An analysis of the "gruel flour from the soy bean" made by the Cereo Co., Tappan, New York, shows it to contain 14.64% protein, 19.43% fat, no starch, and no reducing sugars. "Our own experience with the soy bean in diabetes extends over a series of eight cases." The 8 cases are then described individually. Cooking directions and recipes are given for making gruels, broths, and muffins using "soy gruel flour" or "soy flour."

The authors conclude: "(1) The soy bean is a valuable addition to the dietary of the diabetic on account of its palatability, and the numerous ways in which it can be prepared. (2) The soy bean in some way causes a reduction in the percentage and total quantity of sugar passed in diabetic subjects on the usual dietary restrictions." Address: 1. M.D., Prof. of Diseases of the Stomach, College of Physicians and Surgeons, Baltimore, Maryland; 2. M.D., Prof. of Diseases of Children and Therapeutics same college.

85. Sawyer, E.R. 1910. Studies in agriculture. Series 2. The soya bean. Div. of Agriculture and Forestry, Natal, South Africa. 33 p. Reprinted from the Natal Mercury. [10 ref]

• **Summary:** Contents: 1. The agricultural romance. 2. The commercial aspect. 3. The adaptability of the bean. 4. The cultivation of the crop. 5. Soya bean oil. 6. A food for man. 7. A stock food and fertiliser (the cake is widely used as an agricultural fertiliser in the Far East). A photo (opposite contents page) shows two men standing in a crop of soy beans at the Central Experiment Farm, Cedara, 1908-09.

Concerning "Soya bean oil": "In the Far East it is largely employed for edible purposes; it is suitable for cooking, for a salad oil, and as a component in such butter substitutes as margarine. In the 'Mark Lane Gazette' for Jan. 20, 1910, it is stated that one third of the frying oil used in London kitchens now comes from the soya bean, instead of from cotton seed as heretofore" (p. 21).

Illustrations on unnumbered pages show: (1) A typical soya bean plant. (2) Botanical characters of soya bean,

with close-ups of vegetative parts, floral parts, and fruit. (3) Seeds and pods of 7 varieties of soya beans. (4) Soya bean seedlings, with roots. (5) Roots of soya bean plant, with nodules (by Blanchard). (6) Curing frame for harvesting soya beans. Address: Director, Div. of Agriculture, Natal, Durban, South Africa.

86. Shaw, Norman. 1911. The soya bean of Manchuria. *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series No. 31.* 32 p. Also published by P.S. King & Son, 2 Great Smith St., Westminster, London SW, England. [6 ref. Eng]

• **Summary:** Contents: Introductory. Varieties. The plant. Soil and climate. Cultivation. Soil infestation. Yield. Uses of the soya bean: In the Far East: Bean sauce or soy (called shoyu in Japan [whence the name “soya”] and *chiang-yu* in China), the Chinese paste *chiang* (incl. *ta chiang* {great, made with yellow soybeans} and *hsiao chiang* {small, made with soybeans and maize}), tofu (incl. firm tofu {*tou-fu kan-tzu*}, tofu curds {*tou-fu nao*, curded with calcium sulphate instead of brine}, curd skin or yuba {*tou-fu p’i*}, layers of tofu pressed in cloth [pressed tofu sheets] {*ch’ien-chang tou-fu*}, and “frozen curd” {*tung tou-fu*, tofu that is frozen then dried}), bean flour, bean refuse {okara}, bean oil for food or industrial uses. Beancake and its uses. Uses in the Western world (beancake in Europe, and bean oil in Europe). The bean oil and cake industry in Manchuria. Trade development (statistics on exports from Newchwang have been kept since 1864). Beginnings of the European trade. Bean oil and cake production in South Manchuria. Chief sources of supply. Map references. Supplementary note.

Appendixes: 1. Table showing values (in Haikwan taels) per picul of [soya] beans, beancake, and bean oil at Newchwang, 1864-1909. 2. Graph showing monthly values (in silver yen) at Dairen of beans, bean oil, and beancake, 1907-10. 3. Table showing estimated [soya] bean production of Manchuria in normal years, compiled by the South Manchuria Railway Co. in 1909. 4. Estimates of [soya] bean production of Manchuria for the last 5 years by province and territory, compiled by the South Manchuria Railway Company in 1909: Fengtien province 1,092,350 tons. Kirin province 626,500 tons. Heilungkiang province 280,250 tons. Grand total for all Manchuria: 1,999,100 tons. Estimated soya bean production in Manchuria has increased from 600,000 tons in 1906 to a peak of 1,500,000 tons in 1908, to 1,400,000 tons in 1910. Percentage contributed by various colors of soya bean in 1910: Yellow 80.1%, green 9.4%, white-eye 3.8%, black-eye 3.2%, and black 3.4%. 5. Table showing total export of [soya] beans and bean products from Manchuria, 1909. For export of soya beans: Dairen 51% of total, Suifenho [Suifenhe] 25%, Newchwang 23%. For export of bean cake: Newchwang 50%, Dairen 44%, Antung 2%. For export of oil: Newchwang 75%, Dairen 21%, Harbin

1%. The writer frequently refers to Sir Alexander Hosie’s book on Manchuria (1901, 1904).

The introduction begins: “It is only in the last three years that soya beans have become important in intercontinental commerce, and their rapid emergence from obscurity has, indeed, been one of the most remarkable commercial events of recent times. The circumstance that ‘the rise of a great export trade in beans is that fact that overshadows all others,... the soya bean thus taking at a bound a position equal to that of tea in the list of exports and, with the addition of beancake, even challenging the position of silk at the top of the list’”* (Footnote: * = “Statistical Secretary’s Report on the Foreign Trade of China in 1909”).

The “bean district *par excellence* is the upland country beyond Moukden [Mukden] where the hills... are overlaid with wind-deposited soil...”

“Cultivation: In Manchuria the beans are produced almost entirely by hand methods. The plough, which is drawn by quaintly mixed teams of oxen, mules, and donkeys, has only one handle and a rough steel-tipped cutter. The seed is sown by hand, on top of the drills, in April, and is covered by hand. A heavy hoe is used for a good deal of the turning and breaking. When the plant appears the earth is heaped up round it, so that the roots may derive the maximum of nourishment from the soil.”

“The harvest takes place in September, and the pods are usually harvested before they are quite ripe, as otherwise they are liable to burst on drying, a loss of seed being thus occasioned. The plants are pulled up by hand or cut with a straight-bladed sickle in Manchuria, and collected into small heaps in order to facilitate drying, and, when dry, the seed is separated by means of a cylindrical stone roller having longitudinal cuts on its surface, which is dragged over the plants by a mule as they lie on the threshing-floor. After this primitive threshing operation has been completed, the beans are winnowed in the usual Chinese method—that is, by throwing them against the wind. The only manure used is a compost of stable manure and earth, which is often taken from the miry pools formed in the roads—the despair of the carter but a boon to the farmer. In countries where chemical manures are used, it is only necessary to apply potash and phosphoric acid where they are lacking, for nitrogenous manure is unnecessary, owing to the property which the soya bean possesses, in common with other leguminous plants, of obtaining nitrogen from the air by means of colonies of bacteria.”

Yield: In 1867 the Rev. A. Williamson, who travelled in the upper Sungari district at the time and who appears to have been a very close observer, estimated a maximum yield of 2,000 lb., or 15 piculs, to the acre.

The Chinese paste *chiang* is not the same as the Japanese paste miso. *Chiang* “is made by farmers and eaten with fish, meat, and vegetables, while the more expensive Chinese soy [sauce] is only made by wealthy families and

restaurant keepers and is not consumed by the very poor. There are two kinds of *chiang*: *ta* (great) and *hsiao* (small).” Describes in detail how each is made. Great *chiang* is made from yellow soybeans, salt, and water. Small *chiang* contains a small amount of maize (p. 7).

Industrial uses of bean oil: (1) As an illuminant, where it has not been superseded by kerosene oil. One advantage is that “no lamp is needed to hold it, the wick being inserted into the basin or plate containing the oil.” (2) As a lubricant, bean oil is used to a very considerable extent in north China and Manchuria “for greasing axles and parts of native machinery” (p. 8-9).

In China, bean oil “is used as a substitute for lard, in cooking. Although it is inferior to rapeseed and sesamum oils for this purpose, these oils cannot compete with it in point of price... In spite of its unpleasant characteristic odour and unpalatability, the poorer classes in China consume it in its crude state, but among the rich it is boiled and allowed to stand until it as become clarified” (p. 8). In Europe “Refined bean oil may be used as a salad dressing in place of other oils (but, owing to its unpleasant odour, is usually mixed with an oil of animal origin or with rapeseed oil), or in the manufacture of margarine, when a greater percentage of soya oil than of copra oil is allowed” (p. 10).

Traditional methods of pressing out the oil yield only about half of that present in the seed (9% of the weight of the beans); the rest is left in the cake, and this distracts very much from its fertilizing value. “By gasoline extraction the beans give up practically all their oil, which, as refined by this process, is a clear, pure liquid, hardly resembling the muddy, dark oil produced in the old way” (p. 14).

Photos on unnumbered pages show: (1) Seven varieties of soya beans: Large black, small black, large flat black, small flat black, two green, and two yellow. (2) Soybean root nodules. (3) A massive granite roller for crushing beans. (4) “Steaming vat with grating on which [soya] beans are placed in gunny bags during the steaming process.” (5) Native bean press, showing cakes in receptacle and log wedges driven in to press out the oil. (6) Modern bean press [hand turned screw?] set up in bean mill. (7) Oil-motor and crusher. (8) Modern crushing machinery. (9) Piles of beans in sacks awaiting loading onto trains at Changchun. (10) Color fold-out map titled [soya] “Bean districts of Manchuria.” A schematic diagram (in the form of a rhombus / diamond) shows the probable relationships of the different groups of soya beans based on their color. A beautiful map, approximately 17 by 22 inches, is attached between page 26 and page 27. “Wuchang” [not Wochan] is in the area labeled “Yellow Beans” in the map. Other labeled growing areas on the map include “Grasslands,” “White eye,” “Black beans” [soy], “Maize” and “Green beans.” The major railways, rivers, roads, and towns / cities (with their Chinese characters) are shown. The major soybean markets (underlined) are Fenghwa / Maimaikai, Kungchuling,

Changtufu, Tungkiangtze, Sinminfu, Tienchwangtai, Newchwang, Kaiyüan, Tiehling, Mafengkow, Moukden, Takushan, Antung, Harbin, and Shwangcheng.

Shaw finished writing this yellow book on 31 December 1910.

Note 1. This is the earliest document seen (July 2000) that mentions the South Manchuria Railway Company in connection with soybeans. This company was run by Japan. According to the *Encyclopedia Nipponica* (vol. 22, at “Minami”), the South Manchuria Railway Company (*Minami Manshu Tetsudo K.K.*) was established in 1905 based on the Portsmouth Treaty ending the Russo-Japanese War; Japan took over the rights to the railway from Russia. The company started to actually run the railway in 1907.

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term “frozen curd” to refer to dried-frozen tofu.

Note 3. This is one of the earliest English-language documents seen (Sept. 2006) that repeatedly uses the word “bean” (not preceded by the word “soya”) to refer to the soya bean.

Note 4. This is the 2nd earliest English-language document seen (Oct. 2012) that uses the term “tou-fu p’i” (regardless of capitalization or hyphenation) to refer to yuba.

Note 5. This is the earliest English-language document seen (April 2012) that uses the term *chiang-yu* to refer to Chinese soy sauce. Address: 4th Asst., Custom House, Dairen.

87. Abel, Mary Hinman. 1911. Beans, peas, and other legumes as food. *Farmers’ Bulletin (USDA)* No. 121. 38 p. See p. 11-13, 17-20, 35-36. Revised Nov. 15, 1906. Reprint, Sept. 30, 1911. [1 ref]

• **Summary:** This is a reprint of the 1906 revised edition. The information about soy is unchanged. On pages 17-18 is a section titled “The peanut” (*Arachis hypogaea*). On pages 35-36 is a section titled “Peanuts and peanut preparations” which includes a subsection titled “Peanut butter.—The roasted peanut ground to an oily meal has somewhat the consistency of butter and is now marketed under the name of peanut butter. Salt is perhaps quite generally added during the process of manufacture. Water is also sometimes added—usually before serving. Peanut butter is used like other butter to spread on bread, for the making of sandwiches, and in the preparation of a number of made dishes. Many persons like its flavor when it is fresh and of good quality, and it seems fair to say that the use of this and other sorts of nut butter is growing. As regards composition, peanut butter, which is essentially the ground roasted peanut, contains more protein and less fat than ordinary butter. Little is known regarding the digestibility of peanut butter, but the fine grinding would naturally seem to be of an advantage. Judged by Jaffa’s experiments with a ration containing peanuts, it would be well digested. (See p. 26)

“Peanut oil.- At present the American peanut crop is not large enough to more than supply the roaster and the confectioner, hence the expressing of oil from the peanut has never become established here, but in Europe large quantities of the African-raised nuts are used for this purpose. The shelled nuts contain from 30 to 50 per cent. of oil. The oil is said to be of fairly good flavor, but inferior to olive oil. In 1899 some 80,000 tons of the nuts were used in Marseille alone for oil making. The unhusked nuts are passed between a pair of rapidly revolving grooved rollers and the shells and red inner skins are then removed by a winnowing process with the use of air currents and oscillating sieves. The cleaned kernels are ground and enveloped in fibrous mats and pressed to extract the oil.

“According to Brannt, “the first cold pressure yields 16 to 18 per cent of very fine table oil. The residue is then broken up, moistened with water, and again cold pressed, yielding 7 to 8 per cent of more or less valuable oil, used for table purposes and burning. The residue from this is heated and then pressed, giving 7 to 8 per cent more oil, unfit for table use, but used for soap and lubricating.” The grades of oil are sold as salad oil alone or mixed with olive oil.

“Peanut cake.- When the oil has been pressed from the ground nut, the mass remaining, called oil cake, is used for fattening. Some experiments have also been made as to its food value for human beings. Containing, as it does, 47 per cent of protein and 9 per cent of fat and starch, and costing about 5 cents a pound, this attracted the attention of German scientists. The oil cake broken up and cooked a long time in water and eaten as a soup or porridge in a hospital. Most of those who tried it ate it with apparent relish, not once only, but again and again. No effort have been made to ascertain to what extent it was digested, and the use of the cake does not seem to have passed the experimental stage.”

88. Barrett, O.W. 1911. Rice ally crops. *Philippine Agricultural Review* 4(11):592-98. Nov. See p. 594-96. [1 ref]

• **Summary:** The section titled “Soybeans” (p. 594-96) begins: “Probably every tourist who has visited any of the cities of Japan or China has noticed in the markets these peculiar blocks of a grayish white, jelly-like substance and wondered whether they were really good to eat, but comparatively few have ever tried there the three or four varieties of vegetable ‘cheese’ prepared from the soybean*.”

*Footnote: A 3/4 page footnote, extracted from USDA Farmers’ Bulletin No. 58 by Langworthy, discusses five preparations commonly made in Japan from the soybean: natto, tofu or bean cheese (eaten in the fresh state or frozen), miso, yuba, and shoyu.

“Experts in threpsology, the new science of nutrition, seem to be in accord on the fact that in dietary matters two kinds of food are at least four times as good as one... Recently the European food experts have realized the high

nutritious value of the soybean and a factory has been established near Paris [by Li Yu-ying] for the manufacture of various food products from this wonderful seed.”

“Now is the time for the Philippine Agriculturist to take up soybean culture in earnest, and to develop it in the same way, even if not to the same degree, as our neighbors across the way have been doing for centuries. The fact that there are practically no seeds of this valuable crop at the present in the Philippines is a sad commentary on the progressiveness of the Philippine farmer; but it is never too late to learn” (p. 596). Address: Chief of the Div. of Experiment Stations, Philippines.

89. Jingu Shicho. 1911. Koji ruien [Encyclopedia of early references to things Japanese]. Tokyo: Koten Kokyusho. Revised editions publ. in 1931 and 1971 by Yoshiko Bunkan; 51 volumes. Key volumes are *Inshoku* (#39) and *Shokubutsu* (#50). [50+ ref. Jap]

• **Summary:** Koji means “ancient things” or “origins.” Rui means “varieties” or “description.” En means “dictionary.” This is one of the best books for doing historical research on Japanese culture, including foods. The book is divided into 30 major subject areas, such as Food and Drink. Within that section all basic Japanese foods and beverages are listed. After each one is listed many of the important early works in which that food is mentioned, with a quote of what is said. Furigana are used liberally to assist with pronunciations of hard-to-pronounce early document names and terms. Compiled from 1896 to 1914, volume 1 of the original edition is dated 1908. The works cited are from ancient times to 1867. The final volume is an index to the whole.

The volume on Food and Drink is titled *Inshoku-bu* (Vol. 51). Whole soybeans, p. 229-35. Black soybeans, p. 235-36. Green soybeans (*ao-daizu*), p. 236-37. Green vegetable soybeans (*edamame*), p. 239-40. Soybean cultivation, p. 240-42. Soybean utilization, p. 243-47. *Daizu-ko Mochi*, p. 555. *Amazake*, p. 695-97. *Shirozake*, p. 697-98. *Hishio* (Chiang), p. 836-40. *Shoyu*, p. 840-49. *Miso*, p. 851-68. *Kuki* (fermented black soybeans), p. 868-71. *Natto*, p. 871-74. *Tofu* (incl. *Dengaku*), p. 984-1005. *Yuba*, p. 995-96.

90. Sawyer, E.R. 1911. *Cedara memoirs on South African Agriculture*. Vol. II. Containing reports on feeding crops and livestock experiments in South Africa. Natal/Pietermaritzburg, South Africa. 371 p. See p. 131, 177, 183-218. Report X. The Legumes as Grain and Oil Crops: Soya Beans. [15 ref]

• **Summary:** A superb, early overview of soybeans and their uses in South Africa and England. Contents: An agricultural romance. Early experiments with the soya bean [in Europe and South Africa]. Export trade from Manchuria. The course of prices. Consumption in Great Britain. Botanical character. The commercial aspect. History of the oil market during 1910. The adaptability of the bean. Germination

of seed. Climatic requirements. Classification of varieties. Variety tests at Cedara: Black seeded (Buckshot and Nuttall tested in 1906), brown seeded, green seeded (Samarow and Guelph), yellow seeded (Mammoth and Hollybrook, planted Nov. 1908). The cultivation of the crop. Times of planting. Distances of planting. Manure experiments at Cedara. Nodule formation and composition of the plant. Harvesting soya beans. Storage of seed. Comparative yields of grain. Soya bean oil. Uses of the oil [for cooking, paint, soap, etc.]. Soya beans as human food (incl. natto, tofu, miso, yuba, shoyu {p. 209-11}). Digestion experiments [on humans in Japan]. Milling experiments. Soya beans as stock food and fertiliser. Live-stock experiments. Soya cake as fertiliser. Soya bean as green forage.

Concerning industrial utilization: The Vice-Consul-General at Yokohama writes that “the annual value of fertilisers employed in this country (Japan) amounts on an average to about £8,000,000 represented in equal proportions by artificial fertilisers and soya bean cake.” The year 1908 was exceptional, however, in that the value of the bean cake was 3.5 times that of the artificial fertilizers.

During 1910 the linseed oil reached its highest price in 50 years. Soya oil, now produced in large amounts in Manchuria after the Russo-Japanese war took its place. It was used in making paints, candles, and soaps. “Soya bean oil has been found eminently suitable for the soap-makers’ purpose on account of its low content of free fatty acids and of unsaponifiable matter or impurities. In the latter respect it has been shown superior to any of the other oils or fats of commerce, whether of vegetable or animal origin. The glycerine, which is secured as a by-product of soap and candle manufacture, is subsequently distilled for explosives, such as dynamite, blasting gelatine, cordite, etc., and for various purposes in the arts, for filling gas-metres, for the manufacture of inks, printers’ rollers, etc. The residue from the distillation of glycerine is used in the manufacture of boot blacking.”

Concerning germination (p. 191): At Cedara: “The first crop was planted in 1903, and a maximum yield of 920 lb. of grain obtained per acre. In the following season, characterized by unfavourable weather conditions, the heaviest yield on a new series of plots was 780 lb. per acre. A third season’s trial on the same ground, however, witnessed a marked increase with local seed, the heaviest crop totalling 1,252 lb. of grain.”

Concerning soybean cultivation in British colonies in Africa (p. 192): “Early last summer the late Sir Alfred Jones shipped to West Africa soya beans for experimental purposes, and it was subsequently reported by Mr. A.G. Turner, who was entrusted with a special mission to encourage this culture on the west coast, that the soya bean could be successfully cultivated throughout the Gambia, Sierra Leone, Nigeria, and the Gold Coast Colony, but that the yield to the first experiment had only been from six to

eight bushels per acre, there having been a considerable loss owing to faulty germination. Later results, however, were phenomenally successful.”

Concerning soybean trials in South Africa (p. 192-93): “During the past year favourable results have been received from Umzinto [from Messrs. Archibald and Co., 52 miles south of Durban; elevation 300 feet], Nel’s Rust Estate [64 miles north of Durban; elevation 2,710 feet], Nottingham Road [elevation 4,807 feet], and Naval Hill [Mr. J.R.T. Clouston of Garrow planted a few acres in 1908], Colenso [elevation 3,200 feet], and Cedara [82 miles by rail from Durban; elevation 3,540 feet; a number of varieties were tested in 1906] in Natal; and from Barberton and Pretoria in the Transvaal.”

Concerning comparative yields (p. 203): “As a grain producer, the soya bean compares very favourably with other leguminous crops, such as field beans, peas, etc. At Cedara no other legume has produced, with chemical manures only, so heavy a yield of seed; and no other legume, except the lupine, has showed itself so much to be depended upon as a grain producer.” “Land that will produce 10 muids of maize per acre should yield at least six muids of beans after the second year’s cultivation,…”

Concerning human digestion experiments (p. 212): “The general opinion of Japanese investigators, and others familiar with Oriental dietetics, is that the protein in articles of food prepared from soya beans is in a very available form, and that these preparations are most valuable foods.”

Five photos show various men standing in a crop of soya beans and in some of the variety plots at Cedara (1909-11). An illustration (line drawing) shows a curing frame for soya beans.

Tables show: (1) Yields in lb. per acre of soya beans sown at different times, during 3 years (19-3-04 to 1905-06). For each year is given: Date of sowing, date of harvest, yield of grain and straw, and manures used (superphosphate, gypsum, and potash). The variety tested was Henderson’s Early Green (Guelph) (p. 198). (2) Results of manure experiments with soya bean (Early Green) in lb. per acre. Sown 4 Nov. 1904. Harvested 13 March 1905. Increasing yields “may be attributed to the association of nitro-bacteria, the benefits of constant cultivation, and the accumulation of humus and residues of fertilizers” (p. 200). (3) Feeding value of soya bean cakes for manure, based on experiments by Messrs. Lever Bros., Port Sunlight, Liverpool (p. 215).

Note 1. This is the earliest document seen (June 2004) that mentions the use of a soy oil derivative (glycerine) in printing inks.

Note 2. This is the earliest document seen (May 2004) that mentions the use of soy oil to make candles (one of two documents).

Note 3. This is the earliest document seen (June 2004) concerning the use of soy oil (or the glycerine derived from it) to make explosives.

Note 4. The next section of this report (p. 218+) is about ground nuts (*Arachis hypogaea*). Address: Director, Div. of Agriculture and Forestry, Natal; Principal, Cedara School of Agriculture; Formerly Asst. Secretary of Agriculture, Southern Rhodesia.

91. Ward, Artemas. 1911. The grocer's encyclopedia—Encyclopedia of foods and beverages. New York, NY: Published by the author. 748 p. Illust. (color). 29 cm.

• **Summary:** Soy-related entries: Bean (p. 49-54): “The bean of European history is the Broad or Windsor variety,...” “The principal beans of United States cultivation are the Kidney and Lima, both of them believed to be native to South America.

“The Kidney Bean is the Haricot of the French and in Great Britain is sometimes called the French bean.” The many varieties can be classified into “tough podded” and edible podded.” “The ‘tough podded’ class produces the bulk of the dried beans of commerce, variously known as ‘Kidney Beans,’ ‘Navy Beans,’ ‘Marrow Beans,’ ‘Black Beans,’ ‘Turtle Beans,’ etc., in many colors, shapes and sizes.” “‘Flageolets’ are cultivated with special regard to the consumption of the fresh seeds or beans.” To the “edible podded” class of kidney beans belong Wax or Butter Beans, the Cranberry Bean or Red Speckled Bean, String Beans, Snap Beans, French Beans. “Pea Beans are the Cowpeas of the agriculturist.” “Among numerous other ‘special’ varieties are the Soy Bean (which see), Asparagus Bean, Frijole, Lab-lab (or Egyptian Kidney), Red Bean, and Scarlet Runner.” Asparagus Beans are known as *Tou Kok* by Chinese gardeners in California.

“Catsup, Catchup, Ketchup: a word derived from the name of an East Indian pickle, which was formerly applied specifically to the boiled spiced juice from salted mushrooms, but is now freely attached to various sauces (sold both bottled and in bulk) which consists of the pulp—bottled, strained and seasoned—of various fruits, as tomatoes, green walnuts, etc.” Note: At “Catchup” and “Ketchup” we are told to see “Catsup.”

Locksoy ([Lock Soy], p. 346): “Rice boiled into a paste and drawn into threads, imported from China. It is used to thicken soups.”

Nuts (p. 412-13): A table shows the nutritional composition of all major American nuts, including almonds, chincapin [chinquapin] or water chestnut, chufa (earth almond), cocoanut, peanut, and peanut butter. “Many special nut foods, such as malted nuts, meat substitutes, etc., have been devised and extensively advertised by manufacturers for general dietetic use and for the special needs of vegetarians and fruitarians. It is said that some of these products contain soy beans, but apparently the peanut is very important in their composition.

Sauces (p. 552-53): In bottled sauces, vinegar is the most common liquid ingredient. “Commercial sauces of the

Worcestershire kind, if of good quality, generally have Soy (which see) as their chief character ingredient. A typical formula of Worcestershire-style includes, in addition to Vinegar and Soy, a considerable percentage of lime juice, onions and tamarinds and small quantities of garlic, fish (as anchovies or pickled herrings), red chilies and spices. The product, after cooking, is strained through fine hair sieves. Leicester Sauce resembles Worcestershire in general characteristics but is less pungent.”

Soy (p. 576): “A brown sauce, valuable to the commercial sauce market, made from the Soy Bean, a native of Southeastern Asia [sic] and widely grown in China and Japan. The beans are boiled, mixed with ground wheat or other grain, salt, etc., and allowed to ferment for a month or 6 months. The liquid is then strained off and clarified. Molasses is frequently added. In appearance it resembles Worcestershire Sauce, of which it is an important ingredient. It should not be too salt [salty] or too sweet, and although thick and syrupy, should be clear. When shaken in a bottle or glass it should, if it is genuine, leave a bright yellow film on the glass. Being a very desirable article, it is often counterfeited.”

Soy bean (p. 577): “Commercial and government circles, both in Europe and this country are devoting increased attention to the cultivation of the Soy Bean as a food product, as it contains a large percentage of protein and a fair amount of fat, thus resembling meat in general nutritive value. The cell-walls of the raw bean are very tough, but thorough cooking makes it readily digestible. Boiled with bacon and other fatty broths until soft and then seasoned, the result is a vegetable dish very pleasing to the average palate. If the beans are dry, a preliminary soaking to remove the skins is necessary.

“The Soy Bean is largely consumed in Japan, China and other parts of Asia as an adjunct to rice and other foods, taking the place of meat in the popular dietary. It is most popular in these countries in fermented form, the best known types being *Shoyu* or Soy Sauce; *Tofu*, a kind of cheese; *Miso*, Soy Bean ‘Milk’ [sic]; *Yuba*, the evaporated product of ‘Miso’ [sic], and *Matto* [sic, *Natto*], a product obtained by simple fermentation of the boiled beans. The various degrees and styles of fermentation serve the double purpose of rendering the beans more easily digestible and producing new flavors, just as by the fermentation of milk and cream we produce the different flavors of cheese.

“The plant is an annual, growing chiefly in bush form...” The different varieties are classified principally by the color of the beans: “Black, Yellow, White and Brown,... Types of all these four classes are grown to some extent in Germany, Austria, and Switzerland, and the first three also in this country, in North Carolina and other Southern States. Under favorable conditions a single plant may bear a hundred or more pods.

“Because of the fact that the beans contain little if any

starch, they have been recommended as a desirable food for diabetics, and Soy Bean Bread and Soy Bean Meal are prepared for that purpose in Paris. The dried beans are also used in Switzerland and elsewhere as a coffee substitute.” An illustration shows the top of a soy bean plant, with leaves, pods, and flowers.

Note 1. This book is full of fascinating information about the food system in the USA in 1911, with entries such as cold storage (first attempted in 1860, it has grown to extraordinary proportions), coloring matter (great improvements, no longer harmful), ice and refrigeration (ice manufacture dates from about 1870; today nearly 200 companies produce ice for general sale, mostly using the compressor and anhydrous ammonia). Dictionary of food names in five languages (English, French, German, Italian, and Swedish, p. 710-724) and a dictionary in English of “Culinary and bill-of-fare terms” (p. 741-45).

Note 2. The author, Artemas Ward, lived 1848-1925. His father was Henry Dana Ward (1797-1884), his grandfather was Thomas Walter Ward (1758-1835), and his great-grandfather was Artemas Ward (1727-1800), the first Commander-in-Chief of the colonial troops before the arrival of George Washington (a little-known Virginia planter) on 3 July 1775. Thereafter he served as second in command after Gen. Washington and was a Major General in the American Revolutionary War. Address: Formerly (from 1874) founder and editor of *The National Grocer*, 30 Union Square, New York.

92. Beltzer, Francis J.-G. 1912. *Industries du lactose et de la caséine végétale du soja* [Industries producing lactose and soy vegetable casein]. Paris: Librairie Bernard Tignol. 144 p. Undated. (Bibliothèque des Actualités Industrielles, No. 144). [17 ref. Fre]

• **Summary:** Contents: Preface. Part I: The lactose industry (p. 9-95; 4 chapters). Part II: Vegetable milk, vegetable casein, and products from soybean seeds. Introduction. 1. Vegetable milk (*Le lait végétal*; soymilk), microscopic examination of vegetable milk. 2. Vegetable cheese (*Le fromage végétal*; tofu). 3. Industrial uses of vegetable casein, proximate analysis of soybean seeds, quantity and dosage determination, the price of soybeans, price of recovery of vegetable casein, industrial production of vegetable casein, cleaning the soybeans, extraction of soy oil, extraction of soy casein. 4. Plan and installation of a factory for processing (10 tons/day of) whole soybeans [to make industrial vegetable casein], estimate and specifications for special materials, general materials, the buildings, price of recovery of vegetable casein, industrial uses of vegetable casein. Illustrations (line drawings) show: (1) Microscopic view of soymilk globules. (2) Microscopic view of soya bean tegument (exterior). (3) Schematic drawings (cross section and overview) of a factory for making vegetable casein.

Matagrín (1939, p. v) states that with this book, Francis

G. Beltzer, a practical chemist, became a major force in visualizing new industrial uses for the soybean in the West.

The Preface notes that in Indochina, vegetable milk and vegetable cheese made from the soybean form the base of the people’s nutrition. Cow’s milk is largely unknown, and the people raise and nourish their children largely with soymilk. Tofu serves equally for the current nourishment of the poor (p. 6).

The Introduction (p. 101-07) notes that soy protein is a globulin, called glycinin or vegetable casein (*caséine végétale*). Osborne & Clapp submitted this substance to acid hydrolysis and found its composition, which is very rich in glutamic acid (p. 102). Soy flour (*farine de Soja*) contains little starch but a large amount of nitrogenous materials, similar to gluten; it is widely used in making bread for diabetics. It can also be used as the basis of foods that are rich in protein and very nutritious, as for colonial or European troops (p. 103).

Soy sauce (*Soja fermenté*) is made in Japan from a mixture of soy and wheat (*koji*). The number of brewers (*brasseurs*) of soy sauce exceeds 12,000 in the entire Japanese Empire, furnishing more than 2,500,000 hectoliters of this condiment (p. 103).

A Chinese factory has been founded on the outskirts of Paris (at Vallées, near Colombes) for the production soy-based food products (*produits alimentaires à base de soja*). This factory currently makes *Caséo-sojaïne* [tofu] and the following food products: Soy flour (*Farine de soja*), soy bread (*Pain de soja*), soy sauce (*Sauce de soja*), soymilk (*Lait de soja*), fermented soymilk (*Lait de soja fermenté*), soy cheese [tofu] (*Fromage de soja*), soy confections (*Confitures de soja*), etc. The Journal, in its issue of 9 Jan. 1911, under the title “*Une usine chinoise fonctionnant dans la banlieue parisienne* [A Chinese factory is operating on the outskirts of Paris]” gives some details (p. 106).

In our colonies in Indo-China, the indigenous people have long prepared soymilk, tofu, and several other foods. Soymilk is used like regular milk for feeding babies. Soy cheese, when cooked, is analogous to gruyere cheese; fresh soy cheese resembles our goat cheese. Many Europeans are now preoccupied with making the best of the abundant nutritive principles found in the soybean. One can eat green vegetable soybeans (*Les fruits verts*) like green peas (*pois verts*). In Annam and Japan a sauce is also made from soybeans; its use has spread from East Asia just like that of tofu (*fromage végétal*) (p. 107).

The introduction into Europe and France of soyfoods (*aliments retirés du Soja*), especially soymilk and tofu, will enable us to combat periods of scarcity of animal milk and periods when the prices of certain foods are high. Will the substitution of vegetable casein for milk casein enable us to likewise conserve milk for food use instead of delivering it to industry? (p. 107).

Chapter one, “Soymilk” (p. 108-13), discusses the work

of the Japanese chemist T. Katayama (1906) with soymilk and notes that it can be homogenized and condensed. Illustrations show a microscopic view of the globules of soymilk and of okara. The absence of starch in soybeans is a very positive characteristic.

Chapter two, "Tofu" (p. 114-18), notes that in Cochin-China, calcium sulfate is called *Tchack-kaou*, and there are three main varieties of tofu: (1) The fermented variety, which is gray or yellow in color, has a piquant taste and resembles Roquefort cheese. (2) The white salted variety resembles goat's cheese. (3) The baked (*cuite*) or smoked variety resembles gruyere cheese and keeps as well as the salted variety.

Chapter three, "Industrial uses of vegetable casein" (p. 119-32), observes that the oil in soybeans must first be removed by pressing or extraction. A table (p. 120) gives the chemical composition of soybeans from Laos and Cochin China, Tonkin, and China and Manchuria. They contain 17.64 to 18.28% oil. In Indochina a food which Beltzer calls *La caséine végétale en lames* ("vegetable casein in sheets" = yuba) has a rather high oil content—about 25-28%. There follows a section (p. 126-32) which contains details on industrial production of soy casein. Chapter four, "Design and installation of a factory for processing soybeans into industrial vegetable casein," describes each piece of equipment and its cost, itemizes the costs of general and special materials plus, buildings and working capital. Also includes a detailed schematic diagram (p. 136-37) with three production lines, and both top and side views. Finally, it lists expenses, income, and profit (p. 139). The last section, applications of industrial vegetable casein, includes paints, paper coatings, silk and artificial textiles, Galalith, and waterproofing of textiles and straw hats. The book contains no bibliography, few footnotes, and no mention of the work of Li Yu-ying—from whom the author appears to have borrowed much.

Note: Although this book is undated, all major sources (except a Seattle Public Library bibliography) give its date as 1912. Address: Ingenieur-Chemiste-Expert, Professeur de Chimie Industrielle.

93. Friedenwald, Julius; Ruhrah, John. 1913. Diet in health and disease. 4th ed. Thoroughly revised and enlarged. Philadelphia, Pennsylvania: W.B. Saunders Co. 857 p. Illust. 24 cm. [4 soy ref]

• **Summary:** The section titled "The soy bean" (p. 124-26) states: "This bean (*glycine hispida*), sometimes called the soja bean, is an annual leguminous plant extensively used as a food in China and Japan. Until recently it has been regarded as a botanical curiosity in the Occident. It has recently been extensively used in America as a forage crop and to improve the soil if plowed under... There are a large number of different varieties, which vary in size, shape, color, and length of time they take to mature. Some are

grown exclusively for the oil they contain, and it is used for culinary, illuminating, and lubricating purposes. The light-colored beans are eaten in soups, and the pods are sometimes picked green, boiled, and served cold with a sprinkling of soy sauce. The green varieties are often pickled in brine and eaten moist or dried with meals as appetizers; the same varieties are often sprouted, scalded, and served with meals in winter as a green vegetable. The bean forms the basis of the so-called soy sauces, used as a condiment all over the world. The Oriental races most frequently eat the bean, in more or less cheesy-like foods, which are prepared from it. The most common of these are natto, tofu, miso, yuba, and shoyu. Natto is a sort of bean cheese made by boiling the beans until they become soft and then placing the resulting mass in a warm cellar where it ferments. Tofu is made by soaking the beans in water, crushing between millstones, and boiling in about three times their bulk of water. The protein is precipitated and the resulting cheese eaten. The white milky liquid of the above has nearly the composition of cows' milk, and tastes something like malt. It may be used in infant feeding to advantage (see same).

"Americans may eat the beans in numerous ways described under the head of soy bean cookery in the recipes at the end of this book. The bean is of particular value in diabetic diets (see same). It may be used to increase the protein of the diet.

There are variations in the composition of the different varieties." A table shows the chemical composition of yellow soy beans grown in the USA, both as is and calculated on a water-free basis. "The Cereo Company of Tappan, New York, have made a soy bean flour which is useful." Its composition is given. "The percentage of protein in this flour is almost one-third greater than the percentage of protein in the whole beans. This is caused by removing the coarse fibrous hulls which contain little protein.

"Vegetable food of such composition certainly is remarkable when compared with round beef, medium"—whose composition is given.

Soy flour can be used as a gruel, in broths, and in making biscuits. A table (p. 126) shows the "Composition of fresh and dried legumes (incl. soy beans, cow peas, chick-peas, peanuts) with that of other foods" (Based on Abel, Farmers' Bulletin No. 121 [1900, p. 17]).

The section on "vegetarianism" (p. 130-31) is the same as that in the 1909 edition (p. 113-14).

In the chapter on "Infant feeding," the section on "Other food for infants" has a subsection on "The soy bean" (p. 297-98) which begins: "In certain conditions the soy bean... is of great value. In cases when milk is badly borne, in certain forms of intestinal disorders, in diarrhea, and especially in the convalescence after diarrhea, in certain cases of marasmus and in malnutrition, the soy bean flour, properly used, is of great value. Each ounce contains 13 grams protein and 120 calories." A table shows the composition when

mixed with various amounts of water. Recipes for making gruels are given.

In the chapter on "Diet in disease," in the section titled "Diseases in which diet is a primary factor," is a subsection on "The soy bean" (p. 592) states: "The bean contains about 8 per cent. of sugar and no starch, and furnishes a large amount of available protein and fat." "A patient on a strict diabetic diet, who is excreting a certain amount of sugar, will excrete less sugar when the soy bean is added to the diet. It seems to be of particular value in severe cases. In addition to this action, it is a very valuable food, both on account of its nutritious properties and owing to the fact that it may be prepared in a number of different ways, and so serves to vary the diet."

In the section on "Diabetic Foods" (p. 601-02) is based on Winton (1906) and contains the same information, including that about The Health Food Company of New York.

In the chapter on "Recipes" is a section on "Bread" (p. 740-41) which includes whole-wheat bread, zwieback, and bran muffins for constipation. The same chapter has a section on "Soy bean cookery" (p. 766-69) with the following recipes: Introduction, gruels, broths, muffins, nut-cakes, soy bean cakes, breakfast food (like oatmeal), pancakes, soy bean cheese ("In Seattle, Washington, and other places in the West we are informed that tofu is made by the Japanese and sold to the Oriental residents"). Goff (1911) offers the following: Grilled soy bean [dry roasted soynuts], [whole] soy beans with butter, soy beans au gras (fried with onions and fat), bread or cakes of soy beans.

Note: Julius Friedenwald lived 1866-1941. John Ruräh lived 1872-1925. Address: 1. Prof. of Gastro-Enterology; 2. Prof. of Diseases of Children. Both: College of Physicians and Surgeons, Baltimore, Maryland.

94. Nichibei Shinbun-sha (Nichi-Bei Shinbunsha). 1913. Nichi-Bei nenkan [Japanese-American yearbook. No. 9]. 650 Ellis St., San Francisco, California. 716 p. Reprinted in 2001-02 in Tokyo by Nihon Toshō Senta. Series: Nikkei Imin Shiryōshū. Dai 5-kai [Collected Documents on Japanese Emigration. No. 5]. [Jap; eng]

• **Summary:** This book is read and numbered from "back to front" compared with typical English books; it is mostly (99%) in Japanese. The English-language title page reads: *The Japanese American Year Book*.

The book is divided into 13 parts, each numbered separately. Contents: (1) Front matter (incl. how this book was created) (5 p.). (2) Table of contents, general (4 p.). (3) Table of contents, ads (4 p.). (4) Photos (black and white on 12 unnumbered pages). (5) Graphs and charts on 4 unnumbered pages: Three pie charts for 1912: (A) In which U.S. states do Japanese live. (B) Occupations of Japanese in USA. (C) Japanese in USA by gender. Two pie charts (D-E). Increase and decrease of Japanese population by gender. (F)

Bar chart: Agricultural land use by Japanese by state. (G) Agricultural crops grown by Japanese. (6) Photo of the site to be of the Panama-Pacific International Exposition (1915) in San Francisco. (7) Two maps: Map of the United States. Map of California (2 p.). (8) Advertisements (A-1 to A-18). (9) Front part (p. 1-152), including general information about America, Japanese in America, U.S. and agricultural census data, etc. (10) Ads (p. 1-16). (11) Back part (p. 1-142). (12) Ads (B-1 to B-64). Appendixes: (13) Table of contents for directory of places where Japanese live in America, by state, and within each state by city: In Japanese (2 p.). In English (2 p.). (14) Directory of Japanese living in America, interspersed with ads (p. 1-228). (15) Ads (p. 1-50). (16) Copyright page.

In a table (p. 57), one vertical line gives soybean production statistics in Japan from 1905-1909 (five year average): Area: 464,021 *cho* (1 *cho* = 2.45 acres; so 1,136,851 acres). Production: 3,766,962 *koku* (1 *koku* = 180 liters = 47.6 gallons = 308 lb = 5.13 bushels; so 1,932,452 bushels). Average yield 0.87 *koku/tan* or *tampo*. Note: Something seems to be wrong with these soybean statistics. The yield of Japanese soybeans seems too low; only about 1-2 bushels per acre.

A table (p. 92) shows Japanese population in the top 8 U.S. states in 1912. There are 7 columns: Male adults, female adults, male children born in USA, male children born in Japan, female children born in USA, female children born in Japan, and total. The totals are: California: 58,555. Washington: 16,037. Colorado 3,556. Oregon 3,518. New York 2,002. Idaho 1,392. Utah 1,390. Montana 972.

Individual lines in various tables (p. 115-150) show tofu, miso and shoyu makers in the United States by state, and within California by city. There are 7 columns: Location, total no. of shops, no. of owners, investment (\$), sales (\$/year), workers, salary (\$/year). The number of tofu makers by state is: California 28. Utah (Ogden) 1. Idaho 2. Colorado (Denver) 2. Oregon 1. Washington 9. There are also 2 miso makers in Los Angeles and 1 shoyu maker in Oregon. Columns 1-2 are filled out for all entries, columns 3-4 for all California entries, and columns 5-6 for about half the California entries.

A table (p. 26-27) shows import tariffs on goods from Japan. These include: Soybeans \$0.45/bushel. Shoyu, miso, deep fried tofu pouches (*aburage*), dried frozen tofu (*Koyadofu*) and yuba 40% of their value, but a request is being made to change the shoyu, the two tofu products and the yuba to 20%.

The Directory shows Japanese companies making soyfoods in California, Utah, Idaho, Colorado, New York, Washington state, and Oregon. Address: San Francisco, California.

95. Loomis, Henry M. 1914. Food products from the soy bean. *American Food Journal* 9(8):472-74. Aug.

• **Summary:** Loomis collected information on soybean products while stationed on the Pacific Coast. “Probably the most interesting and important of these food products is soy sauce, or shoyu, as the Japanese call it. It is the only one which is used to any extent among Occidental nations, with whom it forms the principal ingredient of Worcestershire and similar table sauces. It is also used to some extent as an ingredient of bouillon cubes. König estimates that the consumption of this product in Japan amounts to two or three fluid ounces per day for each person, which would make a total consumption for that country alone of three to four hundred million gallons. No figures are available as to the amount of this sauce which is used in China, but all except the poorest class eat it habitually on rice and fish, which form their principal articles of diet.”

Japanese soy sauce “is prepared on more scientific principles and it is considered much superior to Chinese soy. Each manufacturer of Japanese soy has special brands or trade marks under which his products are sold. Japanese soy is usually imported into this country in wooden tubs holding about three gallons each and sells at wholesale price of from 75 cents to \$1.50 per tub” [i.e. 25 to 50 cents per gallon]. A brief description of the Japanese process for making soy sauce follows; it mentions Koji.

Brief descriptions are also given of the following foods and their method of preparation: (1) “Soy bean curd, or, in Japanese, Tofu, is as its name implies prepared by coagulating or precipitating the legumin or vegetable proteid, of the soy bean by mineral salts. (2) “The frozen bean curd, or ‘Koritofu,’ ...” (3) [Yuba]. “The liquor or bean milk is the milky fluid produced in the manufacture of bean curd after straining and before coagulating. Chinese bean curd [sic], or Toufu-pi, is prepared by drying the scum produced on boiling the bean milk. It is imported in the form of vitreous, brittle, yellowish sticks in appearance like dried casein. (4) Soy bean oil. (5) “Kinako is prepared by roasting and grinding soy beans. It has a very agreeable flavor and is much used in the preparation of confections, particularly as a sort of coating powder. (6) Miso, which is made from “Koji, the same ferment as is used in the making of soy. There are two principal kinds imported into this country, the white and red Miso. They differ principally in the rapidity of fermentation and in the amount of salt used.”

“Winton and others have suggested the use of soy bean products as foods for diabetics and it appears that there are many of the foods mentioned above which would serve a useful purpose in this regard. There are a number of firms now putting out soy bean meal or flour on a commercial scale and notices have appeared recently that soy bean curd and milk are to be manufactured on a large scale in Europe.

A large table contains nutritional analyses of four types of soy [sauce] (incl. Kikkoman, Kikkoraku, typical Japanese shoyu and Chinese soy) plus each of the foods mentioned above, including tofu (8.6% protein) made in Seattle,

Washington, and “Bean milk (strained bean liquor before coagulating; 2.09% protein).

Mr. J.T. Willard notes: “I remember twenty years ago [i.e., 1894] that Prof. Georgeson of the Kansas Agricultural College had half a dozen varieties [of soy beans]. He was a teacher of agriculture in Japan and I suppose he learned as much there as he taught, and he became very enthusiastic over the soy bean. I remember there was a great difference in the different varieties of the soy bean.” A portrait photo shows Mr. H.M. Loomis.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term “soy bean curd” to refer to tofu. Address: Bureau of Chemistry, USDA.

96. Eddington, Jane. 1914. Economical housekeeping: Soy beans. *Chicago Daily Tribune*. Nov. 13. p. 14.

• **Summary:** “The soy bean is one of the staples with which we are not very well acquainted, but it is inexpensive and richer in protein than any of the other legumes.”

“This bean is considered of particular value in diabetes, but it is the flour that is chiefly used in dishes for the sick, a considerable number of recipes for which will be found in [the book] *Diet in Health and Disease*, by Friedenwald and Ruhrah. A long quoted excerpt is given. “The oriental races most frequently eat the bean in more or less cheesy foods, which are prepared from it. The most common of these are natto, tofu, miso, yuba, and shoyu.”

“There is an American company in America [perhaps Waukesha Health Products Co., in Waukesha, Wisconsin] which makes the soy bean flour, the address of which will be sent on request (stamped and addressed envelope) to any one interested. There are about three pages of recipes in the book quoted from. In recommending them for diabetics it says:

“The simplest way to use the beans is to cook them like the ordinary navy bean, preparing either bean soup, boiled beans, or baked beans, the flavor being rather improved by the addition of a piece of fat salt meat.”

97. Terry, Thomas Philip. 1914. Terry’s Japanese empire: Including Korea and Formosa, with chapters on Manchuria... A guidebook for travelers. Boston and New York: Houghton Mifflin Co.; London: Constable & Co., Ltd.; Tokyo: Kyo-Bun-Kwan, Ginza, Shichome. cclxxxiii + 799 p. See p. 515. Maps. Index. 16 cm. [75 ref]

• **Summary:** This guidebook, after its 283-page introduction, is organized geographically into: 1. Central Japan. 2. Northern Japan. 3. Yezo, the Kuriles, and Saghalien. 4. Western Japan. 5. Kyushu and the Loochoo and Goto islands. 6. Korea, Manchuria, and the Trans-Siberian Railway. 7. Formosa (Taiwan) and the Pescadores. Abbreviations (p. ix). List of maps (13).

In the Introduction: Japanese inns (p. xxxvi, xxxix-xl): The best food is not always to be had in the most pretentious places. In certain modest inns, where the rooms are as bare

as a monk's cell, and the general appearance of austerity might argue a strict economy, there will often come, as an agreeable surprise, dainty food served in dishes that delight the lover of beautiful porcelain or lacquer. Later the traveler may learn that the place enjoys fame for some savory specialty—eels boiled in soy, broiled crayfish, stewed octopus, buckwheat-macaroni, or the like.”

“Food is served in the guest's room on a lacquered tray... One of the soups may be made of... lobster, or seaweed, in which case it is amazingly thin and unpalatable; the other of beans [miso], bean curd or something of that nature. Salt is not provided unless asked for. Many of the dishes are cooked in soy; a tiny dish of which is supplied for dipping bits into before eating them.”

Japanese food (p. xliii-xlvi): “Rice is a luxury with thousands of the peasants; it takes the place of bread with the well-conditioned; and wherever it is eaten to the exclusion of other foods it produces (because the thin phosphorous skin is polished off it) the prevalent beriberi. The proportion of animal food is small. Beans eaten in a variety of ways occupy a conspicuous place in the food of all classes and they supply the nitrogenous matter essential to those who rarely eat meat and who do not get the casein obtained by cheese-eating peoples. The soy-bean (*daizu*; *omame*) ranks first in extent, variety of use, and value among the pulse of Japan, and in point of nutriment is quite near to meat. It contains nearly two fifths of its weight in legumin, nearly one sixth in fat, and is rich in nitrogen. It is to the Nipponese what frijoles are to Mexicans and garbanzos (chick-peas) to Spaniards. Of the numerous varieties some are made into curd [tofu], and into the widely celebrated bean-sauce (the Worcestershire of Asia) called shoyu (sho, soy; yu, oil), and which is almost as indispensable as rice. It forms the daily relish of the rich man and the beggar, and is in as general use as tea and tobacco.”

Fish (sakana)... Teriyaki: Fish in a sauce of soy, mirin, and sugar... Sashimi: raw fish cut in thin slices and eaten after being dipped in shoyu.—Kabayaki: fish which is first steamed then dipped into soy and roasted (or eels cut open on the dorsal line, covered with soy mixed with sugar, and roasted). The latter dish, usually called Unagi-no-kabayaki, is a favorite with the Japanese,...

“Rice:... Azuki-meshi: rice and red pea-beans mixed (boiled).—Mochi: small dough-cakes made of rice and sold throughout Japan.—Sushi: a general name for food of boiled rice and fish, eggs, vegetables, etc., seasoned with vinegar and soy...—Inari-zushi: fried tofu stuffed with chirashi-zushi.

Note: This is the earliest English-language document seen (May 2012) that contains the word *Inari-zushi*.

- Maki-zushi: boiled rice and other vegetables rolled and wrapped in a sheet of the sea weed called Asakusa-nori...—Kombu-zushi: fish seasoned with vinegar and wrapped in a piece of the edible seaweed known as *Laminaria japonica*. A differentiation of this popular food is the Kombumaki: baked

or roasted fish wrapped in kombu, then tied, and boiled in sugar and soy.

Various:... Tsukudani: small fish boiled in soy and used as a relish or condiment (named for Tsukudajima, a place in Tokyo famous for its preparation).—Oden: a stew (greatly enjoyed by the proletariat) of fried bean-curd, lotus-roots, potatoes, etc.” Ame and midzu ame.

“Soup (shiru): Tōfu-jiru: bean-curd soup.—Miso-shiru: bean-soup with vegetables.”

Railways—Dining cars (p. lxxxiv): Discusses “The unique and not unpalatable bento,—a sort of national sandwich,—put up (usually cold) in thin, flat, twin boxes (bento-bako) of dainty white wood (1 in. high, 5-7 in. long), along with a paper napkin (kuchifuki) and a pair of chopsticks (hashi), and sold at many stations, is distinctively Japanese and widely popular... Besides the full box of plain boiled rice, the ordinary (15 sen) bento contains usually... a few boiled black beans (nimame)... seaweed (kobu)...” Rice cakes (mochi) with the kernel of yokan, or sweet [azuki] bean paste, which usually forms their center.

Buddhism (cxc): Again the rice-flour cake [mochi] is offered at the domestic altar. It now takes the form of a lotus-petal with capsule of [azuki] bean-paste.” (an).

Yokohama (p. 13): “The return gifts from the emperor and princes included...jars of soy [sauce]; coral and silver ornaments;...”

Tokyo (p. 199): “The hill beyond the intersecting roadway is called Suribachi-yama because of the similarity in shape to a suribachi—an earthenware vessel in which bean-soup [miso soup] is prepared.”

Nikko—Shops: “... the kuri-yokan (so-called from the chestnuts mixed with the sweetened bean-paste [azuki]) is good and cheap (10 sen).”

Kyoto—The Shinto Shrine of Inari. There are many local festivals, the most important of which is the Inari-matsuri which usually falls on June 5. There are trick riders on horseback and decorated sacred cars [carts] are “placed in the procession, and the day is devoted to general jollity—and pocket-picking. On this occasion the people eat Inari-zushi, or fried tofu stuffed with boiled rice, since tofu [fried, as aburage] is the favorite food of the fox popularly believed to be the messenger of Inari (and by extension, the God of Rice).”

Kyoto—Miidera (p. 504-05): Travelers visit Benkei's Iron Pot (*Benkei-no-shiru nabe*), a very old, rusted, and broken contraption (about 5 ft. wide and 3 deep) resembling a soap-boiler, and from which Yoshitsune's devoted servitor (and popular hero) is supposed to have eaten his bean-soup [miso soup]—which may well be doubted.”

Kyoto to Koya-San (p. 515): For the Western traveler there is “a tiny kitchen a blessed refuge wherein, if he is making a prolonged stay, he may cook his un-Christian food without the vegetarian priests knowing (or caring) that such a sacrilege is being committed! Meals are served in one's

apartment; the food is purely vegetable, and after the second day distressfully unpalatable. Fish, flesh, fowl, butter, cheese, eggs, milk, bread, coffee, and other necessities of life are absent, and are replaced by seaweed, greens, bamboo-shoots, cabbage, daikon in various unappetizing forms, and other garden-truck which one eats as a novelty the first meal and rejects with an involuntary tightening of the throat when it is offered at the second and third. In addition there are flabby mushrooms boiled in very thin water without seasoning; the omnipresent boiled rice without sugar, milk, or salt; a bean-curd (tofu) for which one acquires a liking only after much patient effort; a yellow substance (known as yuba) made of the skin of bean-curd, and looking and tasting like thin sheet rubber;...”

Kobe excursion–The Tansan Hotel (p. 630): The strawberries and other ground fruits and vegetables, which grow nearly all the time in this favored spot, are enriched with [soy] bean-cake only [no human excrement is used] (as a precaution against typhoid).”

Korea (p. 725): “Among the dishes dear to the native heart are pounded capsicum, bean curd [tofu], various sauces of abominable odors, a species of sour kraut (kimshi [kimchi]), seaweed, salt fish, and salted seaweed fried in batter.”

Manchuria and the Trans-Siberian Railway (p. 756): “Considerable [soy] bean-cake and furs, and vast quantities of lumber, etc., come down the river from upper Manchuria and Siberia.”

Also discusses edible seaweed (p. xlv, 330): Japanese food: “Seaweed in almost endless variety enters largely into foodstuffs. Not only are the giants of the marine flora taken up and utilized in various ways, but also the more delicate red and green sorts—the use of which has been adopted by other nations. Most of the edible green and red algae bear the generic term nori, while the words *umi-kusa*, or *kai-so* (which also means *bêche-de-mer*), are used for algae in general. Many of the weeds are eaten fresh, others in soup. Some are dried or pickled and eaten in vinegar. They usually appear in commerce in the form of little packages, to the sale of which special stores are dedicated. Certain varieties are converted into jelly.”

Yezo–fisheries: “Certain of the many varieties of edible seaweed which flourish along the Japanese coast are found in Yezo, particularly the circumpolar tangle (*Laminaria*) and seawracks (*Fucus* species), which prefer cold water and a heavy surf. For this reason sea-algae add considerably to the value of the Yezo exports.”

Note: The author resided for almost 12 years in Japan and made repeated journeys on foot (and otherwise) from one end of the country to the other. Address: F.R.G.S. [Fellow of the Royal Geographical Society, England].

98. Winkler, Gustav. 1914. Die Sojabohne: Aus einem Vortrage... gehalten in der Hauptversammlung der

Gartenbau-Gesellschaft Frankfurt a.M. am 17. April 1914 [The soybean: From a lecture... presented at the main meeting of the Gardening Society of Frankfurt am Main, on 17 April 1914]. Frankfurt am Main: Fr. Honsack & Co. 30 p. 22 cm. On title page: Als Manuskript gedruckt (Printed as a manuscript). [3 ref. Ger]

• **Summary:** On the gray cover: *Die Sojabohne der Mandschurei* [The soybean of Manchuria]. Contents: Introduction. Sir Alexander Hosie, in his books about Manchuria, counts eight types of soybeans: Yellow soybeans (3 varieties), green soybeans (2 varieties), and black soybeans (3 varieties). The soybean plant. Condition / nature of the soil and the climate. Cultivation of soybeans. Soybeans can enrich the soil with nitrogen. Yield.

Utilization of the soybean: 1. In East-Asia. A. As foods: 1. Soy sauce. 2. The Chinese paste *Chiang* and its near relative Japanese miso. 3. Tou-fu or tofu (incl. firm tofu, tofu curds, tou-fu p'i or yuba, ch'ien-chang or pressed tofu, tung tou-fu or frozen tofu). B. Soybean meal or flour. C. Soybean meal for use as fertilizer or animal feed. D. Soybean oil. E. Lard substitute and margarine. F. Industrial uses such as lubricant and waterproofing agent. Soybean meal. 2. In Europe and the USA. Refined soybean oil used for salad oil, margarine. Utilization of soybean cake in Europe. Utilization of soybean oil in Europe (for making soap, above all). The soybean oil and cake industry in Manchuria.

This booklet begins: A year ago today I had the opportunity to speak about the soybean for the first time. What we knew and understood about it then was still very little. Except within botanical circles, even its name was completely unknown, even though in East Asia (China, Japan, India), for more than 1,000 years, the soybean has been cultivated and is near rice as the main food for more than 500 million people.

Note: Part of this lecture was based the following English-language article, translated into German by Werner Winkler (Gustav's son) in 1913: Shaw, Norman. 1911. “The soya bean of Manchuria.” *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series* No. 31. 32 p. Address: Mainkur-Fechenheim [Frankfurt am Main, Germany].

99. Piper, C.V.; Morse, W.J. 1916. The soy bean, with special reference to its utilization for oil, cake, and other products. *USDA Bulletin* No. 439. 20 p. Dec. 22. [9 ref]

• **Summary:** Contents: Introduction. Soy beans in Manchuria. Soy beans in Japan. Soy beans in Europe. Soy beans in the United States. Methods of oil extraction. Soy-bean meal as human food. Soy-bean meal as stock feed. Soy-bean meal as fertilizer. Uses of soy-bean oil. Analysis of important varieties of soy beans. Possibility of developing a manufacturing industry with American-grown soy beans.

“Analyses of important varieties of soy beans (p. 16-17):... In determining the range in the oil and protein

contents of over 500 varieties grown in the variety tests at Arlington Farm, Virginia, the percentage of oil was found to range from 11.8 to 22.5 [Tokyo had 20.7% and Biloxi had 20.3% oil] and of protein from 31 to 46.9 [Chiquita had 46.9% protein]... At the present time the Mammoth Yellow variety is the most generally grown throughout the South and is the one used in the production of oil. The yellow-seeded varieties, which are most suitable for the production of oil and meal, contain the highest percentage of oil.

“Environment has been found to be a potent factor in the percentage of oil in the same variety. Considerable differences occur in oil content when soybeans are grown in different localities. The Haberlandt variety grown in Mississippi, North Carolina, Missouri, Virginia, and Ohio gave the following percentages of oil, respectively: 25.4, 22.8, 19.8, 18.3, 17.5; while the Mammoth Yellow variety grown in Alabama, South Carolina, Tennessee, North Carolina, and Virginia gave, respectively, 21.2, 19.6, 19.5, 18.4, and 18.8. Variety tests conducted in various parts of the country indicate a higher percentage of oil with the same variety for southern-grown seed. Similar results have been obtained in Manchuria, the North Manchurian beans showing an oil content of 15 to 17 percent and the South Manchurian beans from 18 to 20 percent.”

Photos (both by Frank N. Meyer) show: (1) A fleet of junks carrying soy beans to Newchwang, Manchuria.

(2) Coolies at Newchwang, carrying loads of soy beans from junks to big stacks.

An outline map of the USA (p. 8) shows the area to which the soy bean is especially adapted for growing for oil production. The area of double hatching shows that it is especially well suited to the Deep South. The northern boundary of the area where it is “less certain of profitable production” includes the southern one-third of Ohio, Indiana, and Illinois, and most of Missouri. On the west, the “less certain” area includes the eastern one-third of Nebraska, Oklahoma, and Texas.

Tables show: 1. “Exports of soy beans, bean cake, and bean oil from the principal ports of South Manchuria (Antung, Dairen, Newchwang), 1909 to 1913, inclusive.” 2. “Quantity and value of exports of soy beans and soy-bean oil from Japan to foreign countries, 1913 and 1914.” The countries are: China, United Kingdom, France, Germany, Belgium, United States, Hawaii, British America, Australia, other countries. 3. “Quantity of imports of soy beans, soy-bean cake, and soy-bean oil from Dairen, Manchuria, into Japan, 1911 to 1914, inclusive. The greatest imports were of soy-bean cake, followed by soy beans, with only small amounts of oil.

(4) “Quantity and value of imports of soy beans, bean cake, and bean oil by European countries, 1912 to 1914, inclusive.” The countries are: Austria, Belgium, France, Germany, Italy, Netherlands, Russia, Sweden, United Kingdom. In 1912, the UK imported the most soy beans,

while Netherlands imported the most cake and oil. (5) “Quantity and value of imports of soy beans, soy-bean cake (Footnote: Includes bean cake [perhaps fermented tofu or canned regular tofu], or bean stick [probably dried yuba sticks], miso, or similar products, with duty, 40 per cent) and soy-bean oil into the United States, 1910 to 1915, inclusive.” The quantity of soy bean imports was greatest in 1915 with 3.837 million lb. The quantity of soy-bean cake imports was greatest in 1913 with 7.005 million lb. The quantity of soy-bean oil imports was greatest in 1911 with 41.106 million lb. “Prior to 1914 soy beans were not classified separately in the customs returns” (p. 9). (6) “Composition of soy-bean flour in comparison with wheat flour, corn meal, rye flour, Graham flour, and whole-wheat flour.”

(7) “Value of a short ton of soy-bean cake and other oil cakes in the principal European countries” (Incl. cottonseed, linseed, peanut {Rufisque}). Countries: Germany, United Kingdom, Netherlands, Denmark, Sweden. (8) “Analyses [nutritional composition] of soy-bean meal and other important oil meals.” (Incl. Cottonseed, linseed (old and new processes), peanut (decorticated), sunflower seed). (9) “Fertilizing constituents [nitrogen, ammonia, phosphoric acid, potash] of soy beans, soy-bean meal, and cottonseed meal.”

(10) Analyses for protein and oil of important varieties of soy beans grown at Arlington Farm (Virginia), Newark (Delaware), and Agricultural College (Mississippi). The varieties are: Mammoth, Hollybrook, Manchu, Haberlandt, Medium Yellow, Ito San, Chiquita, Tokyo, Lexington, Guelph, Black Eyebrow, Shanghai, Peking, Wilson, Biloxi, Barchet, Virginia. Note 1. “At the present time, the Mammoth Yellow variety is most generally grown throughout the South and is the one used in the production of oil” (p. 16). (11) “Acreage, production, and value per ton of cottonseed in the boll-weevil states.” “Since the boll weevil first entered Texas in 1892,” it has steadily decreased production of cottonseed. The soy beans offers a good replacement. (12) “Comparative prices per ton of cottonseed and soy beans on the European market, 1911 to 1914, inclusive.” Soy beans are usually slightly more expensive.

Note 2. This is the earliest published document seen that contains soy-related photos by Frank N. Meyer.

Note 3. This is the earliest document seen in which William Morse describes soy milk, or mentions natto, or correctly mentions tofu.

Note 4. This is the earliest document seen (Sept. 2004) that mentions the soybean varieties Biloxi or Lexington. Address: 1. Agrostologist in Charge; 2. Scientific Asst. Forage-Crop Investigations, USDA, Washington, DC.

100. *New York Times Magazine*. 1917. Woman off to China as government agent to study soy bean. Dr. Kin will make report for United States on the most useful food of her native land. June 10. p. 9. (New York Times section 6).

• **Summary:** The *New York Times Magazine* is part of the Sunday *New York Times* and may be simply cited as such. Dr. Yamei Kin is “the only Chinese woman with a physician’s diploma from an American college,” the Woman’s Medical College of New York. “She left New York a few days ago for the orient to gather data on that humble but nutritious food [the soy bean] for the Department of Agriculture at Washington.” During World War I, new demands are being placed on America to feed its citizens and allies. “The appointment of Dr. Kin marks the first time the United States Government has given so much authority to a Chinese. That it is a woman in whom such extraordinary confidence is now reposed detracts nothing from the interest of the story.”

China was the first country to invent paper, printing, gunpowder, porcelain, chess, playing cards, and silk. “And now Dr. Kin is going to see if her native land can teach the United States how to develop a taste for the soy bean in its numerous disguises...”

“The world is in need of tissue-building foods,’ said Dr. Kin, ‘and cannot very well afford to wait to grow animals in order to obtain the necessary percentage of protein. Waiting for an animal to become big enough to eat is a long proposition. First you feed grain to a cow, and, finally, you get a return in protein from milk and meat. A terribly high percentage of the energy is lost in transit from grain to cow to a human being.’”

“The statement is frequently made that the Orientals live almost exclusively upon rice, eating little meat. It is not generally known, perhaps, that deficiency in protein is made up by the consumption of large quantities of products of the soy bean, which take the place in our dietary of meat and other costly nitrogenous foods. They are eaten in some form by rich and poor at almost every meal. Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy bean, which is protein, meat, and milk in itself. We do not eat the plain bean in China at all. It is never eaten there as a vegetable, but in the complex food products—natto, tofu, miso, yuba, shoyu, and similar dishes.

“The chief reason why people can live so cheaply in China and yet produce for that nation a man power so tremendous that this country must pass an Exclusion act against them is that they eat beans instead of meat.”

She then describes how to make tofu. “Soup noodles are made out of bean curd. Entrées made of bean curd are served with cream mushroom sauce or a hot Spanish tomato sauce. A salad of bean sprouts, accompanied by cheese—the cheese [fermented tofu] a cross between Camembert and Roquefort, and made from the soy bean—is very nutritious and palatable. Americans do not know how to use the soy bean. It must be made attractive or they will not take to it. It must taste good. That can be done. We make from it a delightful chocolate pudding. A black soy bean sauce we use

as a foundation for sweetmeats in China.”

Note: None of the various Chinese food experts whom we have asked can understand what Dr. Kin means by the previous sentence. None has ever heard of a “black soy bean sauce” that is used as a foundation for confections or sweets in China. The two black soy bean sauces made in China, from either fermented black soybeans or jiang, are both salty. (WRS Jan. 2009). Nevertheless: This is the earliest English-language document seen (Oct. 2008) that uses the term “black soy bean sauce” to refer to a kind of sauce made from soybeans.

“The soy bean contains practically no starch, which means that it is a most desirable food for diabetics, and also, of course, for vegetarians. Buddhists kill no animals—they thrive by making a specialty of the soy bean, which, by the way, is already being used in the French Army. They find there that soy bean mixed with flour makes a good cracker, more nourishing than any other cracker.”

“The Chinese do not know what worn-out soil is. Some places are so fertile and are cultivated with so much care and skill that three or four crops a year are regularly gathered... it is very common to see two crops in the same field at the same time... The Chinese have a passion for fertilizing the soil...”

“Dr. Kin is a graduate of the Woman’s Medical College of New York, and her great interests have always been domestic sanitation, civic hygiene, the conservation of life, and questions of nutrition. She is the head of the Imperial Peiyang Woman’s Medical School and Hospital, near Peking... the Imperial Infant Asylum in Tien-tsin, the Widows’ Home, and the Girls’ Refuge all come under her supervision as head of the woman’s hospital work of Northern China. She will return to this country in October, bringing to our Government the detailed results of her study of the uses of the soy bean as a foodstuff needed by this country and by the world in the campaign of food raising and conservation.” An illustration (line drawing) shows a portrait of Dr. Yamei Kin.

Note 2. This is the earliest published document seen (July 2000) that mentions Dr. Yamei Kin. Frank N. Meyer wrote letters about her in 1911 and 1916.

Note 3. This is the earliest document seen (Oct. 2001) that mentions a soy pudding (a “delightful chocolate pudding” made from bean curd).

101. *Literary Digest*. 1917. To study the soy-bean for Uncle Sam. 55(2):52-53, 55. July 14. Whole No. 1421.

• **Summary:** This is a lengthy summary of an interview with Dr. Yamei Kin, published in *The New York Times Magazine* on 10 June 1917. It includes several lengthy excerpts. “So interested has the United States become in this discovery [China’s knowledge of the soy-bean] that Dr. Yamei Kin, a Chinese woman graduate of an American college, has been sent back home to gather for the Agricultural Department at

Washington [DC] all the facts that are known in China about the soy-bean.”

“Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy-bean, which is protein, milk, and meat in itself,” says Dr. Kin.

“The plain bean, however, is never eaten, but it furnishes such products as natto, tofu, miso, yuba, shoya [sic, shoyu], and other dishes with queer-sounding names...”

A letter dated 26 March 1917 from Frank N. Meyer in China gives the address of Dr. Mrs. Yamei Kin as 500 W. 111th St., New York City.

102. Eddington, Jane. 1917. The Tribune Cook Book: Beans, soy special. *Chicago Daily Tribune*. Oct. 14. p. E8 (Part 6, p. 8).

• **Summary:** “We do not know enough about that most charming family of plants which furnish us the meat stuff of the vegetable kingdom, or vegetable protein.”

“Don’t forget the soy bean,” was one of the commands urged on growers this year, ‘for there is sure to be a larger demand for the beans for human food.’ Last year these beans cost no more than a third as much as navy beans and only a fourth as much as limas, and more people were trying them and failing in their cooking than ever before. They really ought never to be subject to a boiling temperature. Protein of any sort is easily hardened by much heat, and these beans have a high per cent of this food principle. With this in mind they may be baked, etc., like navy beans.

“The soy bean, though so long used in China and Japan, whence we have such products as soy sauce, was introduced many years ago into the United States as a soil renewer and fodder crop.”

Years ago, experiment station bulletins were discussing “the total digestible nutrients” of fodder crops. Yet more than 25 years were to pass “before even a few people would listen to the word ‘nutrient’ in reference to their own diet. ‘Roughage’ was a term much used that far back, as contrasted with such condensed foods as grains, while now we use the term in talking about human diets.”

“Perhaps we shall some time learn to make the bean curd of soy beans which the Chinese use so much. I am hoping to get a precise recipe. The soy bean flour came into use some time ago.”

“The medical writers, who for a considerable number of years have used this bean extensively and written much about it with recipes,” say that the “yellow soy bean” contains 35 per cent protein.

The section titled “Soy bean cheeses” contains a long excerpt from Friedenwald and Ruhrah (1913, p. 124-26), which states that the most common of these “cheeses” are natto, tofu, miso, juba [sic, yuba], and shoyu. A brief description of each is given.

The last section, titled “Home made soy bean flour,” again discusses Friedenwald and Ruhrah, “patent soy bean flour, mostly known to doctors only,” grilled soy beans, diabetics, and a recipe for home made soy flour.

103. Han, John E.S. 1917. Bean curd. *Yale-in-China Student (The) (Changsha, China)* 1(2):8-14. Nov.

• **Summary:** Contents: Historical. Bean curd as an ideal food. Manufacture of bean curd (with 6 illustrations—line drawings): Primary soaking, grinding, filtration, maceration, dilution, boiling (and yuba), coagulation, shaping of the commercial curd. Calculation for yield and profit (averaged). Suggestion as to the improvement of the manufacturing process.

“Bean curd manufacture was not known before the Three Dynasties [Three Kingdoms, A.D. 220-265]. It was invented in the Han dynasty.” A table shows the cost (in cash per catty [about 1.1 pounds weight] in Changsha) and nutritional composition of various foods. The costs are: bean curd 33, fish 340, beef 380, duck 440, chicken 460, pork 480, mutton 560, eggs 576. The author discusses the many diseases caused by meat in the diet. To coagulate tofu, magnesium chloride (a by-product of salt manufacture) is used in the North of China whereas plaster of paris [calcium sulfate] is exclusively used in the South.

Concerning suggestions for improving the tofu manufacturing process, the author states: “The serious drawback in native factories is the enormous amount of manual labour required in producing such a small output. In the Chinese Bean Curd Factory at Paris, many scientific improvements have already been put into practical use. The soaking is done on the second floor, and the soaked bean is conveyed to the mill by a tube like box. After grinding it is filtered by means of a filter-press which gives a much better extract in less time. The extract is carried from the mill to the filter-press and also from the filter-press to the pans by tube connections. A screw press is used to press the excessive water, both from the bean curd and from the ‘Chia.’ In large plants, I should recommend a hydraulic press rather than a screw-press and steam heating rather than direct fire.

“Hydrometers are perhaps used in the Paris factory, and it is very necessary for the native manufactures to have them. Such an instrument not only aids the manufacturers to judge the exact consistency of the extract, but also to secure a standard strength of bean milk throughout the country.”

As of 1992 Yale still has campuses in China and Hong Kong. The Yale-China Association at Yale is still active. Phone: 203-432-0880. Address: Yale-in-China, Changsha, China.

104. Johnson, Nelson Trusler. 1918. Process used by Chinese in making bean curd. *Commerce Reports [USA] (Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce)* 21(58):926-

28. March 11.

• **Summary:** This report begins: “Probably the first article of diet that attracts the attention of the foreigner coming to China is the bean curd which is served to him at the Chinese restaurant or hotel, or in the Chinese family in many ways. Bean curd is only one of a number of products derived from soya beans. Among these are bean meal, a kind of spaghetti, bean cheese, bean sauce (known as shoyu to the Japanese, chiang yu to the Chinese, and soy in commerce), bean milk, and bean oil. All of these products are used by the Chinese as foods. The shoyu is used as a foundation for a certain well-known brand of sauce.” Note: Probably Lea & Perrin’s Worcestershire Sauce.

The next section, titled “Product called an ideal food,” is largely a summary of a 1917 article by John E.S. Han titled *The Yale-in-China Student* (Changsha, China) 1(2):8-14. Nov. Contents: Introduction. Product called an ideal food. Uniform quantities of beans used. Specific gravity near that of milk. Method of coagulating emulsion. Suggested improvements in process.

On the last point, Mr. Johnson notes that the changes Mr. Han recommends “are largely the same as those proposed by Li Yu-ying.” Address: Consul, Changsha [China].

105. Itano, Arao. 1918. Soy beans (*Glycine hispida*) as human food. *Massachusetts Agricultural Experiment Station, Bulletin* No. 182. 10 p. March. [16 ref]

• **Summary:** Contents: Introduction. Chemical composition and digestibility. Human food prepared from soy beans (practical recipes for making Japanese foods at home; names in parentheses indicate the Japanese name). Soy bean milk (*Toniu*): The ordinary method employed in Japan, toniu from soy bean meal (made by grinding soybeans in a wheat flour mill or fine coffee mill), author’s method [from soy bean meal, plus inoculation with *Bacillus coli* and *B. lactis aerogenes*], synthetic toniu, condensed soy bean milk (condensed toniu). Evaporated soy bean milk (yuba). Soy bean curd (tofu): Fresh curd (tofu), frozen tofu (*kori tofu*), fried tofu (*abura-age*). Baked beans. Boiled beans. Roasted beans. Powdered beans: Roasted, or raw (soy bean meal). Green beans. Soy bean pulp (*kara*). Fermented boiled beans (natto). Ripened vegetable cheese (miso; discusses koji). Soy bean sauce (shoyu). Vegetable butter, ice cream, oil (table use) and lard (cooking): “The manufacture of these articles from soy beans needs further investigation.” How to make “Evaporated soy bean milk (Yuba)” at home (p. 5): “1. Boil the soy bean milk until a film is formed on the surface. 2. Collect the film and cut it into any shape desired. Note.—The film consists of coagulated albuminoids and fat. It may be used as an article of food, cooked in soup, etc.”

Note 1. Even though it is very brief and inadequate, this is the earliest document seen (Oct. 2012) that contains a description of how to make yuba at home.

How to make “Baked beans” at home: (p. 7). “1. Soak

the beans, suspended in a cloth bag, in a large quantity of hot water over night. (Soaking for twenty-four hours in ice-cold water which is changed occasionally will give the same result.) 2. Change the water, when hot water is applied, in the morning and an hour or two before cooking. 3. Add 1 teaspoonful of soda [sodium bicarbonate] per quart of beans and boil until the beans become soft. 4. Bake like other beans. Note.—The characteristic strong flavor of the beans is removed by soaking before cooking; the addition of soda [sodium bicarbonate] makes the beans soft. Cooking with salt pork, potatoes, onions, molasses and other substances makes the beans more palatable to some tastes.”

Concerning the “Roasted beans” (p. 7). “1. Roasting can be done either in an oven or in an ordinary corn popper. 2. Roast until the skin of the bean is burst by popping. Note.—The beans can be kept soft by immersing them in a syrup while they are hot. Thus very wholesome candy is prepared.”

Concerning the “Powdered beans: Roasted” (p. 7). “1. Roast as in the roasted beans. 2. Let them stand until they cool to harden them. Grind them in a coffee mill or other suitable grinder. Note.—The powder can be used as a salad dressing or cooked [baked] with cookies like peanuts and other nuts, or employed as a substitute for coffee.” Note 2. This is the earliest English-language document seen (Dec. 2005) that uses the term “Powdered beans: Roasted” to refer to roasted soy flour.

Concerning “Green beans: 1. Pick them when the beans are three-fourths to full grown. Boil them in salt water. 3. Discard the pods. 4. Serve the beans with butter or milk. Note—The pods are tough and they can be removed easily on boiling.”

Concerning “Soy bean pulp (*kara*): 1. This is the residue after the milk is extracted in the process of preparation of soy bean milk. 2. Cooked like any other vegetable with proper seasoning. Note.—Makes a very rich dish; an addition of green onions, cabbage or parsnip may improve it.”

Tables contain analyses of the chemical composition of each of the basic foods discussed.

Note 3. This is the earliest English-language document seen (March 2007) concerning soy ice cream, which it calls simply “ice cream.” This is also the earliest document seen (March 2007) concerning the etymology of soy ice cream.

Note 4. This is the earliest English-language document seen (Oct. 2001) that uses the term “soy bean pulp” to refer to okara.

Note 5. This is the earliest English-language document seen (Feb. 2004) that uses the word “kori tofu” to refer to dried-frozen tofu. Address: Amherst, Massachusetts.

106. *British Medical Journal*. 1918. A vegetable milk. i(2889):430. April 13.

• **Summary:** “From a correspondent: In these days of agalactia [failure of the secretion of milk in mammals] any reasonable substitute for milk is certain of a welcome, so

that particular interest attaches to the soy bean, an alimentary plant grown on a very large scale in China, and imported into this country [Britain] by hundreds of thousands of tons annually for the sake of the oil it contains, which is utilized in the manufacture of soap, margarine, etc.

“More interesting from the alimentary point of view is the fact that it can be made to yield a substitute for milk, which in respect of appearance and composition so nearly approximates the familiar article as to be wellnigh indistinguishable therefrom.

“The process is simple. Five ounces of the bean are soaked overnight in a quart of cold water; it is then coarsely ground, mixed with the water in which it has been soaking, and filtered through muslin [coarse cotton fabric]. The result is a milky fluid with a rather strong smell of haricot bean, which disappears after it has been raised to boiling point. Infants take it readily, and, mixed with tea or coffee, the taste is imperceptible. Fresh soy bean milk has a fairly acid reaction; it is quite homogeneous under the microscope, and its physical properties are those of cow’s milk; rennet causes it to curdle, lactic acid germs cause it to undergo lactic acid fermentation. When boiled it ‘rises’ like ordinary milk and forms a pellicle [yuba] on the surface.

“Its composition is: Casein 3.13 per cent., fats 9.89, but it lacks carbohydrates, a shortcoming which can easily be remedied. As the fatty constituent is an oil, butter cannot be made from soy bean milk, but it can be made to provide cheese (120 grams of the bean yields 184 grams of cheese), and the cheese [fermented tofu] can be made to resemble any of the popular cheeses in the market; it is merely a question of employing the proper flavouring ferment. Soy-bean milk can be retailed at 3 centimes a litre. The residue, after making milk, is still very rich in alimentary principles, and can be worked up into very palatable ‘almond’ cakes and biscuits. Being practically free from starch, these cakes are especially suited for consumption by diabetics.

“Roasted, the bean provides a colourable imitation of coffee, just as do barley and oats, to what a satisfactory degree only those who make use of these substitutes will understand.”

“A practical idea of its alimentary value may be formed by contrasting the cost of this as compared with other albumins: 100 grams of albumin, at before-the-war prices, would cost—from egg 1s. 8d. [1 shilling 8 pence], from meat 1s. 4d., from pork 8d, dried peas 3d., and from soy bean 2d. The bean contains four times as much mineral constituents as meat, and is twice as rich in phosphoric acid.” A table compares the nutritional composition of soy beans (water plus 5 nutrients) with lentils, haricot beans, peas, and broad beans.

107. Evans, W.A. 1918. How to keep well. *Chicago Daily Tribune*. Aug. 28. p. 6.

• **Summary:** “Soy beans offer large possibilities as a food.

They contain 17 per cent fat, 36 per cent proteid, and 14 per cent starch. Soy bean milk has been used for feeding children for a long time. Le Wall says that soy bean cheese and soy bean croquettes resembling meat croquettes are in use. According to the same author, soy bean is the basis of Worcestershire and other sauces. Among orientals soy bean foods are: Tashir, a bean natto and miso, also soy bean cheeses. Ordinary soy milk and Yuba or soy cream are in use. Shoyer [sic, shoyu] is an oriental sauce in making which soy beans are used.” Address: Dr.

108. Winkler, Gustav. 1918. Die Sojabohne: Aus einem Vortrage... gehalten in der Hauptversammlung der Gartenbau-Gesellschaft Frankfurt a.M. am 17. April 1914. Zweite Auflage [The soybean: From a lecture... presented at the main meeting of the Gardening Society of Frankfurt am Main, on 17 April 1914. 2nd ed.]. Mainkur bei Frankfurt am Main, Germany: Published by the author. ii + 28 p. Illust. 22 cm. [4 ref. Ger]

• **Summary:** On the cover: “Die Sojabohne der Mandchurei [The soybean of Manchuria]. Much of this lecture (as stated on the title page) was based the following English-language article, translated into German by Werner Winkler (Gustav’s son) in 1913: Shaw, Norman. 1911. “The soya bean of Manchuria.” *Shanghai, Statistical Department, Inspectorate General of Customs. China Imperial Maritime Customs. II. Special Series No. 31.* 32 p.

Contents: A 2-page insert at the front. Photos show: (1) The author (with a large white beard and moustache) with a many-branched soybean plant, stripped of its leaves, mounted on a 2 x 3 foot wooden board, from his beanfield (*Winklers Bohnenfeld*) at Mainkur. This one plant grew from May 10 to Oct. 15, 6 months, producing 242 pods containing 503 completely mature soybeans. This line was acclimatized for 6 years and cultivated in the soil for 5 years. (2) The author standing and holding (with the roots facing upward) one soybean plant in each hand. In his right hand is an acclimatized soybean which produced 58 beans in 100 days. In his left hand is a plant grown from Chinese seeds of 1912-13 which produced 224 flowers and no seeds in 100 days. (3) A many-branched soybean plant, stripped of its leaves, from Winkler’s beanfield, affixed to a board. Grown from Chinese seeds harvested in 1911/12. It grew from 15 May 1917 until Oct. 1, five months. 105 pods produced about 250 completely mature soybeans. From seeds that were not yet acclimatized grown on cultivated soil. (4) A similar looking plant from Winkler’s beanfield. Grown from Chinese seeds harvested in 1911/12. It grew from 15 May 1918 until Oct. 15, five months. 160 pods produced about 350 soybeans. The seeds were not yet completely ripe because of bad, raw weather in 1918.

Foreword to the 2nd edition. Introduction. Diagram in the shape of a rhombus / diamond, showing how the various colored soybeans change from one color into another

(adapted from Shaw 1911, p. 2). Description of the diagram: Discusses: (1) Ball, Carleton R. 1907. "Soy bean varieties." *USDA Bureau of Plant Industry, Bulletin No. 98*. 30 p. + 5 plates. May 27. (2) Hosie, Alexander. 1910. *Manchuria: Its People, Resources, and Recent History*. London: Methuen & Co. xii + 293 p. Hosie describes 3 types of soybeans: Yellow, with 3 subvarieties. Green, with 2 subvarieties. Black, with 3 subvarieties.

The rest of the contents is fairly similar to that of the 1st edition (1914), but the details within many sections are greatly expanded. On the rear cover is a photo of two soybean plants attached to a board, one month after planting the seed, Summer 1917; 15 May to 15 June. In the Supplement (p. 26-28), the author summarizes the results of his 8 years of soybean cultivation in Frankfurt; he concludes that it can be grown with good results in southern Germany. Frankfurt am Main is about midway between the northern and southern tips of Germany. Address: Mainkur bei Frankfurt am Main, Germany.

109. *Schweizerische Milchzeitung (Schaffhausen, Switzerland)*. 1918. Soja-Milch [Soy milk]. 44(93):1. Nov. 22. Friday. [Ger]

• **Summary:** The soybean is imported in large quantities to Europe for industrial uses. In the *British Medical Journal* of April 1918 [April 13, p. 430] we find a recipe for the preparation of soya milk. The recipe is summarized and the properties of soymilk are described. When fresh, this "soybean milk" has a slightly acid reaction, is microscopically homogeneous, and in its physical properties, resembles cow's milk. Lactic fermentation bacilli are active in it. It contains 3.13% casein and 9.89% fat. As the fat is rather oily, churning is impossible. When soymilk is heated, a skin [yuba] forms on its surface. A cheese [tofu] can also be made from soymilk. Soymilk and its derivatives are rich in phosphates, which would be good for nourishing infants and children. In normal times, soymilk should be very inexpensive. The residue from making soymilk [okara], which is still rich in nutrients, could be used in making cakes.

110. Shih, Chi Yien. 1918. Beans and bean products. Shanghai, China: Soochow University Biology Dept. 13 p. 24 cm. [Eng]

• **Summary:** The author's name in pinyin is probably Shi Jiyuan. At the head of each section, the name of each product or type of bean is written in Chinese characters. Contents: Introduction by N. Gist Gee of the Dept. of Biology, Soochow Univ., China.

Note 1. Soochow, also called Su-chow (formerly Wuhsien) is a city in southern Kiangsu (pinyin: Jiangsu) province, in eastern China, on the Grand Canal. Introduction and names of soy beans: Classical Chinese names, colloquial Chinese names, Latin names, and English name (Soja bean).

Soy beans. The food products of soy beans. Bean curd (Cc). Tou fu koen. Po yeh. Yu tou fu [fried tofu]. Ju fu [fermented tofu]. Tsao ju fu [fried fermented tofu]. Ch'ing hsien ju fu. Tou chiang or bean sauce. Chiang yu. Bean ferment or tou huang. Bean Sprouts. Bean relish or tou shih [fermented black soybeans]. Bean oil.

Beans (Four varieties of *Phaseolus mungo* var. *radiatus*: chidou = dark-red [azuki] bean, baichidou = white dark-red bean, lüchidou = green red bean, and lüidou = green [mung] bean): The food products from the green [mung] beans (lüidou): Bean sprouts, green bean congee or lu tou chou, green bean soup or lu tou tang, green bean pudding or lu tou kao and lu tou sha. The food products from the red [azuki] bean (quite similar to those made from the green [mung] bean): Congee, rice, pudding, tou sha.

Hyacinth beans (*Dolichos lablab*; five Chinese varieties / names: biandou, baibiandou, qingbiandou, zibiandou, longzhao biandou). Asparagus beans [cowpeas] (*Vigna catiang*; four Chinese varieties / names: jiangdou, panxiang jiangdou, manli jiangdou, baimi jiangdou). The food products from Pien Tou and Chiang Tou. Medicine. Flowers and seeds of the Pai Pien Tou, the broad bean, windsor bean, or horse bean (*Vicia faba*); In China it has two names: (1) Ts'an Tou or silkworm bean, because it is harvested at the time the silkworm is making its cocoon; (2) Han Tou or cold bean, because it grows through the winter. The food products from Ts'an tou (broad bean): Bean shoot (tou miao), Ch'ing tou (as a vegetable), Ja tou (broad bean sprouts), Shien fan and fan bee (made from broad beans and mung beans), Tou sha. The section on the names of beans (p. 1) we will give the English name, Latin name, the classical Chinese names / colloquial Chinese names, and an English translation in parentheses, as follows: (1) Soja bean, *Glycine hispida*: heidou / heidou (black [soy] bean), huangdou / huangdou (yellow bean), yangyandou / yangyandou (sheep eye bean), maliaodou / maliaodou (horse material / feed bean),-/ guguo qingdou (bone wrap green bean),-/ jiajia sandou (pod pod three bean), xiangsidou (mutually think bean) / xiaqngzhidou (fragrant branch bean),-/ bayue baidou (8th month white bean). Soja bean: *Dolichos cultratus* quedou (magpie bean) / equedou (chirp magpie bean). Soja bean: *Phaseolus vulgaris* baidou (white bean) / shui bai dou (water white bean),-/ shidou (fennel bean) (Note 3. shiluo means "fennel"),-/ guashudou (melon ripe bean),-/ maquedou (sparrow bean),-/ niuta biandou (cow tread flat bean),-/ yadou (sprout bean),-/ shijia xiangdou (ten family fragrant bean),-/ xifeng qingdou (west wind green bean),-/ shizi hedou (persimmon pit bean),-/ denglongdou (lantern bean).

Note 4. The large title "Soy Beans" at the top of this table, the right column which says that the English name of each variety is "Soja bean," and the next 8 pages which are only about soy beans, strongly indicate that all the colloquial names in this table refer to different varieties of soy beans. Moreover, all these colloquial names appear again on page 3

in a table on planting and harvest times of different varieties of [soy] beans. The bottom half of the colloquial names are probably from different parts of China, since Dr. H.T. Huang (a soybean expert) has never heard many of these colloquial names before. The most puzzling question is: What are *Dolichos cultratus* and *Phaseolus vulgaris* doing at the bottom of the "Latin name" column? *Dolichos cultratus* is not listed on either of the two comprehensive taxonomy databases (GRIN and ILDIS, which include all past Latin / scientific names). *Phaseolus vulgaris* refers to the common bean, such as the kidney bean, pinto bean, navy bean, frijole, etc.

2. Soy beans. "They were introduced into France during the reign of Ch'ien Lung about 1740 A.D. by a French Consul; into England in 1790, into Australia in 1875, into Germany 1881, and 1888 into America. They were known here from ancient times and were mentioned in the oldest books Pên Ts'ao Kong Mu, which were written by the Emperor Shen-nung in the year 2838 B.C., and the later Chinese Classics."

Note 5. This is the earliest English-language document seen (Aug. 2002) that treats Shen Nung as a real, historical figure, or that says the first written record of the soybean appears in a book written by him. The information about that book is wildly inaccurate. The *Bencao gangmu* (The great pharmacopoeia), perhaps China's most famous materia medica, was written by Li Shizhen (+1596). The above information, which is all wrong, has been cited again and again, down to the present day (2002), in connection with the supposed origin of the soybean.

"Even during the ancient times they were considered by the people to be the most important of the cultivated leguminous plants." Note 6. This is the earliest document seen (Aug. 2002) which states, incorrectly, that the date of Emperor Shen-nung's book is 2838 B.C.

"The methods of cultivation are as follows: In general all of the soja beans are planted in rows along the banks of canals and the boundaries of the fields, which separate the fields of one family from those of another, except those which are called oil beans or Eighth month white bean and Water white bean. These last are planted in large fields. The oil beans are planted early in June." The method of cultivation, harvest, and threshing is then described in detail. A table gives the time of planting and harvest for 18 varieties of Chinese soybeans, grouped into 6 types by planting and harvest dates: (1) Plant in latter part of April, harvest in latter part of Sept.: *Heidou* (black [soy] bean), *huangdou* (yellow bean), *maliadou* (horse material / feed bean), *guguo qingdou* (bone wrap green bean), *jiajia sandou* (pod pod three bean), *xiangzhidou* (fragrant branch bean). (2) Plant in early part of June, harvest in middle part of Sept.: *bayue baidou* (8th month white bean), *shuibaidou* (water white bean), *maquedou* (sparrow bean). (3) Plant in early part of July, harvest in early part of Oct.: *equedou* (chirp magpie

bean). *niuta biandou* (cow tread flat bean), *shijia xiandou* (ten family fragrant bean), *xifeng qingdou* (west wind green bean), *shizi hedou* (persimmon pit bean), *denglongdou* (lantern bean). (4) Plant in early part of April, harvest in early part of July: *guashudou* (melon ripe bean). (5) Plant in early part of April, harvest in latter part of July: *shidou* (fennel bean). (6) Plant in early part of April, harvest in latter part of June: *yadou* (sprout bean).

The rest of the work concerns the food products of the beans, including a detailed description of how each is made.

Note 7. This document contains the earliest date seen for soybeans in Australia or Oceania (1875). It is not clear whether or not these soybeans were cultivated in Australia; they may well have been. The source of these soybeans is unknown, as is the author's source of information concerning that early introduction, 43 years before Shih wrote this booklet. He is the first to give such an early date for the introduction of soybeans to Australia. Yet the date does not seem unreasonably early since there were 17,000 Chinese in Australia by 1855 (see Australian Department of Immigration and Ethnic Affairs. 1985. "A Land of Immigrants"). Address: Biology Dep., Soochow Univ., China.

111. Shih, Chi Yien. 1918. Beans and bean products: Bean curd [tofu], to fu koen [pressed tofu], po yeh [pressed tofu sheets], and yu tou fu [deep-fried tofu] (Document part). Shanghai, China: Soochow University Biology Dept. 13 p. See p. 3-5. [Eng]

• **Summary:** (Cc) = Chinese characters inserted in text. Bean curd (Cc): "The making of bean curd had its origin in the Han dynasty (Cc), during the reign of Huai Nan Wang (Cc) (A.D. 22) at Liuan. All sorts of black beans, yellow beans, green beans, etc. can be used in its preparation; but largely we use the beans which are called Cc (Eighth Month White Bean) *Glycine Hispida* and Cc (Water White Bean or Tenth Month White Bean) *Phaseolus Vulgaris*. The other beans are not so much planted by the farmers for this purpose; they only eat them when the beans are young.

"The processes necessary to prepare Bean Curd are as follows:-(1) Soaking the beans in cold water for six or seven hours in summer time, and twenty-four hours in winter time. (2) Washing the beans thoroughly after soaking. (3) Grinding with cold water [then filtering] to form Bean Milk (Cc = doufujiang). (4) Pouring this into a big kettle and cooking it.

"(5) After about a quarter of an hour, there is a film or skin which floats on the surface of the bean milk. A stick is used to take this up and it is then put aside and left to dry. This film or skin is called Tou Fu Yi (Cc = doufu i = bean + curd + clothes / robes). From one kettle of bean milk, twenty or thirty films can be obtained. If more than this are taken off, the bean milk will become thin and will not be fit to make bean curd.

Note: This is the earliest English-language document

seen (Nov. 2011) that uses the term “Tou Fu Yi” to refer to yuba.

“(6) After boiling the bean milk about half an hour, it is poured into a big earthenware jar and a gypsum or salt solution is added to curdle it. If 133 pounds of beans are used, 6 ounces of gypsum or salt will be required. Then it is left in the jar for about 15 minutes. The curdled material is called Tou Fu Ho (Cc = doufuhua = bean + curd + flowers).”

“(7) A piece of board, about two feet five inches long and one foot five inches wide, is used to make a bottom for a frame slightly smaller than the board and about two inches high. Then a piece of coarse cloth, twice as big as the large piece of board, is used to fold in the frame. The curdled material is poured on the cloth and wrapped up in it. Then another piece of board, as large as the bottom one, is placed on top of the cloth and it is pressed by a heavy block of wood for about fifteen minutes. Then the top board and the frame are removed and a knife is used to divide it into small pieces which are called Bean Curd or Tou Fu.

The price is about five cash for one small piece, about three inches square and one inch thick.

“Tou Fu Koen (Cc = doufugan = tofu + dry): Tou Fu Koen is made from bean curd or Tou Fu. A small piece of coarse cloth, above five inches square, is used to wrap the small pieces of bean curd and they are pressed between two boards, which are used to press the bean curd, for about six hours, then the cloth is removed and the small pieces are cooked in [soy] sauce, or Chiang Yu (Cc = jiangyou). After cooking they are called To Fu Koen.

“Po Yeh (Cc = baiye = 100 sheets / leaves): Po Yeh is prepared from Tou Fu Ho (Cc = doufuhua). The apparatus which is used to prepare the Po Yeh is the same as that used to prepare the bean curd; but is smaller, its dimensions being only about one foot square and eight inches high. A piece of coarse cloth about twenty feet long and one foot wide is used to fold in the frame. At first, one end of the cloth is spread on the bottom of the frame and then a thin layer of Tou Fu Ho is poured on the cloth, and then the cloth is turned back on the Tou Fu Ho and another layer is added, etc., until the frame is filled with the material and it is then pressed with a heavy block of wood about six hours. Then it is brought to the market for sale. The price is about four coppers for one catty.

“When eaten, it is usually first boiled with pork or cabbage, bean curd, turnip, etc.

“Yu Tou Fu (Cc = youdoufu = oil + tofu): Yu Tou Fu is the small piece of Tou Fu which is boiled in the bean oil or rape seed oil. The oil is boiled first and then the small pieces of Tou Fu are poured into the boiling oil. After four or five minutes the small pieces usually float on the surface of the oil and they are then taken out. These are called Yu Tou Fu.

“They are used to boil with cabbage or with meat. Sometimes an opening is made on one side of the Yu Tou Fu and pork cut into very fine pieces is put into it and then it is boiled. It is sold for about twenty cents for one catty.”

Note: This is the earliest English-language document seen (Oct. 2012) that contains the term *Yu tou fu*. Address: Biology Dep., Soochow Univ., China.

112. U.S. Department of Commerce, Far Eastern Div. 1919. Oil and oilseeds of the Orient. *Commerce Reports [USA] (Daily Consular and Trade Reports, Bureau of Foreign and Domestic Commerce, Department of Commerce)* 22(33):611-16. Feb. 8.

• **Summary:** Contents: Introduction. Method of cultivation [and harvesting] in China. Bean curd a Chinese delicacy. Domestic methods of marketing oil in China. Japanese production of vegetable oils [and exports to the United States]. China’s production of oil steadily growing.

Tables show: (1) Total quantity and value of Chinese vegetable-oil exports, and the value of exports to the United States, including transshipments [from Manchuria], in 1917. Of total oil exports, coconut oil is by far the leader in quantity and value, followed by soya bean oil. But of oil exports to the USA, soya bean oil is by far the leader. Dairen exported 90% of the soya bean oil in 1917.

(2) Exports of vegetable oil from China in 1915, 1916, and 1917 (the quantities are expressed in piculs of 133.33 pounds and the values in Haikwan taels worth \$0.62 in 1915, \$0.79 in 1916, and \$1.3 in 1917). Soya bean oil was by far the largest oil export in both quantity and value all three years. The quantity increased from 1.017 million in 1915 to 1.566 million in 1916 to 1.891 million in 1917.

(3) Exports of oil-bearing seeds and beans from China in 1915, 1916, and 1917. Soya beans were by far the largest bean or seed export in both quantity and value all three years. The quantity was 10.235 million in 1915, then 6.732 million in 1916, rising to 7.927 million in 1917.

“No single vegetable product has developed such importance in the Far East as the soya bean... As a food it is the principal ingredient of soy sauce, bean curd, and steamed beans. The bean cake, containing a high percentage of nitrogen, is a valuable fertilizer and is used extensively in Japan, and recently bean oil temporarily replaced petroleum for lighting in China when lack of shipping facilities kept that product off the market. The center of soya-bean production is Manchuria, and Japan is the chief crusher and producer of oil and cake, though the manufacture of bean oil and cake is also a very important industry of Dairen, Kwantung Leased Territory. Mukden is the center of the bean trade and the beans are there bought for cash from the farmers.”

“Bean curd a Chinese delicacy: Bean curd is made mostly from the two kinds of oil beans described [Eighth Month White Bean and Water White Bean], although all varieties may be used in its preparation. As a rule, however, the other varieties of beans are not planted for oil or curd, but are eaten steamed when the bean is young and tender.

“Bean curd is prepared by first steeping the beans in cold

water for 6 or 7 hours in summer or 24 hours in winter, and, after washing, grinding with cold water to form a bean milk. This milk is cooked in a large kettle and the film removed from the surface after a quarter of an hour and dried. This film or skin is known as Tou Fu Yi [doufu pi, usually called “bean curd skin” in English; yuba in Japanese] and 20 or 30 films can be obtained from a kettle without thinning the milk too much. After boiling half an hour the remaining milk is poured into a jar and a gypsum or salt solution added to curdle it. The proportion is 6 ounces of salt to 1 picul (133.33 pounds) of beans.

Note 1. This is the earliest English-language document seen (Oct. 2010) that uses the term “doufu pi” (regardless of hyphenation or spacing) to refer to yuba.

Note 2. Yuba is described as an early step in the tofu-making process. Viewed in this way, the word “bean curd skin” makes more sense.

“After standing 15 minutes a curdled substance called Tou Fun No [bean curd brain] is the result. This product is molded in wooden frames by a heavy block of wood for 15 minutes and is then cut into small pieces with a dull brass knife. A piece 2 inches square and half an inch thick retails for 5 cash (0.5 cent). This curd forms the basis for numerous Chinese articles of food and is prepared in various ways. Perhaps the most usual form of serving is to press the curd, wrapped in cloth, for six hours in a box 1 foot square and 8 inches high and then cook in oil. It is also boiled, after such preparation, with pork or cabbage.”

“Japanese production of vegetable oils: The present estimated production of Japanese oil mills is 90,600 long tons of vegetable oils annually and is made up as follows: Soya-bean oil, 37,509 tons; coconut oil, 27,542 tons; rapeseed oil, 17,848 tons; cottonseed oil, 6,433 tons; and peanut oil, 1,268 tons. Seventy-five per cent of this crush is made in the Kobe district and is handled by 25 oil mills, modernly equipped.” In 1917 Japan exported (including transshipments) 34,916,260 lb of coconut oil, 22,643,623 lb of soya bean oil, and 19,677,825 of rapeseed oil. He concludes that “American importers of Far Eastern products may well investigate the domestic market for Far Eastern oilseeds with a view to supplying oil mills in the U.S. with raw material.” A table shows import and export data. Address: Asia.

113. Rouest, Leon. 1919. Étude sur le soja [Studies on the soybean]. *Genie Rural (Le)* 11(99-100):23-26. (New Series Nos. 39-40). Continued: See Rouest 1920. [Fre]

• **Summary:** Gives a brief overview of the history of soya in Europe and France, including Li Yu-ying, Dr. Bloch, the Soyanna [sic, Soyama] Werke near Bockenheim, Messrs. Paillieux, Sagot, Raoul, and Jumelle, and the various soyfoods from China and Japan that they describe (Miso, shoyu {*Shoyua*}, tofu {*Tofou*}, dried frozen tofu {*Kouri Tofou*}, yuba {*Uba*}), and the potential threat of soya to

the French cheese industry. “Finally in 1910-11 numerous soy products were presented at the expositions in Brussels [Belgium], Turin [France], and Dresden [Germany].”

Describes work on the *Ferme Expérimentale de Néoculture du Sud-Est*, at Villardonne, Aude. Mr. Semichon, Director of the wine station at Aude, sent this experimental farm some soybean seeds which he received from the USDA accompanied by a bulletin written by William Morse (probably “The soy bean: Its culture and uses,” 1918). Rouest translates the Bulletin into French. The most important varieties mentioned are: Mammoth, Hollybrook, Ito San, Guelph, Haberlandt, Medium Yellow, Wilson, Peking, Tokio, Manchu, Black Eyebrow, Barchet.

Rouest was born on 11 Nov. 1872 in Paris; he died on 27 Feb. 1938 in Chartres, France. Illustrations (line drawings, both non-original) show: (1) Soja hispida plant, with close-up of a cluster of pods. (2) Soja Hato soybean plant. Address: Director, *Ferme Expérimentale de Néoculture du Sud-Est*, at Villardonne (Aude), France.

114. U.S. Tariff Commission. 1920. Summary of tariff information, 1920; prepared for the use of the Committee on Ways and Means, House of Representatives. Washington, DC: Government Printing Office. 1004 p. See p. 320-22, 779-80, 990. [7 ref]

• **Summary:** Contains a description of the soybean, its uses, production, and quantities imported, and the tariff regulations applicable to the various soy products.

Paragraph 200, page 321: “The provision in this paragraph for ‘bean stick [dried yuba sticks] or bean cake, miso, and similar products,’ covers a Japanese food product made from ground soja (soya) beans and water, known as frozen tofu or koya-dofu, and fried tofu or hoshi aburage, the frozen tofu or koya-dofu being in the shape of small, porous, yellow cakes about one-half inch thick, from 1½ to 2 inches square, and the fried tofu or hoshi aburage being in thin cakes one-quarter inch thick and 2½ to 5 inches in diameter, which have been fried in some kind of oil or grease. Even if not bean cake it is dutiable as a product similar to bean cake, bean stick, and miso. (G.A. 8045, T.D. 37079, of 1917, following Abstract 29577, T.D. 32780, of 1912.) ‘Amasake,’ made from rice yeast (30 per cent) and boiled rice (70 per cent), used as a drink among the Japanese, was likewise classified as a ‘similar product,’ apparently as similar to miso. (Abstract 31147, of 1913).

Oil cake produced from the soya bean is free of duty as oil cake provided for in paragraph 560. (Abstract 23794, T.D. 30828, of 1910).”

Paragraph 201, p. 321-22: In the Act of 1909, sauces of all kinds were subject to a 40% ad valorem duty; this decreased to 25% in the Act of 1913. Thick sauces include dressings and condiments such as chutney. “Thin *Chinese soy* made by mixing cooked soy beans with wheat flour, salt, and water and exposing to the sun for about three months,

used to flavor and color soups, fish, and meats, about 80 per cent being used in the kitchen and about 20 per cent on the table, is dutiable as a sauce hereunder and not as a nonenumerated manufactured article under paragraph 385. (9 Ct. Cust. Appls., -, T.D. 37976, of 1919.) *Japanese shoyu* is also classified as a sauce under this paragraph. (T.D. 37574, of 1916; Abstract 43496, of 1919.)”

Paragraph 606, p. 779-80. A duty is first levied on soya beans in the Act of 1913.

“Description and uses.—*Soya beans* used in oil mills, the important consumers, are chiefly imported. Soya-bean cake, or meal, a by-product of oil manufacture, is a valuable cattle feed and enters extensively into international trade. (See pars. 560 and 561.) In China and Japan the beans, cake, and oil are elaborated into a large number of food products, such as milk, cheese, flour, bean cake, and soya sauce... Except by resident Asiatics there is only a limited use of soya beans for food purposes.

“Production.—Soya-bean culture has recently developed rapidly... Imports of *soya beans*, too small to be listed separately prior to 1914, rose from about 2,000,000 pounds in 1914 to about 32,000,000 pounds in 1918; during the same period imports of soya bean *oil* rose from 16,000,000 to nearly 337,000,000 pounds.

“*Soya beans cooked and salted*, but not enough to so change them as to prevent their identification as soya beans, and packed in tins, jars, bottles, or similar packages, do not thereby lose their status as soya beans and are free of duty under this paragraph rather than dutiable under paragraph 199. (6 Ct. Cust. Appls., 415, of 1915.) *Soya beans* in stone jars and hermetically sealed tins, invoiced as *bean sauce*, were likewise classified, and not dutiable as prepared beans under paragraph 199, nor as sauce under paragraph 201. (G.A. 8217, T.D. 37860, of 1918.) *Beans* and *bean sauce* prepared or preserved in tins, jars, bottles, or similar packages, were also held free of duty under this paragraph, analysis of the samples showing them to be soya beans, either natural or prepared. (Abstract 41021, of 1917.)... A *black bean* known to the Japanese as *Kuromame*, was held not to be free of duty under this paragraph, the evidence being insufficient to prove that the merchandise was soya beans. (Abstract 42852 of 1919.)” Address: Washington, DC.

115. Embrey, Hartley; Wang, Tsan Ch'ing. 1921. Analyses of some Chinese foods. *China Medical Journal* 35(3):247-57. May. [5 ref. Eng]

• **Summary:** Contents: Introduction. Classification of food stuffs: Protein, carbohydrates, fats, etc. Method of calculating food values. Description of the foods analyzed: Methods of preparation. Table of analytical data. A brief description is given of how Bean Curd or “Tou Fu” is made in Peking from Yellow Soy Beans. The residue, on top of the sieve, is washed once with hot water then “sold as food for animals or for very poor people. Its Pekingese name is ‘Tou

Fu Cha,’ which means ‘Bean Curd Dregs.’

“The filtrate [soymilk], consisting of particles which have passed through the sieve, together with the washings from the coarser residue remaining on the sieve, is heated for about half an hour. A film or skim [yuba] forms on top, which is carefully removed with a stick, and put aside to dry. The first films which are called ‘T’ien Chu,’ those forming still later ‘Yu P’i,’ and the last ones which form are called ‘Fu Chu.’ From fifteen to twenty such films may be removed without affecting the value of the ‘Tou Fu,’ but as a rule the films are not removed when the manufacture of ‘Tou Fu’ is the main object.

Note 1. This is the earliest English-language document seen (Oct. 2012) that describes three different types and grades of Chinese-style yuba, based on the order in which the films are removed. Consider the following very interesting statement concerning yuba and tofu: “From fifteen to twenty such films may be removed without affecting the value of the ‘Tou Fu,...’”

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the term “Yu P’i” (regardless of capitalization) to refer to yuba—specifically to the middle grade of yuba, or that uses the term “Fu Chu” (regardless of capitalization) to refer to yuba—specifically to the lowest grade of yuba.

The ‘Tou Fu’ is precipitated by adding the precipitating reagent ‘Lu Shui’ [nigari], a salt solution usually containing gypsum, to the filtrate. It may be added without removing the films or after the films are removed. In the former case the amount of ‘Tou Fu’ precipitated is greater, and its composition is somewhat different. The ‘Tou Fu’ analyzed by us was precipitated without previously removing the films.”

“‘Tou Fu Kan,’—This is made from ‘Tou Fu’ or Bean Curd. The small pieces of curd are wrapped in coarse cloth and pressed between two boards for half a day. Then the cloth is removed and the curd boiled with salt and ‘Wu Hsiang,’ or the ‘Five Condiments,’ viz., cayenne pepper, aniseed, dried orange peel, cassia bark, and star anise. After this it is boiled with ‘T’ang Se,’ or black sugar residue to give it a dark color.” Note: This is the earliest document seen (Feb. 2002) that mentions five-spice pressed tofu, or any type of seasoned or flavored tofu.

“‘Yu Kan or T’sai Kan.’ [sic, Ts’ai Kan]—Bean Curd is boiled in salt solution, cut into small pieces about one inch wide, three inches long and one inch thick, and smoked with the smoke produced from burning sawdust.”

A table (p. 255-57) gives nutritional analyses for the following foods; many of the methods of preparation are described earlier, and each food is accompanied by its Chinese characters: “Bean curd made from green mung bean (*ma tou fu*). Yellow soya or Soya max (*huang tou*, yellow bean soybeans). Bean curd from the yellow soya (*tou fu*, bean curd). Refuse from the yellow soya bean (*tou fu cha*, bean curd dregs [okara]). Tou fu boiled in salt and spices

(*tou fu kan*). Sprout from the yellow soy bean (*Huang tou ya*, yellow bean sprout). Skim [Skin] which forms on boiled soy bean milk (*yu p'i*, oil skin [yuba]). A later skim from boiled soy bean milk (*fu chu*). Smoked bean curd (*yu kan*). Green soya or Soya max (*Ch'ing tou*, green bean). Green soy sprouts root removed (*ch'ing tou ya*, green bean sprouts). Red gram or *Phaseolus angularis*, Willd. (*adzuki*, *hung hsiao tou*, red small bean). Mottled gram or *Phaseolus angularis*, Willd. (*adzuki*, *hei hsiao tou*, black small bean). Black soya or Soya max (*wu tou*, black bean). Small black soya or Soya max (*hsiao hei tou*, small black bean)."

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term "Yu Kan" or "Ts'ai Kan" [pinyin: yougan or caigan] to refer to smoked tofu. Address: Labs. of Food Chemistry, Peking Union Medical College, Peking, China.

116. U.S. Tariff Commission. 1922. Summary of tariff information, 1921, relative to the bill H.R. 7456. Washington, DC: Government Printing Office. 1625 p. See p. 152, 786-87, 802-03.

• **Summary:** "The principal sources of information have been the commodity surveys and reports of the Tariff Commission, especially the 'Summary of Tariff Information, 1920.' The material in the latter has been amplified and brought up to date."

Soybeans are more specifically dealt with in the 1920 Summary. Soybean oil, however, is considered in H.R. 7456.

The section titled "Soya-bean oil" (p. 152-53) states: "Description and uses... This oil "is a semi-drying oil used in paint either as a substitute for or mixed with linseed oil. Its greatest use is in soap making, for which it has largely replace cottonseed oil, but the purified oil is edible. After the oil is expressed the cake becomes a feed for dairy cattle or a fertilizer.

"*Production* of soya beans has increased greatly, but only a small portion of the crop is used for oil. In 1915 approximately 100,000 bushels of American-grown beans were pressed for oil. The domestic output of oil (inedible and edible) increased from 2, 764,000 pounds in 1914 to 42,074,000 pounds in 1917 and 79,861,000 pounds in 1918. Reports of the Bureau of the Census show that no crude soya-bean oil has been produced either from domestic or imported beans in this country from 1919 to September 30, 1921, inclusive. The oil is imported in the crude state and refined in this country.

"*Imports* have increased from 16,360,452 pounds in 1914 to 336,824,646 pounds in 1918, the great bulk coming from China and Japan. Imports since 1917, almost wholly from Kwangtung, China proper, and Japan, have been as follows:"

A table shows that imports fell rapidly after 1918 (and the end of World War I) to 195.8 million lb in 1919, 112.5 million lb in 1920, and only 16.3 million lb in the first 9

months of 1921. The value per pound plunged from \$0.11 in 1918 to \$0.04 in 1921.

Exports since 1918 have been chiefly to Italy, France, and Austria. A table shows the quantities: 27.7 million lb in the last 6 months of 1919, 43.5 million lb in 1920, but only 1.93 million lb in the first 9 months of 1921.

"Important changes in classification.—Soya-bean oil was exempt from duty under the Act of 1913 (par. 561); it is dutiable under the emergency tariff act of 1921 (par. 11)."

The next section, titled "Hempseed oil" (p. 152) states that this oil is obtained from the seeds of the hemp plant, cultivated in France, Belgium, Germany, southern Italy, Turkey, Algeria, North America, India, Manchuria, and Japan. It is used mainly in paint as a drying oil.

Soya beans are also mentioned under "Beans" (p. 786). Under "Beans, prepared or preserved" (p. 787) we read: "Soya beans are also made into various food preparations, especially for use by orientals." A table shows that imports of such soya beans increased from 1.43 million lb in 1918 to 3.4 million lb in the first 9 months of 1921.

The section on "Vegetables prepared or preserved" (p. 802-03) states: "Bean stick [probably dried yuba sticks] or bean cake is an oriental food product made from ground and fermented soya beans. Miso is a cooked and fermented combination of rice and soya beans, generally used in making soup." "Imports of bean stick or bean cake and miso were valued at \$73,097 in 1914, soya bean cake constituting about 40%. Edible bean cake and miso are imported to meet the demand of the oriental population." A table shows that there was a 25% duty on such products and imports and value dropped from 1918 to 1921. Address: Washington, DC.

117. Piper, Charles V.; Morse, William J. 1923. The soybean. New York, NY: McGraw-Hill Book Company, Inc. xv + 329 p. Feb. Illust. Index. 24 cm. Reprinted unrevised in 1943 by Peter Smith Publishers, New York. [563 ref]

• **Summary:** This is the first comprehensive book about the soybean written in English, and the most important book on soybeans and soyfoods written in its time. Contains an excellent review of the world literature on soybeans and soyfoods with a bibliography on soy that is larger than any published prior to that time (563 references), a good description of the present status of the soybean worldwide based on the authors' extensive contacts, and a great deal of original information. It quickly became a key source for people and organizations working with soybeans and soyfoods in all countries, and a major factor in the expansion of the soybean in the western world. Because of its scope and influence, Soyfoods Center considers the year of its publication to mark the end of the "Early Years" of the soybean worldwide. It remained in print until about 1986.

Contents: Preface. 1. Introduction: Name of the plant, origin, literature, use by the Chinese and Japanese, present importance, future prospects in the U.S., recognition

of the possibilities. 2. The commercial status of the soybean: Manchuria and China, Japan, Europe, U.S., other countries, summary of imports and exports of soybeans and soybean oil. 3. Botanical history of the soybean: History prior to Linnaeus' "Species Plantarum" 1753, Linnaeus' misunderstandings of the soybean, Prain's elucidation, other and the correct botanical name.

4. Agricultural history of the soybean: Vernacular names of the soybean, China, Korea, and Japan, India and neighboring regions, Cochin China, Malayan region, early introduction into the United States, later U.S. introductions, the early introduced varieties (grown in the USA by 1898—Ito San, Mammoth, Buckshot, Guelph or Medium Green, Butterball, Kingston, Samarow, Eda, Ogema or Ogema), soybean in Europe, varieties grown in Europe and identification, Hawaiian Islands, Australia, Africa, Argentina (p. 50), Canada ("Soybeans are grown in very small quantities in Canada and then usually as a forage crop"), Philippines, Egypt, Cuba (p. 52), British Guiana, Mauritius (p. 53), present culture distribution. 5. Culture of the soybean: Climatic adaptations, soil preferences, water requirement, preparation of seed bed, time of planting, methods and rate of seeding, seeding for pasturage, depth of seeding, inoculation, fertilizer reactions, cultivation, soybeans in mixtures (with cowpeas, sorghums, Sudan grass, Johnson grass, millet, corn, or sunflowers and corn).

6. Harvesting and storage of soybeans: harvesting soybeans for hay, silage, for the seed, seed yields, proportion of straw to seed, storing seed, separation of cracked from whole soybean seed, viability of soybean seed, pedigreed, inspected, registered, and certified seed. 7. Composition of the soybean: Proportions of stems, leaves and pods, composition of plant and seed, nutritive and mineral constituents, forms of nitrogen in soybean nodules, factors affecting oil content of seed. 8. Utilization of the soybean: Diversity of uses (a chart, p. 129, shows 59 products that can be made from soybean seeds, and 6 more that can be made from soybean plants), soybeans for green manure, pasturage, soiling, ensilage, hay, straw.

9. Varieties: Japanese, Manchurian, botanical classifications, vital characteristics, descriptions of important varieties, key for identification, breeding and improvement, genetic behavior, oil content.

10. Structure of soybean seeds. 11. Soybean oil: Methods of extraction [Manchurian, and solvent], American oil mills, methods of shipping and marketing, prices, utilization in soap manufacture, food, paint manufacture, miscellaneous. 12. Soybean cake or meal: Feeding value, composition, use for feeding for dairy cows, cattle, swine, sheep, poultry, digestibility, injurious effects, fertilizer.

13. Soybean products for human food: Food value of the soybean, digestibility of the soybean and its products, mature or dry soybeans, immature or green soybeans (a "nutritious green vegetable"), soybean flour, digestibility of soybean

flour, soybean bran (p. 225-26), soybean sprouts, soybean coffee, soybean or vegetable milk [soymilk] (preparation, composition, residue from the manufacture of vegetable milk [okara], utilization of soybean milk, condensed vegetable milk, vegetable milk powder, fermented vegetable milk), vegetable casein, tofu or soybean curd (names and brief history, method of manufacture, coagulating agents, manufacturing yields, digestibility, utilization of bean curd and manufactured products, bean curd brains or *tofu nao*, dry bean curd or *tofu khan*, thousand folds {*chien chang tofu*}, fried bean curd {*tza tofu*}, Fragrant dry bean curd {*hsiang khan*}, frozen tofu {*kori tofu*}, Chinese preparation, various dishes), natto, hamananatto [hamanatto], yuba, miso, shoyu [soy sauce], confections. 14. Table dishes of soybeans and soybean products: mature or dry beans, flour, tofu, sprouts (86 recipes). 15. Enemies of the soybean: bacterial, mosaic, fungous [fungus], and nematode diseases, insects, rodents. This last chapter is a comprehensive review of the literature on soybean diseases and insects published before 1922.

The Preface begins: "The soybean, also known as soya or soja bean, has assumed great importance in recent years and offers far-reaching possibilities of the future, particularly in the United States. It is, therefore, desirable to bring together in a single volume the accumulated information concerning this crop..."

"The aim has been to present the information so as to make it useful from both agricultural and commercial standpoints, not omitting, however, much that is mainly of historical or botanical interest..."

The introduction begins: "There is a wide and growing belief that the soybean is destined to become one of the leading farm crops in the United States."

Note 1. C.V. Piper lived 1867-1926. Note 2. This is the earliest English-language document seen (July 2003) that uses the term "soybean bran" to refer to soy bran.

Note 3. This is the earliest document seen (July 2003) in which Piper or Morse describe natto, Hamananatto [Hamanatto], yuba, or miso.

Note 4. This book was published by March 1923 (See *Ohio Farmer*, 10 March 1923, p. 313). Address: 1. Agrostologist; 2. Agronomist. Both: United States Dep. of Agriculture, Washington, DC.

118. Piper, Charles V.; Morse, William J. 1923. Yuba (Document part). In: Piper and Morse. 1923. *The Soybean*. New York: McGraw-Hill. xv + 329 p. See p. 246-47.

• **Summary:** "When soybean milk is boiled, a film forms on the surface. This film, known as yuba, has been prepared since ancient times in China and Japan, and is a very popular foodstuff. It is very brittle and is sold in sticks, sheets, or small flakes. In cooking, yuba is used as a wrapper, cut into ribbons, or small pieces and either fried or used in soups.

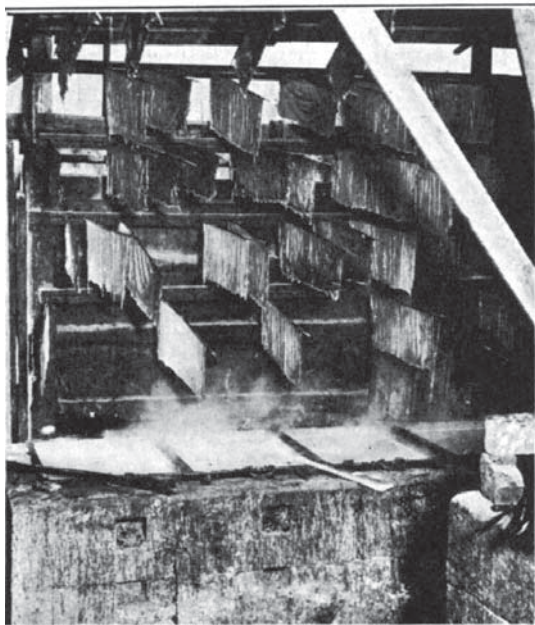
"In the preparation of yuba, soybean milk of the best quality is boiled for about one hour in a copper pan over

a slow fire. A small quantity of auramine [a bright yellow ketonimine dye] is added which tends to produce a thick film. The film is removed from the milk by passing a stick underneath the surface, the film thus hanging on in two-fold (Fig. 72). It is dried slowly on a galvanized net over charcoal fire, resulting in a thin yellowish sheet.

“The best quality of yuba is glossy and of a cream-yellow color. The first film is the best and the quality of the succeeding films gradually becomes inferior.

“The milk obtained from 3 lb. of beans is said to produce about thirty sheets of yuba. The [rather thick, semisolid] residue of the milk after the films are removed is still rich in nutrients, and is used mostly for food. It may also be used as animal feed.

“Yuba is valued chiefly on account of its high content of protein. It consists mainly of albuminoids and fat. The composition of yuba is shown in the following table” [Sources: Oshima / Nagao]: Water 18.31 / 22.85. Protein 49.65 / 51.60. Fat 18.00 / 15.62. Carbohydrates 11.82 / 7.31. Ash 2.22 / 2.82. Note: The source of the information from Nagao is not cited.



A photo (p. 246) shows “the boiling of soybean milk in copper pans over a mild fire in the manufacture of yuba.” About 25 sheets of yuba are hanging in two-fold over sticks several feet or more above the pans.

Note 1. This is the earliest known photo of yuba being made commercially. It may well have been taken by Frank N. Meyer during one of his early trips as a USDA agricultural explorer to Japan or China.

Note 2. This is the earliest known practical and useful description of how yuba is made on a commercial scale.

Note 3. This is the earliest document seen (Oct. 2012) in which Piper or Morse describe yuba.

119. Piper, Charles V.; Morse, William J. 1923. Tables (Document part). In: Piper and Morse. 1923. *The Soybean*. New York: McGraw-Hill. xv + 329 p.

• **Summary:** Tables: (1) Acreage, production and yield of soybean seeds in the United States. Gives statistics for each for 1918, 1919, and 1920 for 14 states, other, and total. The states are listed in descending order of soybean acreage in 1921, as follows: North Carolina, Virginia, Alabama, Illinois, Ohio, Kentucky, Missouri, Tennessee, Wisconsin, Indiana, Georgia, Pennsylvania, S. Carolina, Mississippi.

(2) Estimates of soybean production of Manchuria for various years (in million tons): 1906 = 0.6. 1907 = 0.6 to 0.9. 1908 = 1.150. 1909 = 1.150. 1910 = 1.4. 1913 = 1.2 1921 = 4.52.

(3) Cost of production of soybeans per acre in Manchuria, 1910. (4) Monthly capacity of steam oil mills at Newchwang, Manchuria, 1917. (5) Export of soybeans, bean cake, and bean oil from the principal ports of South Manchuria, 1909 to 1913, inclusive. (6) Five-year averages of acreage, production, and yield per acre of soybeans in Japan. (7) Amount and value of soybeans imported by Japan. (8) Importations of soybean cake and bean oil into Japan. (9) Quantity and value of exports of soybeans and soybean oil from Japan to foreign countries, 1913 and 1914. (10) Quantity and value of exports of miso (bean cheese) and shoyu sauce, 1903 to 1907, inclusive. (11) Quantity and value of imports of soybeans, bean cake, and bean oil by European countries, 1912 to 1914, inclusive. (12) Comparative prices per ton of cottonseed and soybeans in European markets, 1911 to 1914, inclusive. (13) Quantity and value of soybeans, soybean cake, and soybean oil imported into the United States, 1910 to 1920, inclusive. (14) Quantity of imports of soybeans in the world's trade, 1920-1919 inclusive. (15) Quantity of imports of soybean oil in the world's trade, 1910-1919 inclusive. (16) Quantity of exports of soybean oil in the world's trade, 1910-1919 inclusive. (17) Quantity of exports of soybeans in the world's trade 1910-1919 inclusive. (18) Acre yields of seed and hay of soybeans at different dates of planting at Arlington Farm, Virginia. (19) Yields of soybeans variously spaced. (20) Acre yields of soybean hay and seed when planted at different rates. (21) Germination of soybeans at different depths of planting at Arlington Farm, Virginia. (22) Influence of nodules on the composition of seed. Michigan Experiment Station. (23) Effect of various nitrogenous fertilizers on the yield of soybeans. Massachusetts Experiment Station. (24) Effects of different phosphatic fertilizers with and without lime. Rhode Island Experiment Station. (25) The influence of different potash salts on yields of soybeans. Massachusetts Experiment Station. (26) Effects of different kinds of lime on the yield of soybeans. Massachusetts Experiment Station. (27) Effect of fertilizers on soybeans. Delaware Experiment Station. (28) Composition of hay of Mammoth soybean at

different stages of development. Arlington Farm, Virginia. (29) Comparison of the loss in moisture in 10-lb. samples of green forage of ten varieties of soybeans when air dried. Arlington Farm, Virginia. (30) Tons of soybean hay to the acre at different experiment stations in the United States. (31) Bushels of soybean seed to the acre at different experiment stations in the United States. (32) Relative yields of straw to seed in different varieties of soybeans. Ohio Experiment Station. (33) Viability of soybean seed. (34) Proportions of stems, leaves, and pods. (35) Nutritive constituents contained in each part of the soybean plant. After Lechartier. (36) Composition of the different parts of the soybean plant at different stages of growth, at Arlington Farm, Virginia. (37) Total weights of mineral materials in 1,000 kilos of dry forage. After Lechartier. (38) Mineral Materials in 1,000 kilos of dry forage. After Joulie. (39) Percentages of nitrogen, phosphoric acid and potash contained in different parts of the soybean plant at different stages of growth, at Arlington Farm, Virginia. (40) Composition of soybean seed compared with that of other legumes. (41) Composition of common American varieties of soybeans. (42) Percentage composition of the different parts of soybean seed. After Lechartier. (43) Percentage composition and comparison of the amino acids of the protein of the soybean and of cow's milk. (44) Percentage composition of the nitrogen-free extracts of the soybean. (45) Starch content of commercial varieties of soybeans in the United States. (46) Maximum, minimum, and average of the more important constants of soybean oil from 48 varieties, compared with those of other well-known oils. (47) Comparison of the more important constants of soybean oil by different observers. (48) Constants for soybean oil. (49) Composition of the ash of the soybean seed. After Pellet. (50) Mineral content of the soybean seed compared with those of cowpea, navy bean, and peanut. (51) Oil content of soybeans gathered at various stages of maturity. (52) Oil content of soybeans as affected by partial defoliation. (53) Oil content of soybeans as affected by partial removal of very young seed pods. (54) Oil content of soybeans of large and small size seed from the same plant. (55) Oil content of soybeans planted at intervals of two weeks in 1911, at Arlington Farm, Virginia. (56) Varietal differences in the oil content of soybeans grown at Arlington Experiment Farm, Virginia, in 1907, 1908 and 1910. (57) Oil content of soybeans grown under different environmental conditions. (58) Oil and protein content of soybean varieties grown under different environmental conditions. (59) Fertilizing constituents of soybeans contained in crop and roots on one acre. Connecticut (Storrs) Experiment Station. (60) Yields of hay of different legumes and content of fertilizing ingredients. Michigan Experiment Station. (61) Fertilizing constituents of soybeans cut at different stages of growth. Arlington Farm, Virginia. (62) Data and results of soiling experiments with milch cows. Iowa Experiment Station. (63) Soybean soiling experiment with milch cows, Pennsylvania Experiment Station. (64) Analyses of soybean, soybean and corn, and corn silages. (65) Digestibilities of soybean and other silages. (66) Digestible nutrients in 100 lb. of air-dry substance. (67) Digestible nutrients in 100 lb. of soybean straw and in other roughages. (68) Fertilizing constituents of soybean straw compared with those of wheat, oats, barley, and rye. (69) Number of seeds per bushel and weight in grams of 100 seeds of the most important varieties. (70) Results of planting a single variety of soybean at different dates. Vienna, Austria, 1877. (71) Results of planting different varieties of soybeans at different dates at Knoxville, Tennessee. (72) Life period of soybean varieties grown at the Arlington Experimental Farm, Virginia, for eight seasons. (73) Life periods of American varieties of soybeans grown at Sabour, India, 1911 (from Woodhouse and Taylor, 1913). (74) Life period of soybean varieties planted at intervals of two weeks in 1911 at the Arlington Experimental Farm, Virginia. (75) Behavior of flower color in natural hybrids. (76) Behavior of pubescence colors in natural hybrids. (77) Behavior of amount and colors of pubescence in an artificial hybrid. (78) Behavior of the color of pods in natural hybrids. (79) Behavior of seed colors in natural hybrids. (80) Soybean crosses in the study of seed color. (81) Behavior of cotyledons in natural hybrid selections. (82) Behavior of cotyledons in soybean crosses. (83) Variations in the cooking qualities of seed of different varieties of soybeans. (84) Consumption of vegetable oils by the soap industry in the United States. (85) Consumption of vegetable oils in the production of lard substitutes and oleomargarine in the United States. (86) Composition of soybean cake, meal, and other important oil feeds. (87) Two 17-week comparisons of soybean meal with other supplements for fattening pigs. (88) Growth and nitrogen elimination of chicks fed varying amounts of meat scrap or soybean meal or both, in addition to a corn ration. (Indiana Experiment Station). (89) Comparison of the digestibility of soybean meal and other oil meals. (90) Digestion coefficients of soybean meal obtained with sheep. Massachusetts Experiment Station. (91) Fertilizing constituents of soybeans, soybean meal, and cottonseed meal. (92) Analyses and calories of soybeans compared with those of other legumes and foods. (93) Composition of soybean flour in comparison with wheat flour, corn meal, rye flour, graham flour, and whole wheat flour. (94) Composition of the sprouts from the soybean and mung bean. (95) Composition of soybean milk compared with cow's milk. (96) Yields of bean curd obtained from different varieties of soybeans. (97) Compositions of tofu and tofu products. (98) Nitrogenous substances in natto. (99) Composition of hamananatto. After Sawa. (100) Composition of yuba. (101) Composition of red and white miso. (102) Composition of shoyu or soy sauce. (103) Composition of soybeans of the same variety dried, soaked, and roasted.

120. Maxwell, John Preston; Liu, J.L. 1923. A Chinese household manual of obstetrics [*Ta Sheng P'ien*]. *Annals of Medical History* 5(2):93-99. See p. 98. [1 ref]

• **Summary:** This article is a summary of and commentary on the *Ta Sheng P'ien*, which “claims to have been written by a Chinese scholar at Nan-chang, Kiangsi, in the reign of Kang Hsi. This Emperor reigned in 1661 A.D.”

“The book disclaims being a treatise on the principles of obstetrics and is not a pharmacopeia, but lays especial stress on prenatal treatment.”

“The best kinds of food are as follows: Pig’s stomach; pig’s lungs, chicken, duck, fish (carp), sea slugs, cabbages, spinach, bamboo sprouts; sesamum oil; skin of bean curd [yuba]; water lily seeds;... These foods are to be cooked by boiling and not fried in oil.

“After the seventh month one should take as much sesamum oil and bean-curd skin as one can. The oil acts as an antitoxin and the bean-curd skin as a lubricant for the fetus, cleaning and toning it up.

“The pregnant woman is to avoid the following things: Pepper; ginger; fried food; especially tasty articles; pig’s flesh; dog’s flesh; ass’ flesh; horse’s flesh... Do not drink too much wine. Do not take too much medicine.” Address: 1. M.D., London; 2. Graduate, Shantung Christian Univ. Contribution from the Dep. of Obstetrics & Gynecology, Peking Union Medical College [China].

121. Loew, Oscar. 1924. The soy bean, a superior crop. *Porto Rico Agricultural Experiment Station, Agricultural Extension Notes* No. 64. p. 1-2. Jan. 15.

• **Summary:** “The soy bean originated in Eastern Asia and has been introduced during the past 30 years into different countries of the world. It can be grown successfully even in a rather poor soil, in the absence of nitrogenous manure, provided the specific root-nodule bacteria are present. This plant is far superior to other leguminous crops, even those very rich in protein, as the lupin, which it equals in protein and highly surpasses in fat content. In fact, the soy bean is richer in fat than all other leguminous crops and is, therefore, sometimes called the oil bean. The soy bean does not contain alkaloids and bitter tasting matters like the lupin...”

A table compares the nutritional composition of the pea, common bean, lupin, and soy bean. “From the analyses it would appear to be of great advantage for the people of Porto Rico to replace the common bean now serving as an essential part of the daily food, by the soy bean, it providing a higher percentage of protein and fat... Since the Soy bean needs prolonged boiling until it reaches a sufficient degree of softness, it is best soaked for a day in water to which some soda and common salt are added (about a teaspoonful of each to half a liter) followed by washing two to three times with fresh water and then boiling for an hour or so. The taste of this dish is very agreeable.

“In Japan the soy bean serves for several preparations, called ‘tofu,’ ‘yuba’ and ‘miso,’ which might be prepared in Porto Rico. Also, a dressing or condiment similar to the English Worcestershire sauce, is prepared from the seeds.” The preparation of tofu is described. It is “generally fried like cakes and represents an excellent food.”

“The milky liquid can also doubtless be used as a suitable nutrient, but it can never replace the mother’s or cow’s milk for children, since the lime content is exceedingly small and the protein differs widely from the casein of the milk.

“In our trials with soy beans at the Experiment Station, Mayaguez, the results at first were disappointing. This was found to be due to the fact that the soil was not inoculated with the proper bacteria for assimilating nitrogen for the roots. We now have inoculated soil, and before planting on ground new to this crop inoculating material should be secured from the Station for mixing with the seed at the time of planting. When the soil is once inoculated it will remain so for all succeeding crops.”

Note: Who was Dr. Oscar Loew and how did he learn about soyfoods? From 1897 to 1906 he was a Professor of Agricultural Chemistry at the Imperial University of Tokyo, Japan, where he wrote articles about soy sauce, tofu, soymilk, and yuba. In 1911 he was in Munich, Germany, where he wrote an article about soymilk. When he speaks of “our trials with soy beans at the Experiment Station, Mayaguez,” he seems to indicate that he was living at the Station in Porto Rico in about 1924. Address: Mayaguez, Porto Rico.

122. *Toronto Daily Star (Canada)*. 1924. Bean ‘cream’ winter food. April 3. p. 2.

• **Summary:** “Chinese priests dry the ‘cream’ [yuba] of soya beans after they have been boiled and store it for use as a winter food.”

123. *Nautical Gazette*. 1924. Sidelights. 106:457. April 26.

• **Summary:** The third full paragraph on the right side of the page reads: “When the *President Adams*, the first steamer in the new around-the-world service of the Dollar Line to arrive at the Panama Canal reached Colon [a sea port on the Caribbean Sea coast of Panama] she gave an order for the following supplies, intended for her Chinese crew: Chinese cabbage,... black beans (salted) [fermented black soybeans], bean sticks [dried yuba sticks], salted eggs, seaweed, salted ginger,... [soy] bean sauce, plum sauce, dried flat fish...”

124. Minami Manshû Tetsudô K.K. Kôgyô-bu. Nômu-ka. [South Manchuria Railway Co., Industrial Div. Bureau of Agriculture]. 1924. Daizu no kakô [Soybean processing]. Dairen, Manchuria: SMRC. 777 p. 30 cm. (Sangyo Shiryo 21). [250 ref. Jap]

• **Summary:** Name of company with diacritics is: Minami

Manshû Tetsudô K.K. Kôgyô-bu. Nômu-ka. This important, major work was written by Yoshitane Satô. Contents: Photos (on unnumbered pages at the front of the book) show 16 scenes of soybean transportation, storage, and processing in Manchuria, as follows: (1) Mule drivers whipping mules trying to pull carts loaded with large sacks of soybeans over muddy roads. (2) Cylindrical osier storage bins for soybeans. (3) Row upon row of sacks of soybeans piled high in storage near docks. (4) Soy sauce being made in a courtyard; each earthenware jar is covered with a woven conical lid. (5) The inside of a huge and modern soy sauce plant. (6) Wooden kegs and glass bottles of Yamasa shoyu. (7) Soy sprouts growing in round woven baskets. (8-11) Soy oil being pressed using vertical screw presses [as an alternative to hydraulic presses]—four views. (12) Boilers used in a soybean mill. (13) A wooden barrel of soybean oil being sealed. (14) Soy oil packaged in many small containers, each surrounded by a wicker basket. (15) Round soybean cakes stacked high on railway flatcars. (16) The inside of a modern soy oil factory.

Contents: 1. Current status of soybean production and consumption: A. Production: Overview (p. 2), Japan (p. 4), Korea (p. 12), Manchuria (p. 16), China (except 3 eastern provinces, but including Eastern Inner Mongolia, p. 31), USA (p. 34), British colonies (p. 37), European countries (p. 40). B. Consumption: Japan (p. 41), Korea (p. 52), Manchuria (p. 57), China (p. 59), Dutch East Indies (Indonesia, p. 60), USA (p. 61), European countries (p. 63).

2. Characteristics of soybeans: A. From a physical sciences viewpoint (p. 67): Structure (overview, cotyledons, hypocotyl, seed coat), contents of each system (p. 70), appearance (p. 73; color, gloss, shape, size, hilum (*fusuma*) color, young plumule leaf color, ratio of seed to seed coat). B. From chemical viewpoint (p. 82): General composition, structure of each component (p. 109; protein, oil, carbohydrate, ash/minerals, vitamins). C. Appearance and relationship between oil and protein content (p. 126): Oil and protein color related to color, glossiness, shape, size, hilum color, young plumule leaf color. D. Evaluating soybean quality (p. 140): Overview, key points (sizes, shapes, colors, glossiness, hilum color, young plumule leaf color, ratio of seed coat to seed, dryness of seed, volume, weight, smell, mixing of different varieties, ratio of imperfect seeds, amount of other types of seeds), collection of materials for testing, testing and evaluating commercial soybeans.

3. Soybean usage and processing (p. 175). A. One view of main usage of soybeans. B. Nutritional value of soybeans as food (p. 183): Nutritional value of soy protein. C. Processed soyfoods (p. 208): Soy sprouts (p. 208), natto (*itohiki nattô*, p. 212, Hamanatto, p. 224), types of tofu (regular tofu [*nama-dôfu*, p. 226], *kori-dofu* or *koya-dofu*, p. 240, aburaage, p. 245, tofu curds [*tofu nô*, p. 247], hard tofu [*tofu-kan*, p. 247], fragrant hard tofu [*kô-kan*, p. 248], *senchô tofu*, p. 249, fermented tofu [*nyûfu* or *funyû*, p. 249]), *tofu-p'i*

or yuba (p. 256), soymilk and artificial cow's milk, p. 259, soybean flour raw, or roasted (kinako, p. 263), shoyu (p. 266; overview of miso and shoyu, Japanese traditional regular shoyu, p. 267, Japanese traditional special shoyu and tamari, p. 269, Chinese soy sauce, p. 272, recent shoyu research and development, p. 274), miso (p. 280; Japanese traditional regular miso, Japanese traditional special and processed miso, p. 282, Chinese miso, recent miso research and development, p. 285). D. Soybeans as feed or fodder (p. 287; green soybeans as feed, p. 290): Fresh forage, dried forage or hay. E. Soybeans as manure or fertilizer (*hiryô*, p. 297; in the Kaijô area of Manchuria, have been roasted and steamed, and mixed with compost, and used for green manure (*ryokuhi*) or soybean cake (*daizu kasu*). This method has also been used in the northeastern provinces (*Tohoku Chiho*) of Japan in rice fields). F. Soybeans as oilseeds (p. 302). G. Use of soybean protein in industrial products (p. 304).

4. The soy oil extraction industry (p. 305): A. Methods of removing the oil (origins, traditional methods, hydraulic pressing, extraction method, p. 340). B. Advantages and disadvantages of each method (p. 348). C. The soy oil industry in Manchuria (p. 357): History of development, important places for soy oil on the Manchurian Railway, economic condition of the Manchurian oil industry (p. 420), oil extraction in Japan (history, p. 437, commercial factories, p. 442, development of these factories, p. 451).

5. Soybean meal or cake and its composition (p. 464). A. The varieties of soybean meal or cake and the composition of each. B. Evaluation of quality (p. 473). C. Soybean meal or cake as a fodder (p. 478): Feeding value and digestibility, incorrectness of the theory that there are bad effects from feeding soybean meal or cake (p. 479). D. Soybean meal or cake as a fertilizer (p. 490). E. Soybean meal or cake as food (p. 504): Use as a raw material for shoyu production (p. 506), use to make soy flour (p. 509). F. Soybean meal or cake as a source of protein in industrial products.

6. Soy oil and its processing (p. 526). A. Characteristics of soy oil: Composition, physical characteristics (p. 535), chemical characteristics, testing and evaluating soy oil (p. 564), the quality of commercial soy oil products (p. 577). B. Refining soy oil (p. 587). C. The use and processing of soy oil (p. 631): Overview, refined soy oil as a food, substitute for salad oil, or for deep-frying oil, as an illuminant, as a cutting oil, lard substitute, margarine, in paints, soap, hardened oil, for waterproofing, substitute for petroleum oil, glycerin, fatty acids, stearine.

7. Exports and imports of soybeans, soybean meal or cake, and soy oil (p. 708). A. Manchuria. B. Manchurian exports. C. China. D. Japan. E. Korea. Appendix: Bibliography of soybeans (Japanese-, German, and English-language works; p. 748). List of photos.

Note 1. This is the earliest Japanese-language document seen (Oct. 2011) that mentions fermented tofu, which it calls *nyûfu* or *funyû*.

Note 2. This is the earliest Japanese-language document seen (Feb. 4) that uses the term *itohiki nattô* to refer to natto. Address: Dairen, Manchuria.

125. Carqué, Otto. 1925. *Natural foods: The safe way to health*. Los Angeles, California: Carqué Pure Food Co., Inc. 359 p. Illust. Index. 20 cm.

• **Summary:** Contents: Part I: Fundamental facts about food and health. 1. The old and new conceptions of the cause of disease. 2. Drug medication, vaccination, and serum therapy. 3. Nature's healing factors: Sunlight, fresh air, exercise, rest, water, the importance of natural foods for life and health, why denatured foods (white flour, refined sugar, candies, etc) are injurious. 4. The constituents of food considered in the light of modern physiology and biology: Proteins, carbohydrates, fats and oils, cellulose, fruit acids are organic acids, organic salts, the alkaline or base-forming elements (iron, sodium, calcium, magnesium, potassium, manganese, and aluminum), the acid-forming elements (phosphorus, sulphur, silicon, chlorine, fluorine, iodine, bromine, arsenic), the vitamins. 5. Rational soil culture essential for the production of superior foods. 6. The conservation of vital force (stimulants, narcotics, elimination of waste, quality of foods, prolongation of life, alkaline and acid-forming foods). 7. Why the calorie theory is misleading. 8. Fruit, man's best friend (the fruit of the tree, sulphured and unsulphured fruits). 9. Nuts—Nature's most concentrated foods. 10. Vegetables—Nature's blood purifiers (Great hygienic value of green leaves, proper soil fertilization most essential to vegetable culture, loss of organic salts in cooking, classification of vegetables—5 classes). 11. Cereals and legumes (Cereals falsely called "The staff of life," whole grain products are the best, the great waste of food elements by modern milling processes, legumes—an important food). 12. Milk and dairy products (Milk not a perfect food for adults). 13. Meat—the least essential and most expensive of all foods (the vegetarian alternative).

Part II: Practical dietetics. 14. How to live well on less food. 15. The feeding of infants and children (lactation, almond milk, soy bean milk). 16. The rational preparation of foods. 17. Rational food combinations (importance of simplicity of eating, the mono-diet and its advantages). 18. Simple and well balanced menus for all seasons. Appendix: Tables and statistics. A1. Analyses showing the amount of sodium, calcium and iron in foods. A2. Amount of food materials necessary to supply one ounce of protein. A3. Amount of calories contained in one pound and one ounce of 200 food products. A4. Average time required for gastric digestion of foods. A5. Annual consumption of sugar, soft drinks, salt, spices, coffee, tobacco, drugs, alcohol, etc., in the United States. A6. Regulations for the enforcement of the Food and Drug Act. Important information about chemical preservatives and artificial colors.

The Preface (and the book) begins: "Two powerful

superstitions are impeding the welfare and progress of the human race. The one is the conviction that disease is an entity, a mysterious something that attacks us without warning from the outside, either in the form of germs or as inclemency of weather. The other—perhaps the more harmful of the two—is the belief that for each disease specific remedies must be found, such as drugs, serums, vaccines, glandular extracts, etc., and that, when we are afflicted, we have to submit to a specialist's treatment or even to the affected parts or organs."

The average individual tries "to shift the responsibility for his sins of omission or commission to some imaginary cause, rather than to hold himself accountable for the violation of nature's laws." There is "almost universal ignorance of the fact that disease is merely an effort on the part of nature or the universal life force to restore normal conditions in the organism. Our present system of commercialism has taken advantage of this situation by misleading people through clever advertising to persist in their errors in order to maintain the demand for drugs and serums, proprietary medicines,..."

Chapter 11, "Cereals and Legumes," briefly discusses many types of soyfoods—soy sprouts, milk, flour, tofu, soy sauce, and oil (p. 142). Page 196 discusses the use of soy bean milk and almond milk for feeding infants and children. Chapter 16, titled "The Rational Preparation of Foods," contains a long and detailed section on soy beans (266-71), with subsections on boiled soy beans, soy bean milk, tofu, soy sauce, and soy bean sprouts. Home preparation of each is described. Miso, yuba, natto, and hamananatto are also mentioned (p. 268). Soy-related recipes include: Baked soy beans (p. 269). Soy bean loaf. Soy bean croquettes. Soy bean bread (p. 270).

Chapter 9, about nuts, states: "The making of nut butters is not a difficult process. At present peanuts and almonds are chiefly used for this purpose... The blanching of peanuts and almonds is now done on a large scale by special machinery, and the blanched nuts can be procured in nearly all the larger cities." Break the blanched nuts into small pieces by running them through the Climax Grater or a food chopper. Put them into a moderately hot oven for a few minutes to make them dry and crisp, then run them through a tightly adjusted nut mill to create a "smooth, palatable nut butter." A large table (p. 122) compares the composition of various nuts and nut butters (almond butter, peanut butter) with meat, cheese, eggs, cow butter, and whole wheat bread. "The pecan contains the largest amount of fat, about 70%, closely followed by the hickory nut, brazil nut, filbert and pine nut, which all contain over 60% of fat. The pignolia imported from Spain ranks highest in the amount of protein, containing nearly 34%; the peanut comes next with 29.8%; the butter nut, almond, pistachio, all contain over 20% protein, excelling the best cuts of meat in that respect. The almond does not contain any starch as is, therefore, the nut

best suitable for infants, especially in the form of almond milk.” Chufa contains 3.5% protein and 31.6% fat.

The section titled “Fruit and nut confections” (p. 212-15) discusses and has recipes for natural candies and confections.

The section titled “How the American people deplete their vitality by their favorite poisons: The tremendous waste of our material wealth” (p. 328-43) discusses (p. 338-43): The amount spent in 1924 on each of 15 “adulterated foods and drinks and of poisonous stimulants and narcotics” (\$5,040 million) compared with the amount spent on foods and vegetables (\$850 million, or 16.8% as much). Refined sugar. Coffee. Tobacco. Condiments, etc. Alcoholic beverages. Drugs. Regulations for the enforcement of the Food and Drug Act (due to untiring efforts of Dr. Harvey W. Wiley, former chief of the Bureau of Chemistry, USDA). Sodium benzoate and sulphur dioxide. Salt. Saltpeter. Boric acid and borax. Saccharine. Mineral and coal tar dyes. Laxity in enforcement of the Pure Food Law.

On pages 344-47 is information about the Carque Pure Food Company (incorporated 1912) and its founder and owner Otto Carque, including a brief biography of Otto, a list of leading Carque food products, and a full page photo of the company’s new home at 729 Seward St., on 1 Oct. 1925 (2 story brick building).

The food products are arranged by groups: Fruits: Sun-dried and dehydrated, without bleaches or preservatives (Black mission figs, white Smyrna-type figs, prunes, dates, olives, raisins, apricots, peaches, pears). Nuts: Fresh, selected and unroasted (almonds, walnuts, Brazil nuts, pecans, pignolias, pistachios, peanuts). Confections: Of assorted fruits, nuts and honey, without sugar, salt, glucose or preservatives (delectables, fruit nuggets, Kandy-Andy). Stamina and laxative foods (Nut-Fruto, Prunola {prunes and olives}, fruit laxative). Nut butters: Ground from whole nuts, uncooked and unsalted (almond, nut cream, peanut). Cereals and products: Made from re-cleaned whole grain (wheat flour, yellow corn meal, brown rice, breakfast food, crackers). Miscellaneous (olive oil, strained honey, raw sugar, fig-cereal breakfast drink {instead of coffee}). Price list and descriptive circulars on request.

Note: This is the earliest English-language document (or book) seen (June 2004) with the term “Natural foods” in the title that also discusses soy. Address: Los Angeles.

126. *Chinese Economic Bulletin*. 1926. Manufacture of *fu chu* [dried yuba sticks]. 8(267):179-80. April 3. [Eng]
 • **Summary:** To the north of Kowloon [in northern Hong Kong], in a village named Chuyuantun, the agricultural experiment station of the China Association for the Advancement of Agriculture is located. One of the main industries of that village is the manufacture of *Fu Chu* (2 Chinese characters are given) (curd + bamboo [dried yuba]).

The process is as follows: [Soy] beans, imported from

Tientsin and Newchwang, cost \$6-7 per picul. Equipment: (1) An iron pot about 3 feet in diameter and very shallow, the deepest being 3 feet, obtained from Fatshan (2 Cc). (2) A hearth built of earth about 4 feet broad, of varying length depending on the number of pots used. A number of fire boxes are made in the hearth, one below each pot. Above each box opening is a bamboo frame for hanging and drying the *Fu Chu*. (3) Grinding stones: Two sets, a big one for grinding the [soy] beans and a small one for removing the bean pods. (4) Thin iron knives, about 4 inches long, for cutting *Fu Chu*. (5) A shovel, and tongs made of bamboo grass.

Process: Remove foreign matter from the beans. “Then bake the beans in sunshine or on the fire in a pot, if there is no sunshine” [i.e., dry well], dehull the dry beans using the small grindstone, and soak in water—7 hours in spring, 4 hours in summer, eight hours in autumn, or 10 hours in winter. Soaking the beans for the correct length of time is a critical step, requiring much experience. The duration must be neither too long nor too short.

Grind the beans with water to obtain a pasty substance. Filter it, then bring to a boil in the pots in the morning, using dried grass as fuel. Heat over a brisk fire, stirring from time to time. As soon as it comes to a boil, reduce fire, keeping it “low and steady until a thin film is formed on the surface. This film is *Fu Chu*. Use a thin knife to keep the film from sticking to the pot, and for slicing it after solidification, before removal.” “The film is then taken out of the pot and hung on the bamboo rod above the hearth” to dry. The same process is repeated, one layer at a time, until the entire pasty contents of the pot has been transformed into *Fu Chu*. “The two lowest layers of film at the bottom of the pot, which are thicker [and sweeter] than the top layers are known as *Tien Chu* or sweet *Fu Chu*” (2 Cc = sweet + bamboo).

Note 1. This is the earliest English-language document seen (Oct. 2008) that uses the term “*Tien Chu*” to refer to sweet dried yuba.

It is estimated that 25 catties of beans will provide sufficient paste for 10 pots, producing 12 catties of *Fu Chu* and two catties of *Tien Chu*. One man can look after as many as 10 pots at a time.

A table shows the approximate profit from 10 pots. Expenses: “25 catties of [soy] beans @ \$7 per picul = \$1.75. 20 catties of dried grass @ \$1.00 = \$2.00. Total expenses: \$3.75.

Income: “12 catties of *Fu Chu* @ 35 cents = \$4.20. 2 catties of *Tien Chu* @ 25 cents. Total income: \$4.70. Net profit: \$0.95.

“In addition to this profit, there are several by-products consisting of the dregs of the beans after grinding [okara] and the bean pods, which can be used for feeding domestic animals, while the ashes of the burned grass may be used as fertilizer.”

Note 2. This is the earliest document seen (Oct. 2012)

that describes in detail how to make dried yuba sticks.

127. Horvath, A.A. 1926. A new method for the determination of fat in soybean milk. *China Medical Journal* 40(7):631-33. July. [2 ref]

• **Summary:** “Soybean milk is extensively used throughout China by adults and for infant feeding. It has also been a very great success in the feeding of children in the United States.

The method, which is described, consists in autoclaving the soybean milk in an equal volume of a 20 per cent NaCl [sodium chloride] solution, followed by determination of the fat by the Babcock method.

A table shows the percentage of fat in 8 samples of soybean milk; 1-4 were prepared in the laboratory and 5-8 were purchased from various shops in Peking.

The percentage of fat in samples 1-4 ranges from 1.75% to 1.42% when calculated by the new method and from 1.65% to 1.35% when calculated by the older extraction method.

The percentage of fat in samples 5-8 ranges from 1.04% to 0.52% when calculated by the new method and from 1.12% to 0.58% when calculated by the older extraction method. The specific gravity of samples 5-8 ranges from 1.105 to 1.018.

“The data also show that the market soybean milk is poor in fat owing to the custom of the Chinese of removing up to 30 pelliculas [pellicles; sheets of yuba] rich in fat, which are sold separately at a high price.”

Note: Yuba is described as an early step in the process of making soymilk. Address: Dep. of Medicine, Peking Union Medical College, China.

128. Mayerhofer, Ernst; Pirquet von Cesanatico, C. eds. 1926. *Lexikon der Ernährungskunde* [Dictionary of dietetics]. Vienna, Austria: J. Springer. viii + 1205 p. Illust. 25 cm. [Ger]*

• **Summary:** Included in the long list are: Akamiso, miso, shiromiso, tofukasu [okara], daizu [soybeans], fu [dried wheat gluten cakes], kingyo-fu, kiri-fu, kiri-mochi [frozen and dried rice cake], ame [malt extract], mirin, aburage [tofu fried in vegetable oil], natto–Bohnenkäse, Tofu–Sojatopfen, Tonyu–Sojamilch [soymilk], azuki [small red beans], kwansen-fu, kinako–Sojabohnenmehl, geröstet, amasake [amazake]–unvergorener Sake, umeboshi, koritofu [frozen and dried tofu], midzuame [soft ame = rice syrup], shoyu–Sojasauce, yuba–eine Bohnenpeise. Note that a number of these terms are Japanese.

Note 1. This is the earliest German-language document seen that mentions amazake, which it calls “amasake.”

Note 2. This is the earliest document seen (Aug. 2002) in any language that uses the term *tonyu* (or *tönyü* or *tonyü*) to refer to soymilk.

129. Wagner, Wilhelm. 1926. *Die chinesische Landwirtschaft* [Chinese agriculture]. Berlin: Paul Parey. xv + 668 p. See p. 311-20. Illust. No index. 25 cm. [214 ref. Ger]

• **Summary:** The section on legumes contains a long subsection on the soybean (p. 311-20). Contents: Distribution in China. Types and varieties of soybeans. Chemical composition. Techniques of soybean cultivation. Utilization of soybeans: Chiang (*djang*; *Bohnenauce* [like soft miso]), soy sauce (*djang-yo* or *djang-yu*), and tofu (*dou-fu*; *Bohnenkäse*), firm tofu (*dou-fu-gan*; *getrocknete Bohnenkäsekeks*), yuba (*dou-fu-pi*; *Bohnenkäsehaut*), frozen tofu (*dung-dou-fu*; *gefrorener Bohnenkäse*), smooth soymilk curds (*dou-fu-nao*; *Bohnenkäsegehirn*), soy sauce residue (*djang-yu-dscha*; *Rueckstände der djang-yu*), tofu residue (*dou-fu-dscha*; *Rueckstände der dou-fu*; [okara]), soybean oil (*dou-yu*; *Bohnenöl*), soybean cake or meal (*dou-bing*; *Bohnenkuchen*; the latter two in northeast China). The section on oilseed cakes as fertilizers mentions soybean cake (p. 230). Soybeans are also mentioned as a summer crop in rotation with millets (p. 305).

The section on legumes also discusses (p. 320-21) peas (*Die Wintererbse*, *Pisum sativum L.*, *Wan-dou*), broad beans (*Die Pferdebohne*, *Vicia faba L.*, *Tsan-dou* or *Hu-dou*) and the two types of bush beans which are grown throughout China and distinguished by the color and size of the seeds (*Die Buschbohne*; {1} *Phaseolus mungo L.*, *Lü-dou*, and {2} *Phaseolus radiatus*, *Tschi-hsiau-dou* [*chixiaodou*]). The *Lü-dou* is widely prized as a vegetable, often as 5-cm-long beansprouts (*dou-ya-dsi*), or in parts of the North they are used to make vermicelli (slender noodles).

The section on oilseeds contains subsections on rapeseed, sesame, and peanuts (p. 332-38). The section on textile plants discusses hemp (p. 358-60).

Bray (1981) describes that as “A full and systematic description of Chinese agricultural methods in their ecological and socio-economic context, based on the agronomist author’s personal experience and careful questioning of his students at the Sino-German High School in Qingdao.” Address: Abteilungsvorsteher bei der Landwirtschafts-Kammer fuer den Regierungsbezirk Wiesbaden in Wiesbaden, Germany. Frueher Dozent fuer Landwirtschaft und Abteilungsvorsteher der Deutsch-Chinesischen Hochschule Tsingtau (China).

130. Horvath, A.A. 1927. The soybean as human food. *Chinese Economic Journal* 1(3):298-309. March. [24 footnotes. Eng]

• **Summary:** Contents: Soybean milk for food: Introduction. Preparation of soybean milk. Properties (Yu-P’i is Chinese for yuba; Laxa). Market prices. Composition. Nutritive value. New methods in the manufacture of soybean milk (Prof. Laxa in Prague [Czechoslovakia], Li Yu-ying, Soyama). Some dietetical advantages and applications of the soybean milk. Condensed soybean milk and milk powder

(Soy Lac soybean milk powder made in America by Chard). Soybean cake, soybean meal and soybean flour as material for soybean milk. *Yu p'i* and *yu ba* (yuba; also *fu chu*).

"In 1905, Li Yu-ying submitted a paper on the subject [of soybean milk] to the 2nd International Milk Congress in Paris, in which he emphasized that the introduction of soybean milk to Western countries 'will be highly beneficial to public health as well as to the budget of the poor.' Also by those who advocate and urge a vegetarian diet, a very strong case can be made for this Oriental substitute" (p. 298).

According to Prof. Laxa: "Soybean milk, supplemented with lactose and inoculated with a culture of yoghurt [yogurt] bacteria, coagulates at 40° C. in 4 hours and gives a curd-like acid mass" (p. 300).

"Market prices. In Peking soybean milk is sold in small bottles in portions of about 200-220 cc. labeled 'Bean milk, a Chinese product, the most nourishing food, made by...' For such a bottle, delivered daily, the big factories of Peking asked in 1925 \$1.00 (Mex.) per month. One liter of such milk costs, therefore, about 15 cts. (Mex.)... A fine soybean milk powder, called *Soy Lac*, has recently been prepared in America by Chard" (p. 300-01). Note: This company (Chard) was first referred to by Piper and Morse in 1916 in *USDA Bulletin* No. 439, "The soy bean, with special reference to its utilization for oil, cake, and other products." Soy Lac is mentioned again by Horvath on p. 307.

A table (p. 302) compares the composition of soymilk made in 3 locations (Tsinanfu, China; Peking, China; and Japan) with that of human, cow, and goat milk. Human milk has the lowest protein content (1.25%) and ash content (0.25%); soymilk has about the same protein content as cow's milk (3.3%) but an ash content (0.40%) which is higher than that of human milk but lower than that of cow's milk. Footnote: "To supplement the deficiency of the soybean milk in mineral constituents [such as calcium], it is recommended by von Noorden and Salomon to add to it the salt mixture of Pirquet, which consists of: sodium chloride, 0.3 gm.; potassium chloride, 1.1 gms.; calcium glycerophosphate, 1.7 gms.; magnesium lactate, 0.5 gm.; ferrum glycerophosphate, 0.1 gm. This mixture is called *Nemssalz*. If diluted in 1 liter of water it gives the same percentage of salts as in women's milk" (p. 302).

"In Germany the Soyama factory (in Frankfurt) manufactures soybean fresh milk (mostly from soybeans), soybean normal cream, and also condensed bean milk and cream. Soyama bean milk looks like cow's milk, contains the same constituents, even in larger amount and in a state of finer dispersion. Only its taste is different. According to Fuerstenberg, Soyama milk can be qualified as a special, very valuable dietetic nutrient. The high lecithin content of this preparation adds to its value too" (p. 306). A table (p. 306, based on the analyses of Dr. G. Popp of Frankfurt) shows the nutritional composition of 6 types of Soyama milk and cream preparations: Normal milk. Milk for diabetics.

Milk for baking purposes. Normal cream. Cream for diabetics. Cream extra rich in fat (especially for diabetics). "According to von Noorden and Salomon, Soyama preparations may be kept as long as almond milk and Paranut milk. Soyama milk looks just like cow's milk. By keeping, cream separates and it must be shaken before using" (p. 306).

"In using Soyama milk and cream preparations, v. Noorden confirms the following statement of Fischer (for vegetable milk in general): '1. In the stomach soybean milk gives a much finer flocculent precipitate than does cow's milk, produced by acid or even rennet. 2. The ingestion of soybean milk results in a feebler (smaller) secretion of gastric juice; the period of secretion is also shorter. 3. The period of stay in the stomach of the finely flocculent precipitate of the soybean milk is shorter than that of the casein-fat coagulum of cow's milk. 4. The peristaltic motion of the stomach is less after the ingestion of soybean milk and more coordinated than in the case of cow's milk, as shown by X-ray investigation'" (p. 307).

"On the basis of these observations soybean milk is recommended by v. Noorden in cases of gastric and duodenal ulcer, states of peritoneal irritation, hypersecretory conditions of the stomach, disturbances of the motility of the stomach, uric acid diatheses, kidney disturbances, conditions with edema where a food poor in sodium chloride is required, Basedow's disease, cholecystitis, cirrhosis of the liver, diabetes, and in cases where a very nutritious diet is required" (p. 307).

"Soybean milk powder will undoubtedly have a successful future in the Orient as well as in European countries and the United States. Its great advantage in comparison with cow's milk powders is its cheapness. Soybean milk powder can be easily stored and transported... It is believed that at present some of the commercial milk powders contain an admixture of soybean milk powder" (p. 307-08).

"*Yu P'i* and *Yu Ba* are the Chinese and Japanese names of the pellicula formed on the surface of soybean milk when the latter is gently heated. Good *Yu Ba* has a bright yellow color when properly dried. The best *Yu Ba* is that obtained after the first heating. In repeating the heating of the remaining soybean milk, pellicules of gradually inferior quality and color are obtained. As much as 30 pellicules can be secured from the same portion of soybean milk. In China, a product called *Fu Chu* is manufactured in a way similar to *Yu Ba* (Footnote: See this journal, Vol. VIII, 1926, p. 179). Recently an improved method for the manufacture of *Yu Ba* was patented in Japan, consisting in the use of an electric fan adjusted over the surface of a kettle containing the soybean milk heated to a temperature of 90°C.

"*Yu Ba* has a great nutritive value, as it contains a high percentage of protein and fat,..."

A table (p. 309) gives the nutritional composition of five types of yuba: Common yuba, Kyoto yuba, Shimada yuba,

Peking yuba, and Fu chu.

Note: The values for Fu chu are based on those previously reported by Adolph. Fu chu contains much more water (53.68%) than any of the other four types of yuba; common yuba contains only 21.85% and Peking yuba only 9.15%. So it is either fresh or reconstituted.

"In Japan, Kyoto and Nikko are noted for *Yu Ba*. *Yu Ba* is in much demand in China and Japan and is used in numerous ways as an essential ingredient in many very palatable dishes. Its price is high and therefore yuba is used only by the rich."

Reprinted in 1927 as part of an 86-page monograph titled "The Soybean as Human Food" (Peking, China). Address: M.D., Peking Union Medical College, China.

131. Horvath, A.A. 1927. The soybean as human food. Peking and Shanghai, China: Chinese Government Bureau of Economic Information. Booklet Series No. 3. 86 p. May. Reprinted from Chinese Economic Journal, Sept. and Nov. 1926, and Jan. to April 1927. No index. 21 cm. [38 ref]

• **Summary:** A very original and important book. Contents: Preface by Macey F. Deming, Tappan New York, from an address at a meeting of the National Soybean Growers', held at Washington, DC, Sept. 1925. Introduction. 1. General ingredients of the various Manchurian beans. 2. Composition of some Japanese soybeans and of the common American varieties. 3. Value of the soybean as food. 4. Soybean oil for food. 5. Refined soybean oil: As substitute for salad or frying oil, as substitute for hardened oil and lard (hydrogenation), in oleomargarine and vegetable butters. 6. Whole soybean as food: Immature or green soybeans, mature or dry soybeans, the digestibility of the boiled soybean seeds, boiled soybeans as a food of predominant importance in China, soybean coffee, soybean chocolate, soybean sprouts.

7. Soybean cake, soybean meal and soybean flour for food: Soybean press cake, soybean extraction meal, soybean flour (Berczeller, Soyama, Aguma, lecithin, Ehrhorn), Sojawurze (Suppenwurze, Maggi cubes), digestibility of soybean flour, value for infants (p. 53, based on the research of Dr. Ruhrah in the USA), some medical aspects of the use of soybean flour, soybean flour in diabetes. 8. Soybean milk for food: Introduction, preparation of soybean milk, properties (incl. inoculation with a culture of yoghurt [yogurt] bacteria to give a curd-like acid mass), market prices, composition, nutritive value, new methods in the manufacture of soybean milk (Prof. Laxa in Prague [Czechoslovakia], Li Yu-ying, Soyama), some dietetical advantages and applications of the soybean milk, condensed soybean milk and milk powder (Soy Lac soybean milk powder made in America by Chard), soybean cake, soybean meal and soybean flour as material for soybean milk, yu p'i and yu ba (yuba; also fu chu).

9. Soybean curd (tofu) for food: Preparation and types (classical name is *li chi*), historical, present state (of tofu in

China), chemical composition, digestibility, utilization. 10. Fermented soybean products for food. Soy sauce: Kibiki and sobiki tamari, composition of various soy sauces. Natto. Miso. Conclusion. Bibliography.

On page 9 we read: "An industry which promises to be of importance in a further utilization of the soy bean is the manufacture of 'vegetable milk.' At the present time a factory in New York State is being equipped for this purpose." Address: Peking Union Medical College, China.

132. Grey, Egerton Charles. 1928. The food of Japan. Geneva: League of Nations, Health Organization. 161 p. May. Index. 22 cm. [82 ref. Eng; fre]

• **Summary:** Detailed information and analysis. Contents: Preface. 1. Quantity of food in Japan: Exports, imports, production and consumption of food in Japan in the year 1925. 2. Quality of food in Japan: Definition of quality. 3. Distribution of food in Japan: Natural and artificial distribution. 4. Chemical composition of Japanese foods as consumed: Methods of analysis. 5. Chemical composition of Japanese food as purchased. Appendices: I. Literature relating to the chemical and physical properties of the food of Japan, with list of authors. II. Food materials and the plants and animals serving as sources of food in Japan.

Table 7 (p. 25) shows the amounts of major foods consumed in Japan. The percentage of the total food consumed is: Rice 50.83%, barley 10.15%, potatoes 8.63%, wheat 6.63%, soy bean 4.76%, other beans 3.71%, other cereals 3.24%, fish 1.72%, seaweed 1.23%.

On page 54, the author discusses the "Alkalinity of the ash [of foods]. This figure is of considerable importance as indicating the capacity of the food material to produce alkali in the body." On pages 61-111 the author lists the nutritional composition of all major Japanese foods, grouped by food type: 1. Cereals and cereal products. 2. Legumes, pulses, and legume products. 3. Roots, greens, and other vegetables. 4. Mushrooms and seaweeds. 5. Fruits, nuts, and seeds. 6. Vegetable oils. 7. Other vegetable products. 8. Dairy products. 9. Eggs. 10. Meat and animal fat. 11. Fish. 12. Condiments, beverages, etc. The name of each food is given in both English and French, usually with a brief explanation.

In a table (p. 65-69), in category "II. Legumes, pulses, and legume products," the section titled "Fresh legumes" includes (p. 64-65): Edamame (Soy bean in pod) = *Fève de soya en cosse*. The section titled "Dry legumes (pulses)" includes (p. 64-67): Azuki (Small red bean) = *Petit haricot rouge*. Dainagon (Small red bean) = *Petit haricot rouge*. Ao daizu (Soy bean [with green seed coat]) = *Fève de soya*. Kuro daizu (Black soy bean) = *Fève de soya noire*. Shiro Daizu (White soy bean) = *Fève de soya blanche*. Rakkasei (Pea nut) = *Pistache de terre*.

The section titled "Bean products" includes (p. 66-69): Aburage (Fried-bean curd) = *Pâte de haricots frite*. Aka miso (Soy-bean paste) = *Pâte de fèves de soya*. Gammodoki

(Fried-bean curd) = *Pâte de haricots frite avec mixture d'algues marines*. Kinako (Soy-bean powder) = *Poudre de fèves de soya*. Kori dofu = *Pâte de haricots séchée*. Namaage (Fried-bean curd) = *Pâte de haricots frite*. Natto (Fermented soy bean) = *Fève de soya fermentée*. Sarashian (Red-bean powder) = *Poudre de haricot rouge* [Sarashi-an from azuki beans]. Shiro miso (White soy-bean paste) = *Pâte blanche de fève de soya*. Tofu (Soy-bean curd) = *Pâte de fèves de soya*. Tofu kasu (Soy-bean residue) [okara] = *Déchets de fèves de soya*. To nyu (Soy-bean milk) = *Lait de fève de soya*. Yuba.

Note 1. This is the earliest English-language document seen (May 2012) that contains the word *gammodoki*; it refers to deep-fried tofu burgers, or that contains the word *namaage*, which refers to deep-fried tofu cutlets.

Also: Mushrooms and seaweeds includes (p. 73-75): Arame, Asakusanori [Asakusa nori], aonori, hijiki, kanten, kombu, mozuku, ogonori, tororo kombu, wakame. Fruits, nuts and seeds includes (p. 77): Asanomi (Hemp seed), Goma (sesame, white and black). Vegetable oils includes (p. 79): Daizu yu (Soy bean oil) = *Huile de fève de soya*.

Condiments includes (p. 92-93): Hamana natto [fermented black soybeans]. Kiriboshi (Dried daikon). Misozuke [miso pickles]. Narazuke. Shoyu [soy sauce]. Takuan (Pickled radish). Umeboshi (pickled plum) = *Prune confite*. Beverages includes (p. 92-93): Amazake. Mirin (fermented rice). Sake (Rice wine).

For each food, the following values are given in both English and French: Water, protein (N x 6.25), fat, carbohydrate, ash, calories, alkali value, total nitrogen, water-soluble nitrogen, phosphoric acid (anhydrous), sodium chloride (salt), water-soluble ash, water-insoluble ash, alkalinity due to soda and potash, alkalinity due to lime and magnesia, calcium oxide, ferric oxide, factor for converting to dry food.

Note 2. In Japan, the typical person is well aware of which foods are alkaline (*arukari-sei*) and which are acidic (*san-sei*). The alkaline foods are generally considered more healthful and health-protecting. For the alkaline values given by Grey for many basic Japanese foods, see SoyaScan Notes. 1991. Sept. 20.

Note 3. This is the earliest English-language document seen (March 2009) that uses the term “soy-bean paste” to refer to miso.

Note 4. This is the earliest English-language document seen (June 2009) that uses the term “Edamame” to refer to [green] soy beans in their pods.

Note 5. This is the earliest English-language document seen (Feb. 2004) that uses the term “kori dofu” to refer to dried-frozen tofu.

Note 6. This is the earliest English-language document seen (Dec. 2006) that uses the term “pickled plum” to refer to umeboshi salt plums.

Note 7. This is the earliest English-language document seen (Nov. 2011) that uses the term “Hamana natto” to refer

to fermented black soybeans.

133. Wu, Hsien. 1928. Nutritive value of Chinese foods. *Chinese J. of Physiology, Report Series* No. 1. p. 153-86. July. Issue title: Metabolism. [7 ref. Eng; chi]

• **Summary:** The nutritive value of many Chinese foods (water, protein, fat, ash, crude fiber, carbohydrate, calories) is given (with the English name, scientific name, and name in Chinese characters), including the following: wheat gluten, sesame seed (p. 155), yellow soy bean, black soy bean (large or small), green soy bean, soy bean sprout (yellow or green), soy bean flour, soy bean curd, soy bean dregs [okara], bean curd (doufu-gan, boiled in salt and spices and partially dried), oil skin ([yuba], from boiled soy bean milk), bean curd skin ([yuba], dried, or rolled like bamboo), soft bean curd, soy bean milk (p. 156), smoked bean curd, sheet bean curd, fermented bean curd, pickled bean curd, soy bean (fresh) (Characters: hair + bean = mao tou), wild soy bean, red gram bean (red small bean, *Phaseolus mungo* [azuki bean], p. 157), cucumber pickled in soy bean paste (p. 175).

Condiments: Thick soy bean paste, thin soy bean paste, fermented soy bean, fermented bean (dried), thin soy bean sauce (white), thick soy bean sauce (white), thin soy bean sauce (black), thick soy bean sauce (black), soy bean sauce (“chemical”), sweet flour paste (p. 176).

Table 4 (p. 180) gives the calcium, phosphorus, and iron content of some Chinese foods in percentages of edible portion, including the following: Wheat gluten, job’s tear, yellow soy bean, black soy bean, red gram bean [azuki], green soy bean (fresh), soy bean flour, soy bean milk, bean curd (Southern style and Northern style).

Table 5 (p. 182) lists foods as sources of vitamins A, B, C, or D, including the soy bean (an excellent source of vitamin B).

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the word “doufu-gan” (or “doufu gan”) to refer to Chinese-style firm tofu. Address: Dep. of Biochemistry, Peking Union Medical College, Peking, China.

134. Dorsett, P.H.; Morse, W.J. 1928. Agricultural explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon (Log-unpublished). Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished typescript log. Illust. Partially indexed. 28 cm.

• **Summary:** Also called the “Log of the Dorsett Morse Expedition to East Asia” and (by the National Archives) “Dorsett-Morse Expedition to the Far East, 1929-31,” this is one of the most important documents ever produced on soybeans and soyfoods. Covering the period from late 1928 until 1932, it consists of 17 volumes of typewritten unpublished manuscript plus handwritten notebooks.

The two explorers, who were gone on the expedition for a little more than two years, initially planned to be gone for about three years. They took 3,369 photos of which 95% appear in the report; the original prints are pasted on the pages, each with a number and a caption. The first negative number is #43196 (p. 238) and the last is #46514. The last numbered page of the report is #8818, but most of the index pages are not numbered and some special reports at the end of the main report each start with page 1.

The first quarter of the pages (to about page 2,500) are indexed, using 4 separate indexes. The only original and 2 microfilm copies were at the American Soybean Assoc. (St. Louis, Missouri), however as of Aug. 2011 they are on permanent loan to Rare and Special Collections at the National Agricultural Library (Beltsville, Maryland)—which also has 7 photograph albums that accompany the 7 log books. A list of the missing pages has been compiled. One photocopy of a microfilm copy is at the Soyinfo Center (Lafayette, California). One microfilm copy is at the National Archives in Washington, DC, in Records of the Bureau of Plant Industry, Soils, and Agricultural Engineering, Record Group 54. See: “National Archives Microfilm Publication No. M840. Expedition Reports of the Office of Foreign Seed and Plant Introduction of the Department of Agriculture, 1900–1938.” Rolls 16–20, volumes 56–73. These microfilm rolls may also be available for viewing or duplication at one of the various regional branches of the National Archives (e.g. San Bruno, California).

A brief itinerary of the trip is as follows: 1929 Feb. 18—The party of 5 people leaves Washington, DC, for Los Angeles by train. It consists of Morse, his wife Edna, their daughter Margaret (age 7), Dorsett, and his daughter-in-law Ruth (Bobbie; the widow of Dorsett’s son, she served as Dorsett’s secretary and general helper).

March 1—They sail from San Francisco to Yokohama on the S.S. *President Grant* of the Dollar Steamship Lines. March 29—Arrive in Yokohama, proceed directly to Tokyo, establish headquarters with rooms at the Imperial Hotel, and hire an interpreter, Mr. Suyetake, who works with them for the next 2 years. May 21—The Morses go to Hokkaido, the Dorsetts to Kyoto, by sleeper train. Morse returns to Tokyo.

Aug. 17—The entire party arrives in Hokkaido and establishes headquarters in Sapporo to study soybeans. Oct. 8—Leave Hokkaido for the Northeast Provinces, then arrive in Tokyo on Oct. 15. Oct. 22—Arrive in Keijo (Seoul), Korea, then take many side trips. Note: 1929 Oct. 29—Great Depression begins in USA with stock market crash. Dec. 8—Return to Japan via Kyushu, then to Tokyo to study soyfoods. They buy and photograph many!

1930 April 1—Travel by steamer to Dairen, Manchuria, where they set up headquarters. Dorsett very sick from April 11 to June 11; taken to a Japanese hospital in Dairen, he almost dies of double pneumonia. Morse does the work of both men and does not inform USDA of Dorsett’s critical

condition. June 24—Morse takes a quick trip to northern Korea, via Mukden and Antung (Tan-Tung), to look for *Zoysia* grass.

July 1—Returns to Manchuria via Mukden. July 21. Dorsetts leave for Peking by train; Morses and Mr. Suyetake stay in Dairen. Aug. 21—Morse party travels to northern Korea, staying in Heijo (Pyongyang / P’yongyang); takes a 4-day side trip to Seoul. Sept. 28—Morse returns to Dairen, Manchuria.

Oct. 19—Morse party leaves Dairen, arriving in Peking the next day. Nov. 9—Morse party returns to Dairen. Nov. 30—Morse arrives in Harbin, north Manchuria, then passing through Mukden, returns to Dairen. Dec. 18—Morses leave Dairen for Japan, passing through Kobe on Dec. 21 and arrive in Tokyo on Dec. 23.

1931 Jan. 12—Travel to Kyoto, Himeiji, and Tatsuno Shoyu. Jan. 16—Visit Okazaki and Hatcho miso. Jan. 17—Return to Tokyo. Feb. 17—Morse party leaves Tokyo by boat for the USA, arriving in San Francisco on March 4. March 15—Dorsett party leaves Peking for Tientsin, Shanghai, and Hankow. March 27. Dorsetts sail from Shanghai to San Francisco.

Note 1. The title of this report is puzzling since the expedition never went to Taiwan, Singapore, Java, Sumatra, or Ceylon. It was proposed several times that they visit these places, but the plans did not work out.

Note 2. This is the earliest log (unpublished) seen (Oct. 2001) that mentions soy. Address: Agricultural Explorers, USDA, Washington, DC.

135. Maliareffsky, G.I. 1928. [Bean milk and curd]. *Vestnik Manchzhurii (Manchuria Monitor)* No. 6. p. 21–23. English ed.; p. 83–91 Russian edition. Data supplied by Manchuria Railway S-ty. [3 ref. Eng; rus]

• **Summary:** Detailed descriptions, based on personal observations, of how soymilk, tofu, and yuba are made and used in Harbin and Fuchiatien. Nigari (*lu-shui*) is used as the tofu coagulant. Four methods can be used to preserve tofu: salting, drying, freezing, and steaming. Unpressed soymilk curds are called to-fu-na-erh and are sold in the streets of Fuchiatien for 1 copper per middle-sized cup. The grinding of soybeans to make tofu is done using a stone mill, driven by a donkey. The soymilk is separated from the fiber by filtration through a cloth and pressing before heating. “The ground mass remaining in the cloth after the filtration has been performed forms a very good nourishment for pigs, which are usually kept to make use of such refuses at every mill.” Tou-fu-p’i (yuba) is removed repeatedly from the 2.5 foot diameter cauldron while the milk is heated for 90 minutes. A cauldron containing about 2 gallons of soymilk may be skimmed 30 times, the first skim being the best. The yuba is sold. After the milk is boiled, some of it is sold, but most is used to make tofu.

Note: This is the 2nd earliest Russian-language

document seen (Oct. 2012) that mentions yuba, which it calls "Tou-fu-pi" and "yuba." Address: Harbin, Manchuria.

136. Dorsett, P.H.; Morse, W.J. 1929. Yuba in Japan (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.

• **Summary:** Pages 1009-10 (14 May 1929, Tokyo). "Copied from Mr. Morse's diary... We were also quite surprised to find a bean vermicelli made from soybean flour, as we did not know soy flour could be used for this on account of the small starch content. The number of adzuki [azuki] bean products seemed unlimited and we plan to collect these later. We were also able to collect three kinds of yuba, a thin skin-like product (very rich in protein) obtained in the boiling of soybean milk."

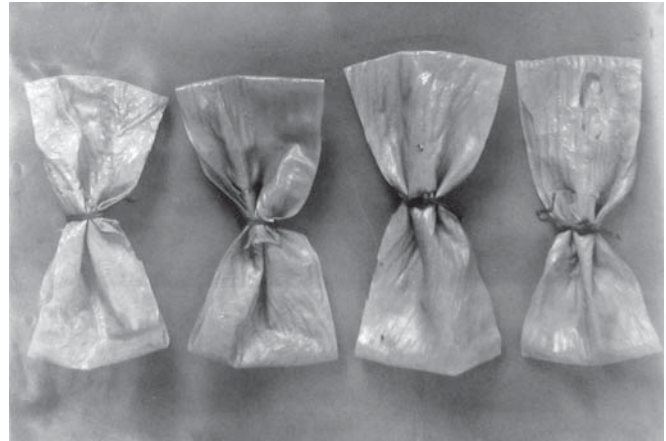


Page 1061. "One-half natural size picture [photo] of a package of yuba rolls. Beside the picture are some of the rolls showing character of the bean-curd skin (Yuba). This form of yuba is known as 'Maki-yuba' [as written on the label]. Meaning yuba rolls and is used in making soups and in other dishes" (neg. #43666).

Page 1066. "Between 1/2 and 1/4 natural size picture [photo] of a package of yuba sheets, rich creamy yellow in color. Beside the package is a tied small bundle of the yuba sheets which after being moistened are used to wrap rice in for lunches. Yuba is very rich in protein" (neg. #43671).

Page 1069. "Natural size picture [photo] of a package of yuba in ribbon-like rolls. Beside the package are rolls showing the manner of rolling the thin narrow sheets of yuba. This form is used in soups" (neg. #43674).

Page 3480. "Small dried sheets of soybean 'Yuba' arranged in the shape of bow ties. Purchased at small grocery



store in Tokyo, Jan. 6, 1930. Native name is 'Yuba.' Yuba is the film obtained when boiling soybean milk. Used most commonly in soups. This is a natural size picture" (neg. #44740).

Pages 3555 to 3560. (15 Jan. 1930). "Today we visited a yuba factory for the purpose of getting information as to how this soybean product is made, and also to try and get still and motion pictures of the equipment and processes... Details as to the method of making yuba will be found in the special report on soybeans and soybean products." A boiler was used in this yuba factory. Bamboo trays placed over a heater were used to dry the yuba. Photos taken in Tokyo show:

Page 3557. "An interior view of a yuba factory showing at the left the mill surrounded by a hopper and an extending small pipe to supply a small stream of water for grinding to the right in the cooker, also tube and long handle knife" (neg. #44771).

Page 3558. "An interior view of the portion of the factory where the bean milk is evaporated. A part of the furnace is shown in the foreground; across this lays two bamboo trays with bits of broken yuba on them. Back of these can be seen four evaporating trays or pans" (neg. #44772).

Page 3559. "A nearby view of two half-sheets of yuba hanging across a small bamboo strip. The sheets before being cut are just the size of the evaporating pan (neg. #47773).

Page 3560. "A nearby view of broken pieces of yuba on a bamboo tray. This is a little nearer than [neg.] #44772, otherwise the same (neg. #47774).

Page 3585. "Two packages of yuba and two rolls and sections of a roll which is sold commercially in this manner. Length of packages: 9 inches. D & M. #3292.

Page 3590. "The sheets of Yuba as they come from the pan measure about 16 x 20 inches and are put up in various forms for the market. This view shows folded and sectional views of Yuba (neg. #44782).

Pages 3595-97 (17 Jan. 1930, Tokyo). "Went out to the Yuba making plant this morning to try and get some still and motion pictures... We found the owner and his wife were busily occupied. He was taking up the sheets (17 x 21

inches) of Yuba from the evaporating pans and hanging them up to dry. The pans are of copper, about 3 inches deep by 17 inches wide and 21 inches long. The evaporating pans are filled from ½ to 2/3 full of soybean milk, and evaporated over a slow fire. As the Yuba or layer of scum forms over the surface of the heated milk, it is loosened at the edges by running a small bamboo knife around the sides. A small split stick of bamboo is then run under the film the long way, and the scum or sheet of Yuba, which laps down over the stick like a wet sheet of paper, is lifted and the stick stuck into a crack so that the sheets hang over the evaporating pans to dry.

“Do understand that as many as 25 or 30 sheets of Yuba may be taken from one pan of milk. However, from 10 to 15 is the usual amount taken. Those taken in excess of these amounts are not considered to be of very good quality.” Photos show:

Page 3597. Tokyo. These sheets of Yuba have just recently been lifted from the evaporating pan and hung up to dry. They are about 17 by 21 inches” (neg. #46786). The sheets shown from a different angle (neg. #44787).

Page 3639. Tokyo. “A nearby view of a tray of broken pieces of Yuba. Not quite so close a view as #44744 (neg. #44803).

Pages 6924-25. Notes by Mr. W.J. Morse, Tokyo, Japan. Today was set aside for studying miso. However, in the process: “At several stores we found Yuba in abundance, more so than last season. A number of different forms of miso [?] Yuba were found at one store, among which was one we had not observed before.” Address: Agricultural Explorers, USDA, Washington, DC.

137. Morse, W.J. 1929. Letter from Dr. [sic] Morse. Tokyo, Japan, July 20, 1929. *Proceedings of the American Soybean Association* 2:50-52. Tenth annual field meeting. Held 22-23 Aug. at Guelph, Ontario, Canada.

• **Summary:** This letter from W.J. Morse was read before the 1929 convention of the American Soybean Association at Guelph, Ontario, Canada. This is the first annual ASA meeting he has missed. He begins with a brief description of the “Oriental Agricultural Exploration Expedition” headed by Mr. P.H. Dorsett and himself. They plan to study soybeans in Japan first. “The largest soybean section is the Island of Hokkaido which has an acreage of 215,212 [planted to soybeans] and produces 3,184,245 bushels of beans” [yield = 14.8 bushels/acre].

“On our arrival and after establishing headquarters in Tokyo, we first began to look up varieties which we might send back to the United States for the 1929 planting. We succeeded in packing up about 100 lots which are now growing in the variety plots at Arlington Farm [Virginia]. In hunting out this seed, we were very much surprised to find the soybeans listed with the garden beans and as garden beans. For the most part these are grown as green

vegetable beans. These sorts are black, brown, greenish yellow, and yellow seeded varieties of early, medium, and late types. Some of the yellow seeded varieties are listed as most suitable for bean curd, soy sauce, miso, natto, and confectionery purposes, such as sweet bean paste, candied beans, roasted beans (like our peanuts), and sugared beans.” Note: Azuki beans, rather than soybeans, are usually used to make “sweet bean paste” in Japan.

“It is amazing, the extent to which the soybean is used for food in Japan. Whether or not it can be used in the United States in all of the ways used here is extremely doubtful, that is for human food.” There is no doubt that American soybeans will be used mostly to produce oil and oil meal. “It may interest you to know that the beans produced in Japan are used entirely for human food, green manure, and planting purposes. The grain varieties have seed of higher quality than those produced in Manchuria and are not used for oil and oil meal production as [are] the beans of Manchuria. The great soybean oil and meal production of the Orient is confined almost entirely to Manchuria.

“Another thing which surprised us greatly was the extent to which soybeans are used for green manure purposes in the rice paddies.” The plants are turned under in the mud after water has been run into the paddies.

“Another extensive use of the soybean is for bean curd, or tofu, which is manufactured only... in small shops scattered about the cities and country villages. This curd is used in many ways, being the meat of the poorer classes. It is used, however, quite generally in making bean-curd soup [miso soup with tofu] which is sometimes served at breakfast and nearly always at supper. The bean curd is peddled about from house to house by men with two tubs suspended from a bamboo pole over their shoulders. The sound of the little horn of the bean curd man as he announces his coming has become quite a familiar sound to our ears as we go along the streets or hear him pass under our office windows.

“Soy sauce is manufactured on a very large scale and is universally used by the Japanese, rich and poor. We have had the pleasure of visiting the large experimental laboratory of an experiment station given wholly to soy sauce and saké experiments. In Hokkaido we visited a soy sauce factory, the buildings of which covered several acres. In one of the curing vat buildings where the mash is allowed to cure for about 18 months, we counted ninety large vats.

“Soybeans are used to a very considerable extent for confectionery purposes. The large black, brown, and green seeded varieties are used in making sweet bean paste which is put up in small thin slabs and then done up in very attractive packages. Roasted beans, similar to our roasted peanuts, may be found at nearly all confectionery stores. Roasted beans are also sugar coated and others are sprinkled with small pieces of sea-weed during the roasting, which gives an appearance of mottled beans (rather a familiar sight to our mid-west farmers). Then, there are the candied beans,

that is, beans which have been boiled in syrup.

“Miso and natto are two forms of bean foods in which the beans are first cooked and then treated with certain bacteria [sic, microorganisms]. Miso is used largely in soups which are consumed at breakfast. Both of these foods are quite largely used.

“Other products used for food are roasted soybean flour, soybean vermicelli, pickled green beans in the pod, yuba—the film produced by boiling soybean milk, and dried frozen bean curd.” Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the term “dried frozen bean curd” to refer to dried-frozen tofu.

Note 2. This is the earliest English-language document seen (Dec. 2005) that contains the term “roasted soybean flour.”

“Another surprising thing is the very extensive use of the soybean as a green vegetable bean. As early as May, small bundles of plants with full grown pods were seen on the market. At the present time the market is virtually flooded with bundles of plants with full grown pods, the seeds of which are also full grown. The pods are boiled in salt water and the beans eaten from the pods.

“During the past two weeks we have visited large sections near Tokyo where soybeans are grown for green vegetable purposes. The beans are grown in rows 2 feet apart and in 95 per cent of the cases there are other crops planted between the bean rows, such as early cabbage, onions, lilies (for the edible bulbs), late varieties of soybeans, late plantings of soybeans, and other early truck crops.” Address: USDA, Washington, DC.

138. *Chinese Economic Journal*. 1929. Soya beans and bean oil industry in Manchuria. 5(3):791-805. Sept.

• **Summary:** “According to their order of importance, the agricultural products of Manchuria are as follows: soya beans, *kaoliang* millet, corn, wheat, barley, rice, buckwheat, hemp, tobacco, cotton, sugar beets and other minor crops.”

The yellow bean (*Huang Tou*) is by far the most common, growing in abundance in North and South Manchuria. When the hilum and seed scar is colored white, it is called *Pai Mei* (meaning white eyebrow) *Huang Tou*. When the hilum is golden hued, it is called *Chin Huang tou*. The seed of this variety is almost globular. When the hilum is black, it is called *Hei Chi Tou* or black belly. All the three varieties produce oil and fat, the first two named being specially good for the preparation of bean-curd [tofu], one of the most palatable vegetable dishes of the Chinese.

“The green bean (*Ch'ing Tou*) has two varieties. When the seed is green and the cotyledon is yellow, it is called *Pi Ch'ing Tou*. It is said that this variety yields more legumine in the preparation of bean curd than the two varieties of the yellow bean, but of inferior quality. When the seed, the epidermis and the cotyledon are all green, it is called *Ch'ing Tou*. The hilum of this variety is generally tawny or black.

“The black bean (*Hei Tou* or *Wu Tou*) has three varieties: When the epidermis is black and the inside green, it is called *Ta Wu Tou*. It yields oil or fat, and when boiled with millet or rice it is used for food. When the epidermis is black and the inside yellow and of much smaller size, it is known as *Hsiao Wu Tou*. It yields oil, and is used for horse feed, and the refuse for pig feed. When the epidermis is black and the inside yellow, the bean assuming a flattened and elliptical shape, it is called *Pien Wu Tou*, and is used for horse feed, and when pickled for human food.”

“Yellow or green soya beans are used in the manufacture of bean curd, a product of universal consumption in China. The by-product, bean milk, which is highly nutritious, is drunk as milk by many Chinese in the morning. The bean-curd skin [yuba], or the scum of the bean milk, is used for culinary purposes, and is greatly relished on the table.”

“The most important product of the beans is bean oil, which has contributed in no small measure to the prosperity of Manchuria. It has attracted foreign capital, and the annual export of oil is enormous. there are altogether more than 300 bean oil mills in South and North Manchuria, including steam mills and oil-fashion, small plants. In Dairen there are 60 bean oil mills, of which only two are Japanese owned, the rest being Chinese. While other manufacturing industries have passed into Japanese hands with the acquisition of the Leased Territory of Kwantung. Chinese still retain a firm hold on the bean oil industry. Harbin has about 50 oil mills, two of which belong to Russians, the rest being entirely operated by Chinese. Other centers like Mukden, Antung, Newchwang and cities along the Chinese Eastern Railway, the South Manchuria Railway and fourteen other railways have bean oil mills in varying numbers, which go to make the total number of 300 oil mills. Beans harvested in the C.E.R. and the S.M.R. regions and even in the remote hinterland where only mule carts can go, are finally transported to various destinations in freight cars. Each car contains 52,000 cattles of beans, which can produce about 5 thousand cattles of oil and 1,000 bean cakes, every cake weighing 46½ cattles. The 50 oil mills in Harbin consume annually about 490,000 tons of beans, valued at \$35,000,000.”

“The steam oil-mill and the old-fashioned mill differ from each other in mechanical equipment and in the number of presses employed. The old-fashioned mill has only one or two presses, while the steam mill has over twenty press machines. The largest having as many as a hundred. The screw press much in use in the former mill consists of a primitive wedge, that is now being replaced by the metal screw. The screw is turned by hand by the man in charge of the machine. In modern steam mills a steam pump operates a hydraulic press that puts great pressure on the prepared beans underneath. As the hydraulic presses are of larger dimensions, the cakes produced are greater in diameter and thickness than those made from screw presses.”

139. Sprecher von Bernegg, Andreas. 1929. Tropische und subtropische Weltwirtschaftspflanzen; ihre Geschichte, Kultur und volkswirtschaftliche Bedeutung. II. Teil: Oelpflanzen [Tropical and subtropical plants in international commerce; their history, cultivation, and economic significance. Vol. II. Oilseeds]. Stuttgart: Verlag von Ferdinand Enke. See vol. 2, p. 128-70. Illust. Index. 25 cm. [48 ref. Ger]

• **Summary:** The soybean (p. 128-70). Contents: Introduction. Name, place of origin and history. Description of the plant: Systematic, morphology, varieties, selection. General conditions for growth: Climate, soil. Cultivation of the plant: Planting, care. Harvest and storage. Composition and products. Utilization: As a fodder plant, as a coffee substitute, industrial non-food uses, as a food (as a green vegetable, soy sprouts, soy chocolate, soymilk, casein, tofu and soybean quark {*tofu oder Sojabohnenquark*}, natto {*Buddhistenkäse*}, hamanatto, yuba, miso, shoyu or soy sauce {*Sojasauce*}). Production and trade.

Concerning green vegetable soybeans, the author states: “Three-quarter ripe soybean seeds yield a good, green vegetable (*Dreiviertelreife Sojabohnen geben ein gutes, grünes Gemüse*).” Address: PhD, Titularprofessor an der Eidgenössischen Technischen Hochschule, Zurich, Switzerland.

140. Shen, Chennen. 1930. The importance of soybean. *China Critic (The) = Chung-kuo Ping-lun Chuo Pao (Shanghai)* 3(18):416-19. May 1. [Eng]

• **Summary:** Contents: Introduction. Domestic consumption of soybeans. Foreign consumption of soybeans. Future prospects.

Soybean, called yellow bean in China, is “cultivated in all parts of the country, but most abundantly in Manchuria. While in 1913 the export of soybean amounted only to about ten percent of the total export and ranked next to silk and tea in importance, it has in sixteen years increased five times in value, risen to twenty percent of the total export and taken the premier place in our export trade! No other commodity has ever experienced such an overwhelming prosperity in such a short time in the history of China.”

“Everybody knows that we Chinese live on rice and wheat. But not everybody realizes that we live just as much on soybeans. The soybean is consumed in large quantities by the northerners as well as by the southerners. Its numerous forms of preparations are common articles of food found in every household. Recent scientific investigations have shown that the soybean satisfies a particular requirement in the Chinese dietary.”

The human body is like a machine. It needs carbohydrates and fats for fuel and motive power, and protein for repairing worn-out parts. A table compares the nutritional composition of soybean, rice and wheat. “It is

evident that soybean is entirely different from either wheat or rice. Whereas wheat and rice supply carbohydrates in the form of starch, soybean is mainly the source of protein. It is interesting to note that the poorer class of people in China consumes very little meat but seems to have sufficient amount of protein. Remembering that every Chinese takes a large amount of soybeans in various forms of preparation, we can readily understand how the protein requirement is satisfied. As soybean contains more than twice as much protein as does any meat and is much cheaper, we can satisfy our protein requirement at one-tenth of the cost of meat.”

Exact data regarding soybean production in China are lacking. “The Manchurian crop is more accurately estimated at 5,200,000 tons [probably metric tons] in 1928. The production of soybean in all other provinces has been estimated at 2,000,000 tons by Horvath and 10,000,000 tons by Marakujew [in Russian]. The total exports of soybeans, soybean oil and soybean cake is about 3,500,000 tons, leaving 3,750,000 to 11,750,000 tons for domestic consumption. The consumption per capita is thus 20 to 65 lbs. per year. These two figures at least represent the two extremes. Marakujew’s figure is probably nearer to the actual. These 65 lbs. of soybean are used: -”

1. As soybean oil. 2. As soybean milk, “a very popular drink in China,” “which is to the Chinese as cow’s milk is to the Westerners.” The process for making this milk is described briefly and a table compares its nutritional composition with human milk and cow’s milk. The composition of the three are “very similar. One of the products of “soybean milk is the pellicula (Cc = Chinese characters given) (*doufu-pi* [yuba]) which is a thin sheet coagulated on the surface of the milk when it is heated. It is especially rich in protein and fat and used as a table delicacy.”

“4. As soybean curd (Cc: *doufu*), one of “the most universal preparations” of the soybean. “It is relished by the poor as well as the rich. When a coagulating agent like gypsum is added to the bean milk, a thick mass separates out.” “It is very similar to meat in chemical composition.” A table compares the composition (only protein, fat, and carbohydrate on an “as is” basis) of soybean curd, beefsteak, pork chops, and eggs. “Although the protein content of ‘tofu’ is only half of that of meats, we see the economy of it even if we have to use a double quantity of it. The solid bean curd (Cc: *doufu gan*) is more like meat as it contains less water than ‘tofu’ and is also extensively used in China.

“4. As soy sauce, another popular soybean preparation...” “Other fermentation products like the fermented soybeans (Cc: *douchi*) and the fermented ‘tofu’ (Cc: *furu*) serve similar purposes.” Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “fermented soybeans” to refer to these Chinese-style “fermented black soybeans.”

“5. As a vegetable. Cooked [green vegetable] beans

are also used by the Chinese but not very extensively. Experience has taught us that the cooked whole beans are not so digestible as 'tofu' or other preparations. However, soybean sprouts, obtained by germination in water, are highly digestible and contains the antiscorbutic vitamin C, which is lacking in the original seed."

"The chief demand for soybean in foreign countries is for the oil and the bean cake." The oil is used for either edible or technical [industrial] purposes and the cake is used as a fertilizer or as cattle feed. "The soybean owes its popularity to its resemblance to cottonseed oil which is widely used in making soap, lard [substitutes] and oleomargarine. The first shipment to Europe was attempted by Japanese in 1908. It was warmly received..."

"Due to its peculiar smell, the raw soybean oil is rarely used in western countries for cooking. But now it is possible to refine this oil and render it entirely palatable to the western taste. It has been put on the market as salad and cooking oils. By the process of hydrogenation, the liquid oil can be transformed into a solid fat, which is an excellent substitute for animal lard" [or butter].

"Thus we see that in a period of twenty years, soybean has extended its usefulness from the Chinese dietary into industries of world-wide importance and is now one of the most valuable agricultural products not only of China but of the whole world."

"In Germany and Denmark artificial milk is regularly manufactured from soybean and sold on a commercial scale. Soybean milk powder is also being manufactured.

"The soybean curd has also a good future, as it can be used to make meat substitutes. Artificial meat has been prepared by a German soybean factory.

"The biggest possibility in the popularization of soybean as a food is the soybean flour. From the bio-chemical point of view, white bread made from the wheat flour is deficient in protein and vitamins. Therefore a substance like soybean should be a valuable addition to the wheat flour. In fact, half a dozen kinds of soybean flour are already on the market in Europe and America."

"The phenomenal rise of the soybean as a universal article is not a matter of accident: It is the result of years of intensive scientific research. We should be thankful that we Chinese are not only the biggest consumer but also the biggest producer of this valuable article. But in the face of keen competition at the present time, we should look out lest this leguminous seed should fall into the same pit as did our silkworm and the tea plant. Up to the present we have been benefited by the researches of foreign countries and also the laboratories of the South Manchuria Railway and the Chinese Eastern Railway, whose immediate interests are not purely Chinese. Are we going to lead the world in soybean production? The future is by no means bright. Already the Chinese soybean oil mills are suffering due to their out-of-date equipment and inefficient process. America

is rapidly increasing the acreage for soybean planting. When the American soybean crop is big enough to supply herself and other countries, China will have a difficult battle to fight. China should take an active part in studying and widening the usefulness of soybean as a food and as an industrial raw material."

141. Dorsett, P.H.; Morse, W.J. 1930. German soybean coffee sold in Dairen, Manchuria (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea), Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.

• **Summary:** Page 5413 (11 Aug. 1930, Dairen, Manchuria). W.J. Morse's notes. "After taking the July expense account to the American Consulate to be sworn to, we went to a Chinese store to look up a soybean health coffee made by the Chinese. We learned that such a product was made at another store. In looking over the shelves for possible soybean products we discovered the German Soybean Coffee mentioned by Mr. Arakawa and for which we had searched at some Russian stores recently.

"This product put up in a green paper box containing 500 grams, is sold under the name 'Korufrank' and for 35 sen. The material is rather coarsely ground and consists of two-thirds roasted cereals and one-third roasted soybeans.

"Upon inquiring at the other Chinese stores for the soybean health drink, we were told that they make it only during the winter months. It is used as a beverage, food and tonic, and will apparently cure or relieve any ailment known to mankind. It is from roasted soybean flour, millet, sesame seed, pine nuts, watermelon seeds and walnut meats.

"After lunch we made a seed collecting trip to the Dairen Wharves and S.M. Ry. [South Manchuria Railway] Storage Yards. In our many visits... we have never seen so little activity in the soybean shipping..."

Page 5688 and 5689. A table titled "Itemized schedule of travel and other expenses" for Aug. 1930 includes the following: Aug. 4. 2 Pkgs. bon yuba-30 sen. 10 sheets yuba-30 sen.

Aug. 5. 1 Pkg. soybean health coffee-95 sen. 2 Cans soybean coffee substitute-70 sen. 2 Cans Ajinisono-soybean-2.00 yen. 2 Cans Chinese soybean coffee-1.16 yen. 2 Cans Ajinoto-soybean-2.00 yen. 1 lb. soybean cakes-50 sen.

Aug. 11. Pkg. Masunohana (soybean)-85 sen. Pkg. Setsuguka (soybean)-55 sen. Address: Agricultural Explorers, USDA, Washington, DC.

142. Dorsett, P.H.; Morse, W.J. 1930. Yuba in China (Document part). In: P.H. Dorsett and W.J. Morse. 1928-1932. Agricultural Explorations in Japan, Chosen (Korea),

Northeastern China, Taiwan (Formosa), Singapore, Java, Sumatra and Ceylon. Washington, DC: Foreign Plant Introduction and Forage Crop Investigations, Bureau of Plant Industry, USDA. 8,818 p. Unpublished log.



• **Summary:** Page 6269. P.H. Dorsett's notes. Peiping, China. October 24, 1930. Friday. A photo taken in Peiping shows: "A little more than one-half life sized picture. Small pieces or sticks of yuba [dried yuba sticks] made from the film taken off hot soybean milk. Chinese name 'Fu chu', meaning 'Curd bamboo'" (neg. #46119). Address: Agricultural Explorers, USDA, Washington, DC.

143. Kellogg, John Harvey. 1931. Soybeans as human food. III. *Good Health (Battle Creek, Michigan)* 66(2):24-25, 52-53. Feb.

• **Summary:** Contents: Introduction. The soybean combats intestinal putrefaction (bifidus and acidophilus bacteria). The economic value of the soy as human food. Explorer Stefansson demonstrates the deadly character of an exclusive flesh diet. Effect of the soybean (in preventing rate deterioration).

"Metchnikoff and Tissier of the Pasteur Institute showed how Nature protects us by providing friendly germs to keep guard in the intestines, the lactic-acid-forming

bacteria, *bifidus* and *acidophilus*. This discovery enables us to drive out the bad germs from our interiors by drinking acidophilus milk or better by the use of lacto-dextrin, which makes the friendly germs grow luxuriantly and kills off the undesirables, thus 'changing the flora,' and so combatting constipation, colitis and all the evils of auto-intoxication. It thus appears that change of flora is, in fact, a battle between *B. acidophilus* and 'meat germs' (Herter). Von Noorden, the world-famous German physician, has demonstrated that the soybean is of very great service in changing the intestinal flora, helping materially in driving out the offensive germs which pollute our bodies... Meats, on the other hand, are the chief source of these mischief makers."

Page 25 shows an interesting photo titled "Boiling soybean milk in copper pans for making yuba, which is hanging above the pans in thin sheets folded over sticks."

"Excessive meat consumption is one of the besetting sins of the people of this country. Our per capita meat consumption is five ounces per day, just five times that of Italy (1.0 oz.) and ten times that of North China (0.5 oz.), while the average native of South China eats no meat at all, and is one of the hardest and most industrious of the world's workers" (p. 25).

"Although we are thousands of years behind Oriental nations in our appreciation of the food merits of this highly endowed legume, there can be no doubt that it is destined to play a large part in the feeding of America's millions in the long and brilliant future which is opening up before this greatest and most highly privileged of all nations that ever lived." Address: M.D., Battle Creek, Michigan.

144. Genin, G. 1931. La caséine végétale: Propriétés et emplois. I. [Vegetable casein: Properties and uses. I.]. *Industrie Chimique (L')* 18(214):784-85. Nov. Abstracted in *Le Genie Civil* 100(14):352. April 2, 1932. [1 ref. Fre]

• **Summary:** In this article are described the preparation of the vegetable milk from soybeans from which the casein is derived, the preparation of casein in industry, and its industrial uses. To make vegetable casein the oil is first removed from soybeans. Carbon tetrachloride can be used. The protein is then extracted from the defatted cake and precipitated, using acetic acid or soda. (The Chinese and Annamites prepare vegetable casein in sheets, which are very delicate and yellow in color.) The coagulated liquid is separated from the liquid supernatant, washed and dried. The resulting product (which may be treated with formol) can be used to make galalithe/galalith (a hornlike or plastic, often transparent substance), adhesives, porcelain, oil-based paints, paper coatings or sizings (to make paper more resistant to and impenetrable by water), soap, insecticides, and cellulose-type products. Address: Ingenieur Chimiste E.P.C.I.

145. Takenobu, Yoshitaro. ed. 1931. Kenkyusha's new Japanese-English dictionary. 2nd ed. Tokyo: Kenkyusha. iv +

2280 p. 19 cm. Title also in Japanese: *Shin Wa-Ei Daijiten*.

• **Summary:** Food words that are not related to soy:

akameshi: see sekihan.

amanatto: sugared red beans [a very popular snack of cooked azuki beans coated with sugar].

ama-zake: sweet liquor (made from fermented rice).

an: bean jam. [an no haitte iru]: stuffed with bean jam.

[an o ireru]: to stuff (a cake) with bean-jam. [an ni kurumu]: to cover (a cake) with bean-jam.

anko: bean-jam = an.

anko: not listed.

azuki: a red bean; an India bean. [azuki-iro no]: reddish brown, russet. [azuki meshi] = sekihan.

beni-shôga: not listed.

goma: a sesame; a gingelly (plant); *Sesamum orientale*; a sesame seed. [goma abura]: gingelly oil. [goma-suri]: a flatterer, a toady, a sycophant. [goma o suru]: to pound sesame seeds; to flatter.

gomashio: not listed.

kaiseki: not listed (at least not using modern characters).

kaisô: seaweeds, marine plants; algae.

kombu: a tangle; a tang; a devil's apron. *Laminaria*.

konbu: not listed.

mochi: rice-cake. [mochi-tsuki]: rice-cake making.

[mochi o tsuku]: pound boiled [glutinous] for rice-cake.

[mochi ni tsuku]: cannot manage (handle); do not know what

to do with. [mochitsuki saichû-datta]: we were in the middle of pounding [rice to make] mochi. [mochi wa mochi-ya]:

Every man has his forte = Every man to his trade.

nankin-mame: a groundnut; a peanut; a monkey nut.

nori: laver, sloke. [hoshi (ajitsuke) nori]: dried (seasoned) laver.

okowa: not listed.

sekihan: rice boiled together with red beans [azuki beans].

sembei: a cracknel [of wheaten flour]; a rice-cracker; a wafer.

senbei: not listed.

shiruko: red-bean soup with rice cake. [shiruko-ya]: a *shiruko* shop.

shôjin (3): abstinence from animal food; religious abstinence; lenten fare; vegetable diet; maigre food. [shôjin ryôri]: a vegetable diet. [Nihon no sôryô wa taitei shôjin o suru]: Most of Japanese priests are vegetarians. [Uchi de wa kinyôbi wa shôjin de gozaimasu]: At my home we eat vegetarian meals on Friday.

soramame: A broad bean; a horse bean; a straight bean.

wakame: *Undaria pinnatifida*.

zôni: rice-cake boiled with vegetables. [zôni on iwau]: take the New Year's breakfast of rice cakes boiled with vegetables [to celebrate New Year's Day with zoni (mochi soup)]. Address: General editor, Japan.

146. Takenobu, Yoshitaro. ed. 1931. Kenkyusha's new

Japanese-English dictionary. 2nd ed. Tokyo: Kenkyusha. iv + 2280 p. 19 cm. Title also in Japanese: *Shin Wa-Ei Daijiten*. [Eng; jap]

• **Summary:** The first edition of this dictionary (titled *Takenobu's Japanese-English Dictionary*) was published in 1918. In 1931, Kenkyusha undertook a major revision in the dictionary by expanding upon former entries and adding newer ones. The British diplomat George Sansom, who later became a renowned historian of Japan, was a major contributor to and editor of this 2nd edition.

Soy related words:

abura[a]ge = aburaage or aburage: fried bean-curd.

[Tonbi ni aburaage o sarawareta yôni]: with a stupid look of surprise. [literally, as when a kite {a bird of prey} snatches away your aburaage]. This is the earliest English-language document seen (May 2012) that contains the word *aburaage*. It refers to deep-fried tofu pouches.

atsuage: not listed.

age [tôfu]: fried bean-curd.

ama-miso: not listed.

Daitokuji-natto: not listed.

daizu: a soya (soy) bean. [daizu kasu]: a [soy] bean cake [a co-product of soy bean oil].

daizu abura: not listed.

dengaku: baked bean-curd daubed with miso. [dengaku-zashi ni sareru]: to be transfixed; be pierced through (with a spear).

eda-mame: green soy-beans.

ganmo: not listed.

ganmodoki: not listed.

Hamana-natto: not listed.

Hama-natto: not listed.

hiryozu: not listed.

[inari-zushi]: a kind of 'sushi' (fried bean-curd stuffed with boiled rice).

kinugoshi no: strained through silk cloth [no mention of tofu].

kogori-dôfu: not listed.

koi-kuchi [shoyu]: not listed.

kôji: malt (mugi); yeast; leaven (kôbo); [kôji-ya]: a maltster [a maker of kôji]. [kôji ni suru]: [to] malt.

kôri-dôfu: frozen bean-curds.

kuro-mame: a black soy-bean.

miso (chomiryô = seasoning): bean paste; miso.

[miso shiru]: miso soup.

[miso o kakeru]: to put miso on (some food); (shuppai suru): to make a mess (sad work) of it; put one's foot in it.

[]: mash the miso.

[]: to speak meanly of (a person); speak of (a person) in the most disparaging terms; say everything bad about (a person); denounce scathingly (roundly).

[]: a pretty mess you have made of it. [miso mo kuso mo isshoni suru]: his ideas are confused; He confuses one thing with another. [miso no miso kusaki wa, jô miso ni arazu]:

The secret of art lies in concealing art [Akiko never heard this saying].

misokoshi: a miso strainer. [misokoshi de mizu o sukuu]: weave a rope of sand; attempt impossibilities [literally, to try to scoop up water with a miso strainer].

miso-mame: a soja (soy) bean.

miso-zuke: anything pickled in miso.

momen: cotton [no mention of tofu].

nama-age: not listed.

nattô: fermented soy-beans.

nigari: bittern, brine. [nori no tsukudani]: laver boiled down in soy [sauce].

oboro: not listed.

okabe: not listed.

okara: not listed.

saishikomi [shoyu]: not listed.

shimi-dôfu: not listed.

shiro-shoyu: not listed.

shitaji: soy [shitaji sosogi]: a soy pot [soy sauce dispenser].

shôyu: soy [sauce].

suki-yaki: sukiyaki: slices of beef cooked *à la japonaise*.

Note: Grilled tofu is an essential ingredient in sukiyaki but is not mentioned in the definition.

tamari: (a kind of) soy.

tôfu: bean-curd; tōfu.

[tofu itcho]: a piece (cake) of bean-curd.

[tofu-ya]: a bean-curd dealer (seller).

[kare ni iken shita tote, tōfu ni kasugai da]: advice to him is like water sliding off a duck's back. It is a mere waste of words (It is just as well to pour water into a sieve) to advise him.

[tofu-ya e ni ri, saka-ya e san ri to iu tokoro da]: there is no human habitation within five miles of the place. [It's out in the boondocks].

unohana: (1) Flowers of the *Deutzia scabra*. (2) [tofu no kara]: bean-curd refuse.

usukuchi shoyu: not listed.

yaki-dôfu: broiled bean-curd.

yuba: dried bean-curd [sic, the film that forms atop soymilk when it is heated]. Address: General editor, Japan.

147. Yang, Ximeng; Tao, Menghe. 1931. A study of the standard of living of working families in Shanghai. Peiping: Institute of Social Research. 86 + lvi p. See p. xxxii. 23 cm. Series: Social Research Publications, Monograph No. III. Facsimile edition reprinted in 1982 by Garland Publ. Co. (New York). [40 ref]

• **Summary:** Note 1. On the title page, the authors' names are given as Simon Yang and L.K. Tao.

Contents: Part I: General results. Part II: Statistical tables.

In Part I, section IX is titled "The standard of living food" (p. 47-55). The 2nd most important type of food, after

"(a) Cereals and products" is "(b) Legumes and products," which states (p. 48): "Of beans, the young soy bean (Chinese characters: mao dou) formed the principal kind, but among the bean products, bean sprouts, bean curds of various makes and mung bean starch were consumed in considerable quantities."

Page 49: "(g) Fat and oil: Bean oil [soy] formed the most important article in this class, of which the average consumption was 4.78 catties (2.8 kg) per family per month. Lard, the second in order, lagged far behind..."

"(h) Condiments: Salt and soy sauce were the principal articles of this class."

Page 50: Whereas rice accounts of 44.6% of total expenses, legumes and products account for only 7.6%. More rice and legume statistics appear on page 53.

In Part II, "Statistical tables," six long tables mention soy as follows: I. "Average quantity of and expenditure for the principal articles purchased per family per month, by income groups" (p. ii-iii): Yellow soy bean sprouts, 0.15 expenditures. Soy bean curd, 0.26. Sheet bean curd, 0.18 [pressed tofu sheets, pai-yeh or ch'ien-chang]. Bean curd, fried, 0.10. Bean curd, dried [doufu gan] 0.16. Soy bean oil, 1.19. Soy bean sauce 0.38.

II. "Average quantity of and expenditure for the principal articles purchased per family in each of the twelve months under investigation (p. viii-xxx): There are entries for: Yellow soy bean sprouts, 1.87 annual expenses. Soy bean curd, 3.14. Sheet bean curd, 2.15. Bean curd, fried, 1.19. Bean curd, dried [doufu gan] 1.95. Yellow soy bean, 0.38. Young soy beans with pods [mao dou, edamame], 0.81.

III. "Average quantity of and expenditure for the "other" articles of food purchased per family in a year" (p. xxxii, xxxvii). Bean curd, fermented, odorous, 0.05 annual expense [ch'ou toufu]. Soy bean milk, 0.17. Fried beans, with salt, 0.21. Fermented bean curd, fried, 0.05. Bean curd skin, 0.02. Bean curd, fermented, with fragrant malt, 0.05. Bean curd, frozen, <0.005 [tung-toufu, ping-toufu]. Bean curd skin, cooked in skein forms, <0.005. Dried bean curd, fried, 0.005. Bean curd, fermented, 0.6. Soft bean curd, 0.05. Soy bean dregs, 0.02 [okara?]. Sheet bean curd, in skein [netlike] forms, > 0.005. Soy bean paste, 0.01.

Note: This is the earliest English-language document seen (Oct. 2011) that uses the word "odorous" or the term "Bean curd, fermented, odorous" to refer to *ch'ou toufu*.

VI. "Average quantity and fuel value of food consumed per family in a year" (p. l-li). This table has 6 columns. (1) Classes and articles of food. (2) Quantity, total (grams). (3) Quantity of protein, grams. (4) Quantity of fat, grams. (5) Quantity of carbohydrates, grams. (6) Fuel value, calories. Note 2. For soy products we will give only the quantity / amount purchased each year per person in grams. Yellow soy bean sprouts, 34,229. Soy bean curd, 55,080. Sheet bean curd 8,34. Bean curd, fried, 6,163. Bean curd, dried, 13,218. Yellow soy bean, 2,407. Mung bean sprouts, 15,257. Note

3. The weight of mung bean sprouts purchased was less than half (44.5%) the weight of yellow soy bean sprouts purchased. Young soy beans with pods, 7,180. Bean curd, fermented, odorous, 364. Soy bean milk, 6,963.

At the end of the book is a very interesting bibliography of the best books on China's economic and social development, divided into these periods: China during the interregnum [Republic of China] (1912-1949). Modern Chinese economy: The late imperial period (late 19th and early 20th centuries), the agrarian economy, foreign trade and investment, 20th century economic development, labor and the economy. The wartime economy and postwar problems.

Note 4. This book would have been much more useful if the Chinese names of these foods (in both Chinese characters, and transliterated) had been given. We are unsure of the exact identity of: (1) Fried beans with salt. Are these salted, oil-roasted soybeans? (2) Bean curd fermented with fragrant malt vs. bean curd, fermented, odorous. Address: China.

148. *Genie Civil (Le)*. 1932. Chimie industrielle: Propriétés et emplois de la caséine végétale [Industrial chemistry: Properties and use of vegetable casein]. 100(14):352. April 2. (52nd year. No. 2590). [Fre]

• **Summary:** Vegetable casein is extracted from the seed of the soybean (*graine de soja (haricot de Mandchourie)*). The Chinese and the Annamites [of today's Vietnam] have long used this casein to prepare very dry, brittle leaves or sheets of a yellowish color [yuba]. Certain European industries use this product as a raw material. In *L'Industrie Chimique* of Nov. 1931 and Jan. 1932, Mr. Genin gives details on the purification of this protein, on the preparation of the casein, and on its principal industrial applications. Address: Paris, France.

149. Orosa, Maria Y. 1932. Soybeans as a component of a balanced diet and how to prepare them. *Manila (Philippines) Bureau of Science, Popular Bulletin* No. 13. 53 p. [16 ref]

• **Summary:** Contents: Introduction. The cooking of soy beans (89 Filipino recipes, p. 7-35), incl. roasted soy beans, soy-bean soups etc.—most recipes use whole soybeans, but quite a few use tofu (*tokua*), soy sauce (*toyo*), soy-bean flour, or soy-bean milk, and a few use *tahuri* (brine fermented tofu) or soy-bean sprouts. Some common foods made from soy beans and methods of preparing them (p. 35-53): Soy-bean milk, condensed soy-bean milk, soy-bean milk powder, soy-bean casein, soy-bean curd (tofu; *tokua* or *toqua*). *Tahuri* or *tahuli* (fermented tofu). Frozen tofu. Bean curd brains or *tofu nao*. Dry bean curd or *topu khan* (tofu-kan, dipped in burnt millet sauce and rubbed with fine salt). Fragrant dry bean curd. Thousand folds (thin layers of fresh tofu pressed in cheesecloth. “On standing, the thousand folds mold and develop a meatlike flavor. This is fried in sesame oil and

served in place of meat”). Fried bean curd. Soy sauce (called by the Chinese “ch’au yau,” or drawing oil; or “pak yau” or white oil; by the Japanese “shoyu”; and the Filipinos, “toyo”). Natto. Hamanatto (p. 49). Yuba. Miso. Soy-bean flour. Soy-bean oil (used in the manufacture of lard and butter substitutes; also in paints, printing inks, etc.). Soy-bean meal. Soy-bean coffee. Soy-bean sprouts.

Note 1. This is the earliest English-language document seen (Oct. 2008) that uses the term “soy-bean casein” (or “soy bean casein” or “soybean casein”), probably to refer to soybean protein.

“When and by whom the soy bean was first introduced into the Philippines, no one can ascertain. The Filipino people have long known some important soy-bean preparations, such as soy sauce, or ‘toyo,’ bean curd, or ‘tokua,’ fermented bean curd or ‘tahuri,’ not knowing that they were prepared from this bean. The seed is known in some parts of the Philippines, where it is grown, as ‘utao.’”

“The main object of this pamphlet is to encourage the Filipino people to use more soy beans, and preparations made from them as food” (p. 3-4).

“Soy beans are grown in some parts of the Philippines. According to Doctor Roxas, Director of the Bureau of Plant Industry, 2,481 tons were grown in Batangas in 1921 and 4,218 tons, in 1930. However, the importation of soy beans in 1924 was 4,657 tons. Doctor Roxas says that soybeans can be grown in all parts of the Philippines” (p. 6). “Immature soy beans may be cooked in the same way as lima beans (*patani*)” (p. 7).

“The soy-bean curd was first produced by Whai Nain Tze, before the Christian Era and was introduced into Japan from China by the Buddhists. It was introduced into the Philippines by the Chinese and has become a very popular food in Manila and in places where there are Chinese who manufacture it for sale. ‘Tokua’ on account of its high fat, protein, and mineral content, is called by the Chinese as ‘meat without bone,’ or ‘the poor man’s meat.’” The Chinese use burnt gypsum (about 1.5% by weight) as a coagulant. In some cases, the curds are wrapped in individual pieces of fine cheesecloth about the size of a small handkerchief, then pressed lightly for a few minutes. They are “unwrapped, spread on shallow bamboo trays (*bilao*) and partially dried at room temperature. Then they are dipped in a weak solution of turmeric to coat the outside in light yellow coloring. Some manufacturers soak the small cakes of curd in brine solution for a short time, then dip them in a solution of burnt sugar or molasses and bake them slightly before putting them on the market.” 100 gm of dry soybeans typically yield 350 gm of tofu (*tokua*) (p. 41).

The section titled “‘Tahuri’ or ‘Tahuli’” begins with 2 paragraphs and ends with a table very similar to those from Gibbs and Agcaoili (1912): “‘Tahuri’ is manufactured in China and exported to the Philippines in large stone jars or in small tin cans. There are some ‘tokua’ manufacturers

in Manila that manufacture 'tahuri' for local consumption. Those that are imported from China are preserved in strong brine solution and the cakes are broken during the shipment so the liquid becomes like a thick emulsion containing pieces of the cured curd." It then contains a new paragraph: "In Manila, the Chinese method of manufacture is to pack the large pieces of soy-bean curd, about 5 inches long, 4 inches wide, and 2.5 inches thick, with much crude salt, in empty gasoline cans. The curd is allowed to cure for a period of several months. During the curing period the bean curd changes from white to a brownish yellow color and develops a peculiar salty flavor to which the Chinese and many Filipinos are educated" (p. 42). Note 2. No information about a fermentation microorganism or process is given.

"The bean curd brains known to many Filipinos as 'tojo' is the unpressed soy-bean curd. The method of making 'tojo' is almost the same as the method used in making 'tokua', only that a smaller amount of the coagulating agent is used, and the very soft but solid mass formed is left undisturbed in the wooden container until used. The Chinese used to peddle this preparation in a wooden pail-shaped container, through different parts of Manila, but on account of the Philippine Health Service regulations, this product is now sold in the markets only. / "The 'tojo' is served with a few tablespoonfuls of medium thick brown-sugar syrup, which gives it flavor, the 'tojo' being almost tasteless. Sometimes it is eaten with sweet oil, sauce, and vinegar, or with finely cut meat and spices." (p. 43).

"Dry bean curd: The fresh bean curd when dipped in burnt millet-sugar sauce and rubbed with fine salt will keep longer than the 'tokua' and is called 'topu khan.' This preparation is usually eaten in soups."

Fragrant dry bean curd or *hsiang khan* ("fragrant dry") has the consistency of smoked sausage. "It is made by subjecting the fresh bean curd to great pressure, which eliminates much of the water content. The pieces of semidry curd are soaked in a weak brine solution in which is dissolved burnt millet-sugar and to which is added powdered spices. The curd is then dried to hardness. This preparation keeps indefinitely and is used in soup making and in vegetable dishes" (p. 43).

Note 3. Cruz and West (1932, p. 78) state that as part of a campaign by the Bureau of Science to encourage the Filipino people to use more soy beans, Miss Orosa "has made excellent cakes, cookies, puddings, sauces, soups, custards, ice cream, and other tasty preparations from Philippine soy beans."

Note 4. The author pioneered the branch of the branch of the Home Extension Service in which home demonstrators helped women in solving their home problems. She started the organization as a food preservation unit under the Bureau of Science in 1923, starting with six home demonstrators that she herself trained. That group became the forerunner of the Home Extension Service in the Philippines. For details on

her work see: In: A Half Century of Philippine Agriculture. Manila, Philippines: Liwayway Publishing. p. 236-37.

Note 5. This is the earliest English-language document seen (Nov. 2003) that contains the word "meatlike." Address: Chief, Div. of Food Preservation, Bureau of Science, Manila.

150. Searle, Townley. 1932. Strange newes from China: A first Chinese cookery book. With 101 rare and choice Chinese recipes and decorations by the author. London: Alexander Ouseley, Ltd. 231 p. Illust. 22 cm.

• **Summary:** Page 83 states that "'Chow' means 'fry,' 'Too Foo' is 'Bean Curd,' and the 'Chop Suey,' although not real Chinese (see Encyclopedia) stands for almost any mixed dish." Soy-related recipes include: Tou fu hah chi tong—Bean curd and prawn soup (p. 92; The author states: "In trying this recipe we used tinned prawns: Beneath the trade-mark of the tin was the following warning against infringement: 'If any man imitate this mark, may his sons be thieves and his daughters prostitutes.'"). Tou fu yuk ming tong—Bean curd and meat soup (p. 93). Tou fu gai pin tong—Bean curd and sliced chicken soup (p. 95).

On pages 108-09 are the names and prices of many Chinese foodstuffs, including Chinese soya sauce (1 lb. or 3 lb. net)—\$0.25 or \$0.45 per jug, Chinese bean sauce—\$0.15 per can, Chinese red bean curd [fermented tofu]—\$0.18 per can, Dried Chinese beanstick [yuba]—\$0.22 per lb., Chinese bean cheese [fermented tofu]—\$0.50 per jar, Chinese bean cake [tofu]—\$0.30 per can.

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "Chinese beanstick" or the term "Dried Chinese beanstick" to refer to dried yuba sticks.

The Encyclopedia (p. 215-17) contains descriptions or definitions of the following: Chop Suey ("an American 'Pidgin English' term originally coined in San Francisco..."). Tou foo (see Bean curd). Soya bean—*Glycine hispida* ("One of the most valuable foods in the world." "Flour made from the soya bean has immense value as a foodstuff as it contains the only plant albumen which is equal in value to the very much more expensive animal albumen. The Chinese soak the beans in water, then roast them and eat them in much the same way as peanuts." "It is claimed that the soya bean will soon become the chief food of the civilised world as it contains a large proportion of protein which is as valuable as the casein in milk..." "The best way to cook the soya is undoubtedly by means of a pressure-cooker..."). Bean sprouts ("come from the seeds of the soya and can be used as green vegetables all the year round." Describes how to make them). Bean curd ("It is of about the same consistency as ordinary thick cream cheese and is ordinarily used fried with vegetables etc. in lard and in omelettes etc.").

151. L'Heureux, L. 1933. Le soja [Soya]. *Congo: Revue Generale de la Colonie Belge* 1(2):214-36. Feb.; 1(3):365-

83. March. (Bulletin de l'Office Colonial, Bruxelles). [14 ref. Fre; eng+]

• **Summary:** This early publication on soyfoods in Africa describes food uses and methods of preparing soymilk, in both condensed and powdered forms. Tunisia was a French protectorate from 1881 to 1956, when it became independent. France grew soybeans there, apparently at about the same time it started growing them in Algeria (p. 214).

At the exposition of Nanking in 1910 some 400 varieties of soybeans were assembled (p. 214).

In 1908 the firm of Mitsui was the first to try to transport, by sea, soybean seeds from Dairen to Liverpool. It was the beginning of a new industry in England (Liverpool and Hull), in Germany, Denmark (Copenhagen), and Holland (Rotterdam & Amsterdam).

A former Belgian missionary in Jehol (West Mongolia), Father De Preter (*Le T.R.P. Fl. De Preter, Supérieur de la Maison des Pères de Scheut à Yvoir*) has corresponded with the author about soybeans, tofu, and soybean cake in that city. Soybeans are not cultivated on the best soils, which are reserved for wheat. One of his colleagues at Jehol, Father Cyr. De Puydt has worked to improve the soybean crop (p. 219).

Father De Preter has often helped in making tofu (*fromage de soja*), using magnesium chloride as a coagulant. If one uses calcium sulfate, the tofu is softer and the taste seems better. Father de Puydt has improved the manufacture of tofu by using magnesium salts (probably Epsom salts) in place of magnesium chloride. The tofu is eaten after being boiled in water or fried in fat. It is best when fresh. In winter, it is allowed to freeze [frozen tofu in northeast China] so that it can be kept for a long time; it becomes spongelike. But fresh tofu has a special aftertaste to which the European palate finds it difficult to get accustomed. This taste does not come from the coagulant but from the soybeans. When one eats more than two pieces of tofu in succession, one experiences indigestion. It does not produce gas like the beans. Notes that the factory of the Caséo-Sojaïne near Paris, of which Mr. Li Yu-ying is the director, makes tofu and various tofu products. Cooked with eggs, tofu makes an excellent omelet. Cooked with the juice of meat, it takes on entirely that flavor. It can be used to make patés or smoked. Use firm tofu and cook in a mixture of 4:1 water to soy sauce. Then smoke it like meat. This can, for example, replace ham or bacon in an omelet. Tofu paté has much the same consistency and taste as paté de foie gras. Thus, there are many ways that tofu can replace meat (p. 221-24).

Using caséine or légumine of soymilk, the French pioneered industrial soy protein isolates in 1911 (see Beltzer). They were used in various glues, and in coating paper (p. 224-25).

The margarine industry employs only the finest quality oils. Soy oil was not introduced to margarine manufacture in

Europe until about 12 years ago [i.e., 1921], but it has rapidly taken an important place on account of its good properties and low cost. Describes how to make synthetic rubber from soy oil. One of the main uses of soy oil in Europe is in making soaps. Some is also used to make explosives. Mr. Tihon is the distinguished director of the Laboratory of Industry and Commerce at Leopoldville, Belgian Congo (p. 227-28).

Soybean cake (*Tourteau*): Father de Preter in Jehol has assured me that soybean cake is used there to nourish and fatten beasts. For horses, this cake has a surprising effect. If a horse, returning from a trip lean and exhausted, is put on a regimen of soybean cake, it will return to normal in 15 days (p. 230).

Just like the oil, the cake is more and more in demand in Europe, and in certain countries the effect of soybeans on the economy is quite remarkable. Until about 30 years ago, Denmark was a super producer of wheat. But Dutch products were defeated by the lower prices of American goods. Aided by soybeans, the Danes were able to expand their livestock. Soybeans are now imported, the oil is extracted and used to make margarine, while the cake is used to feed livestock—some 18.5 million heads in 1926, not including poultry. The result has been the development of an enormous trade in animal products, butter, cheese, ham, bacon, lard, eggs and even livestock—all accounting for about 70% of Danish exports. Holland is in a similar position (p. 230-31).

In 1912 the “Dairen Mill Owners Association” was founded. By June 1923 all but 7 of the mills in Dairen were members of the association. The oil in the Suzuki mill is extracted using benzine solvent, the most modern method. 32 of the mills, mostly owned by Japanese, use hydraulic presses, while those owned by the Chinese generally use hand-turned screw presses (p. 231-32).

A large table (p. 323) shows exports of soybean seeds, cake, and oil from the ports of Dairen, Newchwang, Vladivostok, and total, from 1908 to 1917. During this time, because of Manchurian mills, the amount of seed decreased, while the exports of cake and meal increased.

Condiments: Shoyu (*shoyou*) is the main one. Several processes for making soy sauce are described in detail. Lea & Perrins Worcestershire Sauce is nothing but a highly seasoned soy sauce (p. 234).

Continued (p. 365): Mr. L. L'Heureux is director of the chemical service of the Belgian Congo. Let's see what the soybean is doing in the Congo. M. Tihon of Leopoldville, said in an interesting report titled *A propos du soja hispida*: Encountered 30 years ago [i.e., about 1903] at Stanleyville by commander Lemaitre, it figured in the collection of the botanical garden of Eala and was the object of experiments at Sankuru in 1914-15 (p. 365).

In this report, Tihon analyzed 3 varieties of soybeans from the plantations of Eala. The soybean would be good for all our [Belgian] colonies; it could replace meat and be used

in the rations of black workers (p. 366-67).

Soymilk: Describes how to prepare it and its properties. According to Prof. Laxa of Prague, fresh soymilk has an acid reaction. Mentions the work of Li Yu-ying. Notes that by adding lactose and a bacterial culture, Yogourth [yogurt] can be made from soymilk (p. 370).

In Peking, soymilk is sold in small bottles of 200-220 cc carrying the title *Lait de pois—Un produit chinois. La nourriture la plus nourrissante. Préparé par ___*. In 1925 one bottle of soymilk daily cost 1 dollar Mex per month. In 1919 in Shanghai, Peking and Dairen, Chinese companies furnished hospitals and private individuals 8-10 oz of concentrated soymilk in bottles (p. 371-72).

A table (p. 373) compares the composition of 3 types of soymilk with mother's milk, cow's milk, and goat's milk; all but the cow's milk (87.00%) contain 90.71% water. The soymilks are: (1) From Tsinan fu, China. (2) From Peking, China. 3. From Japan. The soymilk from Peking was low in fat, so yuba had probably first been removed from it (p. 372).

In China, soymilk is habitually drunk sweetened with sugar. Li Yu-ying reports that one of his parents was nourished from birth with soymilk and for 37 years he has always been in excellent health (p. 374).

A new method for making soymilk. In 1916 Prof. Laxa of Prague develop a method for making soymilk in homes in Europe. The cost of a liter of soymilk in Prague in 1916 was estimated by Laxa as being about 40 centimes if it was homemade. Before the war, there was in London a soymilk factory which intended to place its products regularly on the market. Plans were made to construct two other plants, one in Manchester and one in Liverpool. The synthetic milk syndicate launched a soymilk on the market that was adapted to European tastes. The syndicate's factory, established in Liverpool, used the method of F. Goessel to make 100 liters of soymilk using the following formula (which is given). A Dutch patent (No. 2122 of Sept. 1917) and a Japanese patent (No. 28346) are also cited (p. 375-77).

A table shows the composition of 6 types of Soyama soymilk according to the analyses of Dr. G. Popp of Frankfurt. The protein ranges from 2.5% to 3.77%. Normal soy cream contained 11.5% fat, whereas that which was extra rich for diabetics contained 30% fat. It is very difficult to tell the difference between tea, coffee or chocolate to which one has added Soyama soy cream compared with regular dairy cream (p. 379).

In using the Soyama milk and cream, von Noorden confirms the following statement of Fischer, who studied vegetable milks in general: 1. In the stomach, soymilk gives a flocculent precipitate which is finer [smaller clumps] than that produced by cow's milk. 2. The digestion of soymilk requires only a weak secretion of gastric juice; the period of secretion is therefore short. 3. The time that soymilk protein resides in the stomach is shorter than that of cow's milk protein. 4. The peristaltic action of the stomach is less after

ingestion of soymilk and better coordinated. Therefore, based on these observations, von Noorden recommended soymilk over cow's milk (p. 380).

Hatmaker made powdered soymilk. A table shows its composition, as analyzed by a laboratory in Paris (p. 380).

Yu P'i and Yu Ba are the Chinese and Japanese names of yuba, respectively. Recently a new method for making yuba has been patented in Japan. It consists in the use of an electric ventilator [or fan] placed above the surface of the cooking pot containing soymilk that is not heated above 90°C. A table (based on analyses of the Tokyo Laboratory of Hygiene, of Embrey, and of Adolph) then gives the nutritional composition of 5 types of yuba, including Fu Chu (dried yuba sticks) which (surprisingly) contain 53.68% water.

Note: Maybe this Fu Chu was either fresh or reconstituted yuba. Address: Directeur du Service Chimique du Congo Belge.

152. Carqué, Otto. 1933. Vital facts about foods: A guide to health and longevity with 200 wholesome recipes and menus and 250 complete analyses of foods. Los Angeles, California: Published by the author. 208 p. Index. 24 cm. [20+* ref]

• **Summary:** This manual of food reform discusses the importance of a simple vegetarian diet of natural foods, sunlight and sunbaths, fresh air, pure water, exercise and rest. Also talks about acid and alkaline foods, the influence of mind on health, the failure of synthetic foods, why refined sugar is injurious, the dietetic value of sea plants, table salt is unnecessary and harmful, fruit is man's best food, sulphured and unsulphured fruits, nut butters, food preparation, and the treatment of disease.

The germ theory of disease has not been proven since potentially harmful germs are omnipresent yet often fail to harm healthy individuals (Pasteur was a chemist and laboratory worker, not a physician. Germ action is always secondary; "when germs invade a living organism it is a sign that the organism is enervated and its chemistry perverted." p. 114-15).

The section titled "Fruit and nut confections" (p. 133-35) begins: "Fruit and nut confections made without refined sugar and glucose should take the place of candies." These "sweet-meats"... "should be the only kind of confections allowed to growing children, which have a natural craving for sweets." Recipes include stuffed dates, date caramels, nut fruitose, carob confection, raisin-nut balls, and honey cocoanut balls. For Nut fruitose: Mix dates, figs, raisins, almonds and walnuts. "Run through a food chopper twice. Press the mixture into a flat pan in a layer about 1 inch thick, let stand overnight, and cut into convenient sizes." Note: Carque was a pioneer in the development of healthy, natural treats. The last recipe could be considered a forerunner of the less-healthy "nutrition bar" of the 1990s.

The next section, titled "Nuts and nut butters," states

that “salting and roasting greatly impair the nutritive value of nuts and prevent their proper assimilation. The proteins become coagulated by roasting, and the fats split into glycerine and free fatty acids, while the vitamins are destroyed. Nut butters made from salted nuts should, therefore, have no place in our dietary.” Rather, the peanuts or almonds should be blanched (scalded or parboiled in water or steam). “Since few people, on account of defective teeth, can masticate nuts well enough to be acted upon by the digestive juices, the mechanical emulsification of nuts by means of nut butter mills is quite dispensable.”

The section titled “Melba toast” and “Melbettes” (p. 156) states: “These are delicious dextrinized whole wheat products made by the Cubbison Cracker Co., Los Angeles.” Melbettes are also made from whole rye. “Calavo Melba Toast is another tasty whole wheat product; it contains the natural fruit fat of the California Avocado or Alligator Pear as shortening.”

The section titled “Natural whole rice” (p. 156) notes: “Whole rice, also called brown rice, contains the bran, cuticle, and germ of the cereal. In milling nothing has been removed but the husk and dirt.”

The section titled “The Soy Bean, a Remarkable Food” (p. 158-61) discusses boiled soy beans, soy bean milk, tofu (“it is called by the Chinese ‘the meat without a bone...’ Other preparations of the soy bean, which are but little known in this country, are *natto*, *hamananatto* [*hamanatto*], *Yuba* and *Miso*. The principal use of miso, which is a slightly [sic] fermented mixture of soy beans and rice or barley, is for making soups and for cooking vegetables”), soy sauce, soy bean sprouts, and various recipes. Under “Ready made soy bean products” (p. 161) we read: “As the preparation of the soy bean in the average household is often not convenient, the author has arranged to supply the following products at reasonable prices: Canned Soy Beans, Soy Bean Spread, Soy Bean Stew, Soy Bean Loaf, Soy Vegetable Onion Soup, Soy Bean Vegetable Bologna, Soy Bean Tasty Lunch, to which others will be added in the course of time. These products have met with ready approval, as they fill a long felt want for tasty, nutritious and wholesome vegetable protein foods to substitute meat and dairy products.”

The author’s signature appears at the end of the Preface. Address: Los Angeles, California.

153. Chang, Ta-yü. 1934. Soy bean curd skin as dialysis membrane. *Science Reports of National Tsing Hua University. Series A: Mathematical and Physical Sciences* 2(4):257-61. May. [5 ref. Eng]

• **Summary:** Soy bean curd skin (yuba) is a more efficient dialysis membrane for iron (III) oxide and arsenic trisulfide sols than is pig’s bladder. “Soy bean curd skin is available everywhere in China. Its formation resembles the film on boiling milk.” Address: Dep. of Chemistry, Tsing Hua Univ., Peking, China.

154. Adachi, Isamu; Sakurai, Shigeru. 1934. *Nihon shokumotsu-shi* [History of Japanese foods]. Tokyo: Yuzankaku. 480 p. [Jap]

• **Summary:** This is the best book seen on the history of Japanese foods. The following soyfoods are discussed: Firm tofu, soymilk and okara (p. 290-91; discusses the *Teikun Orai* by Iseño Teijo, tofu-kan, tofu-jiru = soymilk, setsurun-sai = okara), yuba (p. 336), shoyu and tofu (p. 370-71), unohana (okara, p. 377), tofu and natto (p. 382-83).

155. Shanghai Bureau of Social Affairs. 1934. Standard of living of Shanghai laborers. Shanghai, China: Shanghai, Bureau of social affairs, the city government of greater Shanghai; Chung Hwa Book Co., Ltd. xi + 186 p. See p. 111. 24 cm.

• **Summary:** A table (p. 111) includes: “Yellow soy bean sprouts... Fried bean curd... Green bean sprouts... Bean lamina... Dried mung bean starch in strips. Bean curd skin... Yellow bean... Broad bean.”

156. Monnier, Emile. 1935. Les préparations à base de graines de soja dans l’alimentation des Annamites [Preparations based on soybeans in the diet of the Annamites (of Central Vietnam)]. *Bulletin Economique de l’Indochine (Hanoi)* 38:66-86. Jan/Feb. Also in *Annales de Medecine et de Pharmacie Coloniales* (1935) 33. p. 34-57. [11 ref. Fre]

• **Summary:** An excellent, very precise and detailed discussion of the subject. Contents: Introduction, botany of the plant, nutritional composition, and utilization. Soymilk (used to make tofu—*le fromage de soja-dau-phu*). Tonkin soy sauce (*La sauce de soja = dau-tu’o’ng*. It is made by fermentation of a mixture of glutinous rice and roasted soybeans. It is made on a family level. It corresponds roughly to Japanese shoyu and Chinese soy sauce (*téou-yeou*). Describes exactly how it is made). Soy cream [yuba] (*La crème de soja = dau-phu-chuc*; [dried yuba sticks]). It comes in the form of sheets. Address: Chef du Laboratoire de Chimie de l’Institut Pasteur, Hanoi.

157. Monnier, Emile. 1936. La graine de soja: Les préparations à base de graines de soja dans l’alimentation des Annamites [The soybean seed: Preparations based on soybeans in the diet of the Annamites (of Central Vietnam)]. Marseille, France: Imprimerie Ant. Ged. 106 p. 24 cm. [91 ref. Fre]

• **Summary:** The title pages states that this is the published version of the author’s PhD thesis at the Mixed Faculty of General and Colonial Medicine, and of Pharmacy at Marseille. The thesis was presented and defended before the Faculty of Medicine of Marseille on 10 July 1936 to obtain the degree of Doctor of Pharmacy. The author was born on 19 Nov. 1905, at Sarzeau (Morbihan); he is a *Licencié ès Sciences, Pharmacien-Capitaine des Troupes Coloniales*.

Contents: 1. Introduction. 2. The soybean: Historical summary and overview. Soybean botany, the production of soya; its cultivation in Indochina, soybean commerce and trade, chemical composition of the soybean seed (analysis of soybeans from Tonkin), the chemical constituents of the soybean seed, soy oil, food use of soya in Europe, industrial uses of soya, soya in therapeutics and dietetics. 3. Soy-based food preparations from Indochina: Soymilk, the fermentation and preservation of soymilk, tofu (*dâu-phù*), soy sauce, yuba (La crème de soja, *dâu-phù-chuc*). 4. Conclusion.

158. Institut International d'Agriculture (International Institute of Agriculture). 1936. *Le soja dans le monde* [The soybean in various countries of the world]. Rome, Italy: Imprimerie de la Chambre des Deputes, Charles Colombo. viii + 282 p. Bibliography, p. 276-82. No index. 25 cm. [90 ref. Fre]

• **Summary:** A superb early work, containing extensive original information, looking at developments with soybeans and soyfoods country by country, worldwide. Contents. Preface (p. 1). A. Culture of soy (*soja*; p. 4): 1. Botanical description, selection, classification of the varieties. 2. Culture properly said. 3. Enemies and illnesses.

4. Culture in the various countries: 4a. The Americas (p. 38): Antigua, Argentina, Bermuda, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, USA (gives details on all varieties grown, and describes production, history, varieties, and cultural practices in North Carolina, Illinois, Indiana, Iowa, Maryland, Massachusetts, Mississippi, Missouri, New York, Ohio, West Virginia, Wisconsin, Conclusion), Guadeloupe, Guatemala, British Guiana, Dutch Guiana, British Honduras [Belize], Jamaica, Barbados, Martinique, Mexico, Montserrat, Peru, Puerto Rico, El Salvador, Trinidad and Tobago, Uruguay.

4b. Europe (p. 101): Germany, the Danubian countries, Austria, Spain, France, Great Britain, Hungary, Italy, Netherlands, Poland, Romania, Switzerland, Czechoslovakia, Turkey, USSR.

4c. Asia (p. 128): Ceylon, China and Manchuria, Cyprus, Federated States of Malaysia, British India (incl. Punjab, Bihar and Orissa, Burma, Berar, Madras Presidency, Bombay Presidency, Bengal (incl. Nepal, Bhutan, Sikkim, and the district of Darjeeling), Assam, North-West Frontier Province, United Provinces), Netherlands Indies, Indochina (incl. Tonkin, Annam, Laos, Cambodia, and Cochinchine), Japan, Palestine, Siam.

4d. Africa (p. 146): French West Africa, Algeria, Belgian Congo, Cyrenaica, Egypt, Eritrea, Madagascar, Morocco, Mauritius (Ile Maurice), Reunion (Réunion), Rhodesia, Anglo-Egyptian Sudan, Tripolitania, Tunisia, Union of South Africa.

4e. Oceania (p. 153): Australia, Fiji Islands, Hawaii, New Caledonia, New Zealand, Philippines.

B. Utilization of soya (p. 158): 1. The soybean in human

nutrition and in industry: Whole soybeans, chart of the uses of whole soybeans, use of soya in the green state (green vegetable soybeans), soy sauce (*dau-tuong* of the Annamites, or *toyo*, named shoyu by the Japanese, or *chau-yau* or *chiang yoo* by the Chinese), condiments and sauces based on soya in the Netherlands Indies (*tempe*, *ontjom*, *tempemori* and *tempe kedele* [various types of tempeh and onchom, p. 168-70]), *tao tjo* [Indonesian-style miso], *tao dji* [fermented black soybeans], *ketjap*, *ketiap benteng* [Indonesian-style soy sauce], soymilk (*le lait de soja*), yuba (*crème de lait de soja*), tofu (*le fromage de soja*) and fermented tofu (*des fromages fermentés*, made by Li Yu-ying near Paris), soymilk casein (*caséine du lait de soja*, for industrial use, including vegetable albumin, or galalithe [galalith]) [isolated soy protein], and artificial wool), soy lecithin (*lécithine de soja*), soy flour (*la farine de soja*, incl. soy bread, soy pastries, and soy cocoa).

Note 1. This is the earliest document seen (Sept. 2010) that uses the term *benteng ketiap benteng* to refer to an Indonesian-style soy sauce.

2. Soy oil (p. 194): Food uses, industrial uses (including soaps, products resembling petroleum, paints, varnishes, linoleum, and artificial rubber), extraction, directory of U.S. manufacturers of materials and equipment for soybean processing, directory of U.S. and Canadian manufacturers of food products based on soya (*produits alimentaires à base de soja*, p. 205-06), directory of U.S. manufacturers of industrial soy products (p. 206-07).

3. Soybean in the feeding of domestic animals (p. 207): Forage, hay, silage, pasture, soybean seeds, the minerals in soybeans, soya as a feed for dairy cows, cattle, buffaloes, sheep, hogs, horses and mules, poultry.

4. Use of soya as fertilizer (p. 257). C. The trade of soya and of its by-products (p. 363): Production of soybeans in the principal countries, economic importance of soybean culture in the USA, soybean trade/commerce including tables of the major importers and exporters, and amounts traded annually in 1931-1934, price of soybeans, cost of production.

List by region and country of people and organizations that responded to a questionnaire sent by IIA (p. 273-76). Bibliography of main publications consulted, listed by region and country of publication.

Reunion (*Ile de la Réunion*): "The soybean (Le Soja) is only cultivated as an experimental crop, on a few square meters at the agronomic station" (p. 148).

Fiji (*Iles Fidji*): Soybean cultivation is not yet practiced in this colony; however soybean seeds are currently being imported in order to conduct a trial.

New Caledonia: In 1928 soybean cultivation was introduced to New Caledonia.

Note 2. This is the earliest document seen (Dec. 2007) concerning soybeans in Bhutan, Costa Rica, Dominican Republic, El Salvador, Guatemala, Israel, Jamaica, Madagascar, Morocco, New Caledonia, Palestine, Peru, or

Réunion, or the cultivation of soybeans in Bhutan, Costa Rica, Dominican Republic, El Salvador, Guatemala, Israel, Jamaica, Madagascar, Mexico, the Middle East, Morocco, New Caledonia, Palestine, Peru, or Réunion. It is also the earliest document seen (Dec. 2007) concerning soybeans in connection with (but not yet in) Cyprus; it is stated that soybeans are not grown on the island of Cyprus. Soybean culture is not practiced in the Italian colonies of Eritrea (Erythrée, now part of Ethiopia) or Cyrenaica (Cyrénaïque, now part of Libya).

Note 3. This document contains the earliest date seen for soybeans in Bhutan, New Caledonia, or Réunion, or the cultivation of soybeans in New Caledonia (1928), or Bhutan or Réunion (1936) (One of two documents).

Note 4. This is the earliest French-language document seen (Sept. 2011) that mentions tempeh, which it calls “tempe” (p. 168). It notes that, in general, the indigenous people of the Netherlands Indies use soybeans mainly to make *tempe*, a product which, throughout central and eastern Java, takes the place reserved for *ontjom* in western Java. Tempeh is found in two forms: either in large flat cakes which are cut at the time of sale into small square morsels, or wrapped in folded banana leaves. A detailed description of the preparation of each of these two types of tempeh is given as well as another type of tempe, called *tempemori*, which is made with soybeans and coconut presscake.

Soybean culture is not known to be practiced in the following countries or colonies: Antigua, Barbados, British Honduras (renamed Belize in about 1975), Trinidad and Tobago. Address: Rome, Italy.

159. League of Nations Health Organization–Bandoeng Conference. 1937. Report of the Intergovernmental Conference of Far-Eastern Countries on Rural Hygiene. *International Conference of Far Eastern Countries on Rural Hygiene (Preparatory Papers)* Vol. 3, page 74-76. Held 3-13 Aug. 1937 at Bandoeng, Java. Published 8 Sept. 1937. Official No. C.H. 1235.

• **Summary:** In Chapter 4, titled “Nutrition,” section I discusses “Composition of food and methods of its preparation.” The soya bean and its uses in French Indo-China (today’s Vietnam) are discussed on pages 75-76. “Apart from rice and maize, one of the most important food crops in that Far East is the soya bean (*Glycine hispida*). This bean is rich in proteins and fatty matter, but has a very low carbohydrate content. Eaten in its natural state as a vegetable, or better still, in the form of a variety of appetising preparations in which the casein is partly disintegrated, the soya bean makes good the deficiency of fatty and nitrogenous matter in the native diet, which consists almost entirely of the rice carbohydrates.

“Its chief derivatives are nuoc-dâu, or soya milk; dâu-phu, a fresh soya cheese obtained by precipitating the casein of soya milk; dâu-tuong, or soya sauce, which is often used

instead of nuoc-mam, especially in Tongking; and dâu-phu-chuc, or soya cream [yuba].

“Soya milk is a yellowish-white liquid with a slight smell of burnt bread and a peculiar flavor greatly appreciated by the Annamites. It is prepared by peeling the beans, pounding them in water, straining, and boiling up the resulting liquid.

“Soya cheese [tofu] appears in trade in the form of faintly yellowish-white rectangular cakes, weighing about 150 grammes each. Ten kg. of soya beans will produce 100 liters of milk, which in turn yield 300 cakes, or 45 kg., of cheese. This very cheap product, of which several thousand kilogrammes are sold every day in the Hanoi market alone, is eaten either raw with salad, or stewed with vegetables, or fried in oil.

“Soya sauce, or dâu-tuong, is a preparation obtained by fermenting a mixture of glutinous rice [*Oryzae sativa glutinosa*, called ‘nêp’ by the Annamites] and roasted soya beans. It is a condiment both salty and sweet, which frequently replaces nuoc-mam, a relatively dear food, especially in regions distant from the sea.

“Dâu-tuong is commonly found in commerce in the form of a heterogeneous mixture, consisting of a liquid (nuoc-tuong) in which floats a somewhat coarse paste called tuong-cai, made of incompletely powdered soya beans.

“Dâu-phu-chuc is prepared by drying the skin that forms on the surface of soya milk after prolonged heating. It is sold in shiny, pale yellow, crinkly sheets, and smells like cow’s milk. It is a food rich in proteins and fatty matter, and is consumed by the Annamites in small pieces, either in soup, or in pork, beef, or chicken stew.”

Note: This is the earliest English-language document seen that uses the term “Roasted soya beans” to refer to soynuts. Address: Geneva, Switzerland.

160. Kale, F.S. 1937. Soya bean: Its value in dietetics, cultivation and uses. With 300 recipes. 2nd ed. Baroda State, India: Baroda State Press. xxx + 375 p. Illust. (35 leaves of plates, described in a separate record). Index. 22 cm. 2nd ed. 1937. [66 ref]

• **Summary:** Contents: 1. Deficiencies in the Indian diet and soya bean as a means to rectify them. 2. History of the origin and growth of soya bean: Derivation of the word soya bean, origin of soya bean, literature, primitive man and soya bean, name of the plant, home of soya bean and its expansion, varieties of soya bean, the culture of soya bean is very remote (It “has been the chief article of diet in China for over 7,000 years.”), reference of soya bean in old Chinese records, how and when soya bean became known to Europeans, soya bean in England (from 1890; J.L. North and Henry Ford), soya bean in France (from 1739), soya bean in Italy, soya bean in other countries of Europe, soya bean in United States of America, India and soya bean.

3. The use of soya bean: Importance of soya bean,

dietetic importance, industrial importance, agricultural importance (Russia, Mussolini in Italy), medical importance, soya bean is alkalising in its effect (“Soya bean milk as well as its flour is used in foods for invalids and infants, like Nestle’s food”), longevity and soya bean.

4. World trade in soya bean: Imports to Europe, production of soya bean in Manchuria (58% in North Manchuria), exports from Manchuria, oil and cake industry in Manchuria, soya bean production in Japan, in America, in Africa, in Australia, in Europe, in Java, in India, in other British possessions, estimate of world production of the soya bean, the desirability of the expansion of soya bean cultivation, imports and exports of soybeans, soya bean oil, and soya cake—1913-1927: Denmark, Holland, United States, Great Britain, Japan, France, Russia, China, Germany, Norway, Korea. Source: International Institute of Agriculture, Bureau of Statistics, 1921, p. 420-21. A table (p. 38) shows statistics for world production of soybeans “as estimated by the leading firm of London soya bean dealers” for various years from 1923 to 1929. This includes individual statistics each year for China [incl. Manchuria], Japan, and USA. The world totals in tons are: 3,095,000 (for 1923-25). 3,397,000 (for 1926). 4,325,000 (for 1927). 6,000,000 (for 1928), and 6,570,000 (for 1929; incl. China 5,250,000; Japan 550,000; USA 250,000; Java & Dutch East Indies 120,000; Other Asiatic countries & Africa 400,000).

5. Botany of the soya bean plant. 6. Classification of soya bean. 7. Cultivation of soya bean. 8. Diseases and pests of soya bean. 9. Cultivation of soya bean in India. 10. The constituents of soya bean. 11. Soya bean milk. 12. Soya bean flour. 13. Industrial uses of soya bean. 14. Enriching soil by addition of nitrogen and use of soya bean as fodder. 15. Food requirement of the human body. 16. European and American soya bean recipes. 17. Diabetic dishes, Mahatma Gandhi’s experiments at Magan Wadi and opinion of scientists on soya bean. 18. Chinese and Japanese soya bean dishes: Toffu [tofu] or soya bean curd: Digestibility, utilization, toffu khan, toffu nao, tze toffu (fried bean curd), chien chang toffu (thousand folds), hsiang khan, kori toffu (frozen toffu), preservation of toffu. Natto. Tokio natto and Kyoto natto etc. Hamanan natto [Hamanatto]. Yuba. Misso [miso]. Soya sauce. Soya bean confectionery. Roasted beans (Chinese).

19. Indian soya bean dishes: Hindustani dishes, Moglai dishes, Gujarati dishes, Maharashtrian dishes, Bengali dishes, Goa dishes, Tanjore dishes. Appendixes. 1. Acreage of soya bean in Manchuria during the last 5 years. 2. Total figures of export during last 5 years. 3. Bibliography. 4. Some opinions about the first edition of this book.

The preface begins (p. iii): “This little book is written in response to innumerable inquiries I have had from time to time after the inauguration of the plantation ceremony of Soya Beans at the State Agricultural Experimental Station by H.H. the Maharaja Gaekwar of Baroda in November 1933.

“A few months after this a food exhibition was held in

Baroda where many Soya Bean dishes—Indian, European and Chinese—were exhibited. The leading papers and journals all over the country spoke in very glowing terms about the Soya Bean dishes that were exhibited... Later on at the request of Messrs. Mitsui Bussan Kaisha Ltd., a leading Japanese Firm in Bombay, a Soya Bean Exhibition and Restaurant were run in the Japanese village at the H.O.H. fete. So keen was the interest and enthusiasm evinced by the cosmopolitan public of Bombay that seats in the restaurant had to be reserved in advance. The presence of H.E. the Governor and Lady Brabourne and many Indian princes was an additional evidence of the ever growing popularity of the tasty Soya Bean dishes served there.

“At the closing of the H.O.H. fete many prominent people of Bombay requested me to continue the restaurant at a convenient place in the city, and asked me to open soya-bean milk centres for the children of the poor who could not afford to buy cow’s milk. Many were ready to finance any scheme that I would propose, but unfortunately my time was not my own as I had to attend to my duties in the State and could not take advantage of their generous offer.

“The Departments of Agriculture of the various provinces of India as well as many Indian States asked me to supply them with literature regarding the cultivation and the uses of this most useful bean. The Department of Commerce and Industry of the Government of Bombay inquired if I could furnish them with information about the machinery for the extraction of Soya-bean milk. Letters of inquiries from private individuals kept pouring in daily from all parts of India. All this has induced me to undertake the preparation and the publication of this book...

“From the number of experiments carried on in the Baroda territories and outside it, I feel sure that the Indian soil is most suitable for the cultivation of soya bean...

“The leading thought of the day in India is, ‘Village uplift,’ and ‘Rural reconstruction.’

“Baroda, 7th January 1936, F.S.K. (p. iv)

“Preface to the Second Edition: I feel grateful to the public for having given such a hearty reception to the first edition of my book. It is running into a second edition within a year...

“Now, Soya Bean Bakeries and Restaurants have been started in the city of Bombay and in many other towns in India, and Soya Bean products are exhibited in almost all the exhibitions...

“I feel highly thankful to His Highness the Maharaja of Baroda who gave me an opportunity last year of visiting Russia, where I have seen that seven to ten per cent. of Soya Bean flour was being added to the wheat flour in order to enhance the nutritive value of the bread. The Soya Research Institute at Moscow is making researches into the nutritive, industrial and economical values of Soya Bean. I have seen there the actual working of the Soya-bean milk extracting plant. They make casein out of Soya-bean milk. Soya-bean

cream is sold in the market.

"I visited the dietetic clinics in England, France, Germany, Austria and other European countries, where doctors prescribe Soya Bean bread for diabetic patients. In Russia, rickets and consumption are treated by Soyolk extracted out of Soya Bean..."

"France is growing Soya Bean on clt de jura [sic, Cte d'Azur, on the Mediterranean?]. In England, through the efforts of Mr. J.L. North, Soya Bean is realised as a field crop for the last two years.

"Paris, 3rd April 1937. F.S.K. (p. ix)." Address: Food Survey Officer, Baroda State, India.

161. George, S.E. 1938. New industries: The versatile soya bean. *Nature's Path to Health* (Melbourne, Australia). Oct. 1. p. 17, 38.

• **Summary:** Discusses utilization of soya beans throughout the world to make soya bean oil and meal, industrial products (glycerine, paints, soaps, linoleum, rubber substitute, printing inks, explosives, etc.), bean-milk, bean-curd or tofu, salted bean-curd (resembles Roquefort cheese), coffee substitutes (sold today in America and Europe), soya bean flour, and beef-like extracts for use in soups ("one of the most famous European brands of soup-cubes has a soya-bean base"). "Sacks of [soya] beans make excellent substitutes for sandbags [in wartime], as was proved in the recent Manchurian struggle. Buddhists in China use bean-curd [probably yuba], shaped in molds, to make many products that resemble animal products: fish with sauces, a whole chicken swimming in a golden chicken soup. A number of other products made from soya beans are listed. Discusses the work of the Ford Motor Co. with growing and using soybeans in England and the USA.

A cartoon shows a figure of "The Versatile Soya Bean" smiling and dancing with hands on hips.

Note 1. This is the earliest document seen (April 2003) that mentions a meat alternative which is described as an alternative to fish or seafood.

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term "bean-curds" (with a space in front of the word "bean") to refer to tofu. Address: Australia.

162. Balzli, Hans. 1938. *Kleine Soja-Fibel. Geschichte, Anbau und Verwertung einer einzigartigen Nutzpflanze* [A little soybean primer. History, culture, and utilization of a unique useful plant]. Zurich and Leipzig: Albert Mueller Verlag. 88 p. Index. 16 cm. [26 ref. Ger]

• **Summary:** Contents: Foreword. Economic questions. Botanical. Historical. Chemical composition of the soybean seed. Utilization in East Asia: Koji, miso, shoyu, soymilk, yuba, tofu (*Sojakse*, like Quark), soy oil and press-cake. Utilization in Europe and America: As fertilizer and feed, as food (soy flour, roasted soybeans, soy coffee, green

vegetable soybeans (*den jungen Sojakern... wie junge gruene Erbse*), soy sprouts), and industrial products (incl. "soybean steel," an invention of Henry Ford). Medicinal significance. Cultivation and yield. Epilogue. Bibliography. Author-subject index.

In the chapter on History (p. 24), the author notes: "The poet Johann Heinrich Voss (lived 1751-1826) once said: 'Young Calcuttans... with your sharp soy sauce from Jakarta (*Junge Kalkuten... mit scharfer batavischer Soja*).' Then he adds to that the observation: 'Soy sauce (*Soja*) is a powerful sauce, which is prepared from soybeans (*Sojafasele*), *Dolichos Soja*, which originate in the East Indies and are subject to fermentation, together with brine and spice.'"

Balzli continues on page 25: "The *Deutsche Woerterbuch der Naturgeschichte* (German Dictionary of Natural History) contained in the *Allgemeinen Polyglotten-Lexikon der Naturgeschichte* (General Multilingual Encyclopedia of Natural History) by Philipp Andreas Nemnich (1793) contains the entry: 'Sojablume. *Dolichos soja*.' (Soya flower. *Dolichos soja*)."

"In the world-famous work *Geist der Kochkunst* (Spirit of the Culinary Art), the art historian C.F. von Rumohr (lived 1785-1843) also mentions soya in the second edition (1832, p. 155) and conjectures that the *Garum* sauce of the Romans was an imitation of the East Indian sauce (*Sulze*) made from soybeans (*Soja*)."

Page 29 reports that "During the war of 1870 (*des siebziger Kriegeres*, in which Bismarck of Germany defeated Napoleon III of France) the German head artillery man, O. Wehrman, saw in the botanical garden of Montigny-les-Metz a plant that was unknown to him. It was the soybean. He took 4-5 seeds with him and planted them in early 1872 on his property / estate near Meissen (in Sachsen/Saxony, near Dresden in today's Germany). He harvested 80 to 100 seeds, with which he continued his investigations successfully for some years" [Note: Haberlandt (1878, p. 5) tells this same story].

On page 57 the author uses the term "Sojaspeisen" to refer to soyfoods. Address: Switzerland.

163. Low, Henry. 1938. *Cook at home in Chinese*. New York, NY: Macmillan. [xiii] + 274 p. Foreword by Lin Yutang. 21 cm.

• **Summary:** The names of recipes and ingredients in this cookbook are in Cantonese. The Preface begins with an old Chinese saying:

"To be born in Soo Chow,
"To be clothed in Hangchow,
"To be fed in Kwanchow."

It suggests that the food of Kwanchow [Guangzhou, Kuang-chow, formerly Canton] is well known to be the best in China. "Only within the last few years has the American public realized the deliciousness of Chinese foods, prepared in the original Chinese style." It is not necessary to keep

a large number of Chinese ingredients on hand in order to enjoy these recipes. “If gourmet powder (*mei jing* [MSG]), soy sauce (*see yeou* [fermented black soybean sauce]), black beans (*dow see* [fermented black soybeans]), brown bean sauce (*mien see*), and black sauce (*gee yeou*) are added to the ordinary household supply they will see one through quite well.” “The author has had forty years of cooking experience and is considered an authority on real Chinese food.” Note 1. Most recipes call for 1-2 teaspoons “gourmet powder” (*mei jing* [MSG]). Some recipes call for bean sprouts, but it is not clear from what kind of beans they are sprouted; probably mung bean.

A “Glossary of ingredients” (p. 5-18) lists the major ones called for in this book, with the Chinese name romanized in Cantonese and the Chinese characters for each. Soy-related ingredients are: Beans, black (*dow see*). Cheese, Chinese (*foo yu*) [fermented tofu]. Cheese, red (*nom yu*) [red fermented tofu]. Curds, bean (*dow foo*). Curds, bean, dried (*tiem jook* [sweet yuba]). Sauce, black [black bean sauce; see p. 162. It appears to be a commercial product] (*gee yeou*). Sauce, brown bean (*mien see*). Sauce, soy (*see yeou*).

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the term *tiem jook* to refer to what is probably sweet yuba—called *ama-yuba* in Japanese.

Note 3. This is the earliest English-language document seen (Oct. 2011) that uses the term “nom yu” to refer to fermented tofu.

Soy-related recipes: Bean curd soup (Dow foo tong, with “2 bean curds (dow foo),” p. 27). Bean curd and hairy melon soup (Jeat kuar tong, p. 27). Bean curd and mushroom soup (Dow foo tso koo tong, p. 28). Chinese okra and bean curd soup (Sing kuar dow foo tong, p. 29-30). Snails with black beans (Chow tien lor, p. 67). Sea bass with black beans (Dow see yu, with “4 teaspoons black beans (dow see). 1 piece green ginger, 2 cloves garlic.” “Soak black beans until soft, then add ginger and garlic. Crush until fine.” Later the crushed mixture is added to the other ingredients and all are brought to a boil, p. 74).

Note 4. This use of fermented black beans, with garlic and/or ginger, to make a sauce in the kitchen would, in later recipes, be given a standardized name: “black bean sauce.” But in this book, Low uses the term “black bean sauce” (p. 162) to refer to somewhat a different commercial sauce.

Sea bass and vegetables with black beans (Sy wu yu, p. 75). Fried fish with bean curds (Dow foo yu, p. 76). Steamed fish with bean curds (Dow foo jing yu, p. 76-77). Smelts with brown bean sauce (Jui suut yu, p. 84). Sturgeon with bean curds (Mun leung dun, p. 84-85). Crab meat with bean curds [and soy sauce] (Dow foo hai, p. 90). Shrimps with bean curds (Dow foo gee ha, p. 99).

Boiled chicken with soy sauce (See yeou gai, p. 107-08). Duck with soy sauce (Tung tze op, p. 141). Squab with soy sauce (Tung tse gop, p. 156-57). Beef with bean curds (Dow foo ngow yuk, with “4 bean curds {dow foo}” and “½

teaspoon black bean sauce {gee yeou},” p. 162). Roast pork with bean curds and oyster sauce (Tar sheou ho yow dow foo, p. 172). Pork with bean curds (Dow foo chow gee yuk, p. 172). Pork with lotus root and red cheese (Leen gnou nom yu gee yuk, p. 179-180). Steamed spareribs with black beans (Chow pii yuk, p. 187-88). Scrambled eggs with bean curds (Dow foo chow don, p. 199-200). Spinach with Chinese cheese (Chow bor choy foo yu, p. 209).

The chapter titled “Cheese” (p. 221-23) has only one entry and no recipes: “Chinese cheese (foo yu). The Chinese do not serve their cheese as a separate course at the end of the meal as Americans do, but see it as a main course. It is eaten with hot rice. This cheese (foo yu), strictly speaking, is not a cheese at all because it contains no milk. It is the bean curd (dow foo) aged in Chinese wine. The flavor is marked, and a taste for it is easily acquired by cheese-lovers.”

The author has an entire chapter titled “Chow mein” (p. 243-52). Plain chow mein is almost the same as Chicken chow mein, but with ½ cup less chicken. Fried noodles in called “Jow mein.” Chow mein Cantonese is one of the most popular luncheon dishes among the Chinese. Recipes are given for Beef chow mein, Chicken chow mein, Lobster chow mein, Shrimp chow mein.

Another entire chapter (p. 253-62) is devoted to “Chop suey, including Plain, Chicago, Mixed vegetable, Mushroom, Beef, Pineapple, etc.”; none of these recipes call for rice or noodles.

164. Pynaert, L. 1939. Le Soja au Congo Belge [The soybean in the Belgian Congo]. *Revue Internationale des Produits Coloniaux et du Materiel Colonial* 14(158):61-65. Feb. Summary in *Revue de Botanique Appliquee* (1939) 19:233. [3 ref. Fre]

• **Summary:** Contents: Preface. Soybean yields obtained in the Belgian Congo. The utilization of soya in Europe: Dry seeds (whole dry soybeans), soy sauce, soymilk, yuba, tofu, soymilk casein, soy lecithin, soy flour and chocolate, soy oil. Net cost. In short, Pynaert describes all the basic types of soyfoods and encourages their introduction to the Congo.

Yields: “In 1915 the agronomist Mestdagh made it known that at the end of an experiment well conducted at Lusambo in the district of Sankuru [Belgian Congo], he had harvested 1,472 kg/ha of a light yellow variety of soybean, and 1,786 kg/ha of a black variety.

“The agronomist J.B.H. Lejeune, who worked in the Congo for nearly 20 years, recently furnished information of great interest on the subject of the soybean cultivation which he had undertaken in the colony as well as in Rwanda-Urundi.

“In 1922 he cultivated a yellow soybean which he had obtained from Vilmorin-Andrieux & Co. in Paris under the name of Mammoth Yellow. He obtained yields ranging from 500 to 1,500 kg/ha.

“In 1926 the same agronomist introduced the black

soybean O-Too-Ton [Otootan] cultivated in Georgia. This variety adapted itself remarkably well to the conditions of the Eala milieu and gave soybean yields of 1,000 to 2,000 kg/ha.

"In 1927 trials were recorded at four stations in Rwanda-Burundi, a country of higher altitude with conditions that are very different from those forested central Africa.

"At Lusunyu, which enjoys a temperate climate, the yields of a variety of O-Too-Ton varied from 90-540 kg/ha during a 4 month cycle. At Bugarama, in a much warmer climate, the average yield of seeds was 556 kg/ha. At Kisozi the variety O-Too-Ton gave yields of 100 to 400 kg/ha. A variety named Biloxi furnished a yield of more than 500 kg/ha. At Rubona, still in Rwanda-Urundi, the following seed yields were obtained from 1931 to 1935. Biloxi: 300 to 652 kg/ha. O-Too-Ton: 150 to 1,300 kg/ha. Eala Yellow (Jaune d'Eala): 214 to 261 kg/ha." Also discusses yields at: Kisozi from seeds introduced by Mr. Lejeune; at the Agronomic Station at Yangambi, near Stanleyville, from 1937; at Nioka in Upper Ituri (*Haut-Ituri*; Ituri is a district in the oriental province of the Belgian Congo) where yields are 450-500 kg/ha in poor soil but 700-800 kg/ha in good soil, and even up to 1,000 kg/ha; it is concluded that indigenous crops will probably not give yields of greater than 400-500 kg/ha.

This document contains the earliest date seen for soybeans in Ruanda-Urundi, or the cultivation of soybeans in Ruanda-Urundi (1927) (one of two documents). Address: Directeur du Jardin Colonial de Laeken (Belgium).

165. Yang, E.F.; Dju, M.Y. 1939. Total and phytic acid phosphorus in foods. *Chinese J. of Physiology* 14(4):473-78. Dec. [8 ref. Eng; chi]

• **Summary:** Table 3 (p. 475) shows the phytin phosphorus in legumes, pulses, and legume products. The are columns for the legume product name, moisture, total phosphorus, phytin phosphorus, and phytin phosphorus as a percentage of total phosphorus. Soy products include (with total phosphorus in mg/100 gm and phytin phosphorus in mg/100 gm): Soybean (484, 213), fresh soybean [green vegetable soybean] (835, 298), soybean curd [tofu] (623, 314), soybean curd cake [pressed tofu] (604, 431), fried soybean curd (355, 309), soybean curd sheet [pressed tofu sheets] (618, 318), soybean milk clot [yuba] (750, 342).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "soybean milk clot" to refer to yuba. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai, China.

166. Yang, E.F.; Dju, M.Y. 1939. The total and available iron in vegetable foods. *Chinese J. of Physiology* 14(4):479-87. Dec. [13 ref. Eng; chi]

• **Summary:** Fifty-six kinds of local foodstuffs are analyzed for their total and available iron contents. The name in English and in Chinese characters is given for each.

Soybeans: Moisture 15.7%, total iron 8.5 mg/100 gm, ionizable iron 7.5 mg/100 gm. Percent of total iron ionizable: 88%.

Soybean curd [tofu]: Moisture 85.5%, total iron 6.9 mg/100 gm, ionizable iron 4.5 mg/100 gm. Percent of total iron ionizable: 65%.

Soybean curd cake [doufu-gan; firm tofu]: Moisture 65.5%, total iron 4.3 mg/100 gm, ionizable iron 2.85 mg/100 gm. Percent of total iron ionizable: 66%.

Soybean curd, fried [yu-doufu; fried tofu]: Moisture 55.5%, total iron 6.3 mg/100 gm, ionizable iron 4.6 mg/100 gm. Percent of total iron ionizable: 73%.

Soybean curd sheet [pai-yeh; pressed tofu sheets]: Moisture 45.2%, total iron 6.8 mg/100 gm, ionizable iron 3.6 mg/100 gm. Percent of total iron ionizable: 53%.

Soybean milk clot [yuba]: Moisture 4.9%, total iron 6.3 mg/100 gm, ionizable iron 2.5 mg/100 gm. Percent of total iron ionizable: 40%.

Soybean, sprouted [soy sprouts]: Moisture 83.3%, total iron 8.3 mg/100 gm, ionizable iron 3.7 mg/100 gm. Percent of total iron ionizable: 45%.

Also discusses (p. 483): Cowpea pod, green. Flat bean, pod. Horse bean, dried. Horse bean, sprouted. Mung bean sprout. Mung bean starch sheet. Mung bean starch strip. Peanut. Address: Div. of Physiological Sciences, Henry Lester Inst. of Medical Research, Shanghai.

167. Matagrín, Am. 1939. Le soja et les industries du soja: Produits alimentaires, huile de soja, lécithine végétale, caséine végétale [Soya and soya industries: Food products, soy oil, vegetable lecithin, and vegetable casein (Continued—Document part III)]. Paris: Gauthier-Villars. x + 390 p. 18 cm. [300 ref. Fre]

• **Summary:** Continued. Japan: The great oil mills of Kobe. In Japan, for cooking, sesame oil is preferred and for illumination rapeseed oil.

French Indochina: From 1931. It is estimated Tonkin cultivated about 12,000 ha of soybeans and harvested an average of 7,500 metric tons per year. The low yield of only 625 kg/ha, compared with a world average of 1,000, is explained by the fact that soybeans are generally cultivated with corn in a 1:1 mixture. Some soybeans are exported to Hong Kong. Since 1933 Paul Braemer, chief of agricultural services in Hong Kong, is exerting himself to propagate more this nutritious plant. Up till now the strong flavor of the soy protein deters colonials from using soy for food and soymilk. Made experimentally at the Maurice Museum, these have not attained but a relative success in the European colony. However the natives use many products. The village of Cu-da / Cuda 10 km from Hadong [in today's Vietnam] specializes in a type of soy sauce which cannot be made except from April to July, and which must be kept in sealed containers.

English and Dutch Indies: Today Prof. D. Kanga of

Gujerat College of Ahmedabad, recommends warmly this economical and fortifying food. Soy is now used increasingly in industrial dining rooms and universities (he lists names). It is likely that India will acclimatize varieties rich in oil, develop extraction mills in its centers of industry, and deliver a large tonnage to the English soap makers.

Soybeans, propagated by the Russians, have long been grown on the plains of Turkestan [today's Afghanistan] and tests have been done in Persia [today's Iran] and the Soviet and Chinese republics of Central Asia northeast of there.

Soy in Africa: The French tried growing soybeans successfully in Dahomey and Togo. In North Africa trials have been taken more seriously since 1918 in Algeria, then in Tunisia and Morocco. In Tunisia, the tests which began in the late 19th century, are now growing. In Morocco lots of other beans are grown.

Australia is finally cultivating soybeans since the start of the century in the southeast, and today on all the east coast (Queensland, New South Wales and Victoria).

Soybean etymology: Low Countries = Sojaboon. Russia = Soia. Italy = Soia or (better) soja.

At the start of this century, when the German industry launched "Nitragine," a liquid culture of nitrogen fixing bacteria, there was much interest. The American practice, founded on the research of Norman Shaw (1910) and on the experience at the agricultural experiment stations at Michigan (1905), Wisconsin (1907, 1922). etc. consists of inoculating new soil with soil from former soybean fields.

Matagrín has a lengthy and excellent review of soybean agronomy. Also one of the best bibliographies; the most extensive of any European book to date on all aspects of soybeans and soyfoods.

The USA and the USSR were the first two countries to mechanize soybean planting and harvesting.

On the diseases and enemies of the soybean (p. 108): Earliest citation is 1919 from J. of Agricultural Research, and from the Nebraska Agricultural Experiment Station. Third is Wolf and Lehman 1920.

Most of the early studies on soybean diseases and enemies are analyzed in Morse (1927) "Soy Beans: Culture and Varieties." In the same publication is found a summary of U.S. work on insect enemies of soybeans established by H.R. Walton, Bureau of Entomology, Washington, DC.

The early research on the chemical composition of the soybean plant was to determine its value as forage. The key work in France was done by Lechartier and Joulie. The latter also studied the composition of the soybeans from Etampes, as did Giljaranski. and H.L. North.

The structure of the soybean cells was studied in France by Colin and Blondel (1888).

Matagrín has a strong historical dimension running through every chapter.

The median oil content from Asian soybeans is not more than 17%, while that of American soybeans attains 19%.

In about 1920, West and Levene developed the chemical formula and structure for animal lecithin.

The importance of soybeans as a protein source was not pointed out by researchers for 69 years, i.e., until the 1880s, and was not considered from an economic point of view until the World War I put into relief the problems of feeding populations and armies. Then interest and patents multiplied. For example, in 1910 the processes of S. Satow of Sendai, Japan for the precipitation of soymilk by a ferment or by sulfuric acid.

Most legumes contain only 1.6 to 2.9% oil, with the exception of peanuts which contain 45%. Soy contains 20%.

Concerning soy lecithin, From 1870 to 1910 W. Koch (1902), Fraenkel, (p. 152) not only verified the initial conclusions of Thudichum about this agent of nutritional assimilation. Koch showed in 1902 that this phosphatide was important.

At the start of the 20th century, soy pap was prescribed with success for diabetics in the hospitals of Algeria, as in Japan and Austria.

Page 158: Number of calories costing 15 centimes in 1938. Li Yu-ying had a similar chart but he omitted potatoes.

Potatoes: 80 grams give 224 calories

Soybeans: 40 grams give 188 calories

Rice: 50 grams give 180 calories

Bread: 45 grams give 145

Followed by 16 other foods.

Etymology: Matagrín (p. 160-61) says "fève de soja" and "soja à l'état vert" (for green vegetable soybeans).

Miss Ellen Kingsley (p. 161) of the U.S. Bureau of Home Economics published many recipes using whole dry soybeans.

Durand (no citation) discussed cooking whole soybeans in water with sodium bicarbonate. This well-known process for all legumes leaves an unpleasant taste. So he recommended pressure cooking. Then he gives recipes for whole dry soybeans.

At whole dry soybeans, there is considerable discussion of their use in vegetarian diets. Was Matagrín a vegetarian?

Etymology: Matagrín (p. 166) says "la farine des fèves grillées" for roasted soy flour.

At the Iowa College of Agriculture, Nelson made a soynut butter as follows: Deep-fry soybeans in oil at 100-110°C for about 5 minutes. Grind the soybeans finely. Then grill at 160°F for about 20 minutes. Finally mixing these with some of the deep-frying oil.

Soy coffee is cafe without caffeine. Matagrín uses lots of information from Li Yu-ying; likewise information from Li appeared in countless later articles. Li was one of the two original sources; Paillieux was the second.

Is soymilk presently consumed more widely than animal milks in China? Not in Japan.

Carles (note spelling) was not a Frenchman who did work on soymilk.

Soymilk (p. 172): According to an article by Prof. R. Lepine of Lyon (1919), concerning a communication of Mlle. Castet of the Society of Horticulture of Alger (Algiers).

Rouest was director *du Laboratoire du Soja* in Russia's North Caucasus.

Castagnol (soymilk) in Bulletin of Indochina, uses a centrifuge.

Soymilk patents from France. G.D. Thevenot (1920-25), A. Serault (1931), M. Adler (1933).

Arao Itano (1918). Made soymilk from soy flour with *Bacillus inoculum*. So it was fermented soymilk developed by a Japanese.

Etymology: *Fèves de soja entières* = whole soybeans.

Li Yu-ying used cold extraction of soymilk, Chinese style.

Matagrín has an excellent review of all the various ways of making soymilk.

Muggia and Gasca (1921) made soymilk with a bland flavor in Italy.

1933 process for making soymilk in Russia by Bogatskij, Storozhuk and Morumtzev.

In raising animals, soymilk renders a great service. It is very widely used now in USA and in Asia. but its use is limited by that fact that it is more economical to feed the animals the bean itself or the cake.

Adding lecithin to soymilk gives it a light flavor of butter.

Etymology: Matagrín unfortunately calls yuba *Crème de lait de soja* (Phu-chuc of Indochina) [dried yuba sticks]. According to an analysis by a pharmacist, Monnier, of the Pasteur Institute of Hanoi, it contains 64.62% oils, 8.98% Nitrogen. It is often prepared with fish bladders or minced meat.

Just. Hatmaker (p. 190) made powdered soymilk, as did three other processes, including a spray process of Bevenot and Neveu. This process was also widely used in English soap factories. Matagrín gives 3 analyses of powdered soymilk, the earliest from Li Yu-ying.

Pages 192-93: Discusses soy yogurt (*Yoghourt au lait de soja*), soy kefir (*Kéfir au lait de soja*), and soy koumiss / koumiss (*koumys*).

Matagrín gives detailed descriptions of many methods of making tofu and 9 pages of information (p. 194-202)

Bloch said the best coagulant is magnesium chloride. Beltzer preferred acids to calcium salts.

Ellen J. Kingsley (1935) of the USDA gives a method for making tofu.

Drs. Labbé (Labbe) and Marchoisne have shown that vegetable albumines, despite current opinion, are very assimilable.

Matagrín gives a number of nice tofu recipes including French-style tofu in Petits-fours (fancy biscuits; p. 201) and Tofu meringue. Address: France.

168. Giraud-Gilliet, J. 1942. *Le soja, aliment d'avenir: manière de le cultiver; 2 à 300 façons de le consommer* [Soya, food of the future: How to cultivate it; 200-300 ways to consume it]. Saigon: Imprimerie de C. Ardin. 285 p. Index. [Fre]

• **Summary:** Contents: Dedication. Introduction. Part I: Summary study of soya (the soybean): Its cultivation. 1. The nature of soya: Its area of expansion. 2. Cultivation of soya: Soil, manure & fertilizer, seeds. 3. Interest in soya: Its richness in nutritive elements and comparison with other foods. Various possibilities for utilization: therapeutic uses for hygiene and diseases (vegetarian diet, diabetes, beriberi, diseases of the nervous system, anemia, slimming, milk diet), agricultural uses for fixation of nitrogen in the soil and as a fertilizer, use in the feeding of animals (green forage, dry forage, soybean cake, flour, seeds, germinated seeds, straw and pods, soymilk, milk), industrial utilization (soybean oil and its derivatives, glycerine, soy casein), use as human food (whole dry soybeans, soy sprouts, soybeans mashed or ground after they are cooked, soybeans cracked or crushed before they are cooked, fermented soybeans, soymilk, soymilk derivatives / foods made from soymilk {tofu / *dâu-phu*, yuba / *tao hu ky*, dry yuba rolls / *phu chuc*, beverages}, edible oil), utilization for social work (drops of milk, bowls of soya, inexpensive restaurants, battle against malnutrition and degeneration, for school gardens, pagodas, waste lands).

Part II: The main soyfood products and how to prepare them at home. 1. Soymilk, soymilk curds (*tau hu hoa*), small white cheeses (*petits fromages blancs* {*dâu-hu miêng*}), folded sheets of yellow yuba (*feuille jaune plissée de crème de soja* {*dâu-hu ky vang*}), white sheets of yuba (*feuille blanche unie* {*dâu-hu ky trang*}), dried or smoked yuba (*plquettes séchées ou fumées* {*dâu-hu ky ngot*}), fermented tofu-like cream cheese (*fromages fermentées: cancoillotte comtoise au soja*). 2. Soy flour: Roasted soy flour, soy bread, sojenta (soy polenta), pasta (soy vermicelli and vermicelli of mung beans {*dâu xanh*} or *song than*). 3. Soy condiments. Solid condiments: natto and douchi (*taotché*), condiments that are pastes: miso and doujiang (*tao tjiung*) and koji [sic, not a paste but used to make miso, doujiang, shoyu, and jiang-you], liquid condiments: shoyu, jiang-you (*tsiang yeou*), (*tao yu*), ketjap (Indonesian soy sauce), Vietnamese soy sauce (*tuong*).

Part III: Recipes. 1. Introduction: Essential recommendations, the cookery of the poor, comparative cuisine, general recipes. 2. Soups and paps. 3. Hors d'oeuvres and salads. 4. Vegetables. 5. Meat, fish and egg dishes. 6. Breakfasts, sweets, and desserts.

Conclusion. Appendix. Errata. Address: Administrateur des S.C. de l'Indochine; Vietnam.

169. Takenobu, Yoshitaro. ed. 1942. *Kenkyusha's new Japanese-English dictionary*. Cambridge, Massachusetts: Harvard University Press. iv + 2280 p. 24 cm. American

edition. Reproduced by a photolithographic process from the 82nd printing of 1939.” Title also in Japanese: *Shin Wa-Ei Daijiten*. [Eng; jap]

• **Summary:** “The present war has necessitated the publication in the United States of a new edition of Kenkyusha’s Japanese-English Dictionary because this country is cut off from the former source of supply of the dictionary and because the demand and need for all Japanese dictionaries has greatly increased. To meet this need, the Department of Far Eastern Languages of Harvard University has undertaken the project of publishing in the United States this dictionary as well as other essential Chinese and Japanese dictionaries, and the Rockefeller Foundation has supplied the necessary funds for the enterprise.

“This American edition of the dictionary has been reproduced by a photolithographic process from the eighty-second printing of 1939. No changes have been made in this edition except to increase slightly the size of the print and the book.”

The very first page, titled *Kaisetsu* (“explanation”), shows the Japanese syllabary and the romanization of each.

Near the end are two appendixes: (1) Pages 2264-74: *Saishin-go oyobi gairai-go ichiran* [List of most recent words and foreign words]. (2) Pages 2275-80: *Chugai hikaku nenpyo* [List of Japanese emperors and era names, with Japanese years and Western calendar years—starting with the first legendary emperor Jimmu (660-585 BC)].

The content of this pirated American edition is basically the same as that of Kenkyusha’s 1931 second edition of this dictionary. Address: General editor, Japan.

170. Bazore, Katherine. 1943. Hawaiian and Pacific foods, a cook book of culinary customs and recipes adapted for the American hostess. New York, NY: M. Barrows. 286 p. Illust. *

• **Summary:** Yuba is called “bean curd skin.” Mentions “red bean curd sauce” [nam yue?]. Katherine Bazore was born in 1895.

171. De Gouy, Louis Pullig. 1944. The bread tray. New York, NY: Greenberg. vii + 463 p. Foreword by Dorothy Thompson. 21 cm.

• **Summary:** This is a book about bread. The 1st chapter is “A short history of breads.” The chapter titled “Soy flour breads and biscuits” (p. 401-24) includes the following (p. 404-05): In New York’s Chinatown, stroll inquisitively along Mott, Pell, and Doyer Streets, and you will see how important the soy bean is in everyday Chinese life. “Fresh bean sprouts—some from soy and some from other beans—stand in large hampers in the shops; on the shelves around them are jugs and bottle of soy sauce, for the kitchen or the table.”

In Chinese shops corresponding vaguely to our delicatessen stores you will see *Teou-fu*, or *tofu*, made fresh

daily, in cream-white cakes like Philadelphia cream cheese, kept cool and moist in pans of water. It is made from soy bean milk much as cheese is made from cow’s milk or goat’s milk, and it was a staple commodity in Chinese cities more than two thousand years ago. The Chinese prepare it for breakfast, dinner or supper in many ways, and a favorite form is ready for you in the shops—*Tsa tofu*, the little cheeses fried in deep fat [deep-fried tofu puffs], that look like well-browned and rather robust doughnuts without holes. You can get them hot from the kettle and eat them with syrup or without; a Chinese laborer finds them sustaining and satisfying as a noon-hour meal.”

Note: This is the earliest English-language document seen (May 2012) that contains the term *Tsa tofu*, a type of deep-fried tofu.

“*Tofu nao* is of custard consistency and is eaten in soups and as a custard; *Chien chang*, or thousand-fold *tofu*, is made in thin layers rolled together and cut up like noodles for soup or fried in sesame oil. A brown, dry *tofu*, *Hsiang khan* [pressed tofu] is colored and flavored with caramelized millet sugar and eaten with soups and salads. There are many forms of preserved *tofu cheese*: smoked, salted, spiced and packed in wine and brandy to be used in cooking or as a delicacy like cheeses of the Western World. *Yuba*, as old as soy beans from which it is made, is the dried creamy film from boiling soy milk, sold in flakes or sheets, or rolled into “bean sticks” [dried yuba sticks], and it has been one of the most popular commodities in China and Japan for centuries.”

Note: This is the earliest English-language document seen (Oct. 2011) that uses the term “preserved tofu” or the term “tofu cheese” or the term “preserved tofu cheese” to refer to Chinese-style fermented tofu. Address: Chef Steward, Consulting food editor of *Hotel Management* and *Restaurant Management* magazines, food columnist of *Gourmet* magazine and author of various cook books.

172. Chao, Buwei Yang. 1945. How to cook and eat in Chinese. New York, NY: The John Day Co. xviii + 262 p. Foreword by Hu Shih. Preface by Pearl S. Buck. Illust. Index (of both recipe numbers and page numbers). 21 cm. An Asia Press Book. New editions, 1949 and 1963.

• **Summary:** A superb, funny, authentic Chinese cookbook. The “Author’s note” begins: “I am ashamed to have written this book. First, because I am a doctor and ought to be practicing instead of cooking. Secondly, because I didn’t write the book... You know I speak little English and write less.”

The section on “Conventions and hints” states: Clear-simmering is slow cooking without soy sauce. Red-cooking is slow-cooking with soy sauce (p. xvi).

In Chapter 2 titled “Eating materials,” the section on “Grains” (p. 21-22) notes: There are two important supplementary starchy foods in the Chinese diet: Sweet potatoes (the poor man’s luxury) and “beans: red beans

[probably azuki], horse beans, and above all soy beans and their products. Bean milk and bean curd [tofu] are regarded in this country [America] as specialties. But in China, cabbage and bean curd mean a poor family's home cooking. Soy beans not only give starch, but are also the most important source of protein, since most people cannot afford much animal food."

In Chapter 3, "Cooking materials": "The commonest vegetable oils in China are [soy] bean oil and peanut oil" (p. 24). Soy sauce is a "salter," which is not freely exchangeable with salt. It is never used in the white kind of cooking but it is used (sometimes with salt) in red-cooking and red-stir-frying (p. 25).

"Flavorers.—The most important flavorer of Chinese food is soy-bean sauce or soy sauce for short. With soy sauce you can cook an untiring series of Chinese dishes with nothing but those foods you can get at any American chain market. In fact even pretty good soy sauce can now be bought at such chain markets. Chinese dishes are called red-cooked or white-cooked according as soy sauce is or is not used. But even in the white-cooked dishes, especially the slow-cooking ones, the morsels, or rather the chopstickles [chopsticks], of food are often dipped in soy sauce before eating. One thing we never do, however, is to pour soy sauce on rice. When Americans do that, it looks funny. It must taste funny too.

"Soy sauce is made from fermented boiled soy beans in which salt is added. Several kinds are now seen in this country. The least useful is called in Cantonese *chü-yau*, "pearl sauce," a dark thick sauce without too strong a taste, which lends much color to the dish and is much used in restaurants. Next is *shang-ch'au* "raw extract," which is light brown, tastes very fine, but is not colorful enough for red-cooking and not available in any great quantity. The sauce most suitable for general purposes is called *ch'au-yau*, "extracted sauce," which fortunately is made by several manufacturers in this country and Canada. All varieties of soy sauce are also called by the general name *shi-yau* in Cantonese.

"Similar to soy sauce is a soy jam [chiang], which is much thicker in consistency. In China, fermented flour jam is even more common. Good samples of such jams are scarce in this country.

"There is a whole class of whitish savory powder made mostly from gluten of flour. We shall call it **taste powder** in the recipes. The oldest form of this is made from the dried fermented muscle-of-flour (flour gluten), often made in old Chinese households. Almost thirty years ago the Japanese manufactured, from hydrolized gluten, a powder called *ajinomoto*, 'prime element of taste.' Later a Chinese firm manufactured *ve-tsin* [*vetsin*], "essence of taste, which is still found on some shelves of Chinatown. 'Pickup' and *mee boan* taste powders are made in this country and sold mostly in Chinatown.

"You will note that relatively few recipes in this book call for the use of taste powder." "Other common flavorers are oyster sauce, sesame oil, and soy bean cheese (*fu-yü*) (p. 27-28).

Chapter 6, "Methods of cooking," includes a discussion of red-cooking (stewing with soy sauce, which gives a reddish color. "Red-cooking is the typical family cooking." Cooking time varies from 2-6 hours) and clear simmering (without soy sauce).

Soy-related recipes include: Bean curd stirs meat slices (p. 61). Bean curd stirs shelled shrimps (p. 118). Meat sauce meets lobsters ("Variation: As done in Chinese restaurants in America—Get from Chinatown 2 tb-sp salted small black beans [fermented black soybeans]. Wash off visible salt, boil 10 minutes, crush, and add to the stirring sauce," p. 125). Arhat's fast or Vegetarian's ten varieties (with wheat gluten, bean curd skin [yuba], fried puffy bean curd, soy sauce, etc., p. 156-57).

Note 5. This is the earliest English-language document seen (May 2012) that contains the term "fried puffy bean curd." It refers to a type of Chinese deep-fried tofu. "Get in Chinatown. The best is to get them ready fried,..."

Plain stirred bean curd (p. 158-59). Oyster sauce bean curd. Mushrooms stir bean curd. Scallions stir bean curd (p. 159-60). Pot-stuck bean curd (p. 160). Bean curd and meat-slice soup (p. 164). Huichou pot (with fried bean curd [large triangles or small cubes], p. 181-82). Sandy-pot bean curd (p. 183). Soy jam noodles (p. 201-02, with ½ can *yünshi* soy jam {get in Chinatown}); this is typical northern food).

Page 158 states: "Bean curd is made of soy beans. It has only a faint flavor of its own. That is why it can be easily combined with other materials. Bean curd has the same nourishment value as bean, but in a much more digestible and palatable state and forms an important ingredient of the food for the poor people in China. It is cheap and easy to prepare. Those who can afford fancy dishes often combine it with meat, fish, and other sea foods. But just plain (Chinese) cabbage and bean curd connotes home sweet home. Bean curd is a versatile cooking thing. It can be boiled plain, with a little of any flavoring. It can be fried in deep oil by whole pieces so that the outer surface will become browned. We often stuff seasoned ground meat inside it like stuffed cucumber and then red-cook the whole thing. Bean curd can even be eaten as part of an American salad." The Chinese characters for all recipe names are given on pages 232-46. Address: Cambridge, Massachusetts.

173. McWethy, John A. 1946. Soybean success: War boom continues as many plants expand, bring out new products. Examples: Meat flavor, wool-like fibre, bottle cap adhesive, soymilk cheese. St. Louis meeting draws 400. *Wall Street Journal*. Aug. 31. p. 1.

• **Summary:** This article is about the 3-day meeting of the American Soybean Association in St. Louis, Missouri. The

soybean industry thrived during the depression, more than doubled in size during World War II, and is now continuing to grow. The A.E. Staley Manufacturing Co., America's largest soybean processor, has just started construction of a new \$1 million plant that will turn soybeans into monosodium glutamate (MSG), making one million pounds a year. MSG has been previously made on a small scale in the USA from wheat, but Staley's plant will be the first to make it on a large scale from soybeans.

The Drackett Co. in Cincinnati is putting the finishing touches on a commercial plant that will make a wool-like fibre from soybeans. Robert A. Boyer, the firm's research director, said the new fibre will be used mostly for blending with rayon. He thinks it may sell for less than wool.

ADM, one of America's four largest soybean processors, earlier this year completed a plant to make a "whipping agent" from the versatile soybean; it can replace egg albumin, which is much more expensive.

Dr. Harry W. Miller, president of the International Nutrition Laboratory (Mt. Vernon, Ohio), "started making soybean products in Shanghai, China, in 1935. Bombed out in 1937 by the Nips [Nipponese = Japanese], he came to this country and began making similar products here in 1939. Now his firm does a \$500,000 a year business and could do a lot more if sugar and other ingredients used with soybeans were available." His most popular items are [soy] milk, cutlets, and canned green soybeans. He says the milk tastes "rather like malted milk and is especially good for infants and others allergic to animal milk. His company has also developed a cheese made from soymilk, a prepared mix for ice cream from the soymilk, and "albumen sheets" [yuba], which are very popular in China.

These sheets aren't much thicker than a piece of paper and are used in China to make the layers of a loaf filled with mushrooms. The Chinese also use soybeans [yuba] to make products that taste like both fish and chicken. In American kitchens, an excellent substitute for butter can be made "by combining soya oil, soya milk," carotene oil for color, and salt.

One big American breakfast cereal maker is said to be planning to introduce a "soya flake cereal soon, similar in appearance to cornflakes. Another may soon market a puffed soyabean cereal, a third may introduce a cooked cereal made from soybeans, oats and wheat."

General Mills is building a factory for producing a synthetic resin from soybeans—a product developed at the Northern Regional Research Laboratory in Peoria, Illinois. Dr. G.E. Hilbert, NRRL's director, says this new resin shows "considerable promise as a protective coating and as a heat-sealing and moisture-proofing agent.

During the past few years, soybean processors have been switching to the solvent extraction systems, from the expeller system, for obtaining oil from soybeans. Most newer plants use hexane solvent. The advantage of the solvent system is

that it removes all but about half of one percent of the oil, compared with 3½% to 5% left in the meal when expellers are used. The meal currently sells for 3 cents/lb compared with 11.75 cents/lb for the oil.

NRRL has recently developed a process that uses alcohol instead of hexane. This yields superior "soyflour." Before the war, production of soyflour was 25 million lb/year; this year it is expected to top 400 million lb. Roth Products Corp. of Chicago has already used 6 million pounds of soyflour this year in its dehydrated soups, baked goods, pancake flour mixes, and sausage filler.

The soybean industry (especially the NRRL) is also working to make soybean oil more stable. It "has a tendency to develop a grassy or painty flavor on standing." A process obtained from Germany "goes a long way toward preventing the development of these objectionable flavors."

The Lincoln soybean variety, developed at the U.S. [Regional] Soybean Laboratory at Urbana, Illinois, and first made available to farmers during the war, is playing a major role in increasing yields. Today farmers in the corn belt are getting 25-30 bushels/acre with Lincoln, compared with only 15-16 bushels/acre in the early 1920s with varieties then available. Moreover, today's soybeans contain 20-21% oil compared with only 15-17% about 20-25 years ago.

174. Miller, Harry W. 1946. Feeding the world with soya (Continued—Document part II). *Soybean Digest*. Sept. p. 56, 58, 61.

• **Summary:** Continued. "The green edible soybean offers an additional line for canneries and freezing plants packing peas, lima beans, corn and other vegetables. It also offers another tasty item to the cook to adorn the dinner plate.

"Green soybeans can be canned with exactly the same equipment that all canneries have and can be shelled with the same sheller that is used for peas. The canning season is not in conflict with that of any other product unless it be sweet corn. The varieties can be planted so that they will not seriously interfere with this product. There is nothing we can put into the cans exported to other countries and for the areas of large population of our own country that will give people greater returns nutritionally than the immature green soybean. It has a nutty flavor and does not in any way harbor the beany taste that lingers in the minds of some people who think of soy foods.

"Canned sprouts: Canneries could develop a very fine winter industry by canning soybean sprouts. Or the frozen food people could very well add a package of frozen soy sprouts to their lines. These could very nicely come into our markets as a fresh vegetable along with Brussels sprouts, lettuce and other raw foods, to be incorporated into salads and cooked dishes. The sprouting of the soybean again removes the characteristic taste and gives a nice vitamin-yielding food, along with its rich content of minerals. Any good field variety may be used for sprouting.

“There is much to be learned from the Orient regarding usages of soybeans in the diet, in the many forms in which they prepare them. They first make a water extraction of the protein, curdle it and make cheese [tofu]. With this bean they can make foods simulating milk, fish, fowl and meat in appearance and taste.

“Already, in this land hundreds of infants have been started from birth using modified soy milk. A very large group of others who are allergic to animal milk are substituting soy milk for the dairy milk. It is being made into varieties of delicious cheeses, and has possibilities in the cheese industry the equivalent of cow’s milk curd. The lactic acid soy milk is the most pleasing beverage. The acidity of the milk covers wholly any semblance of the characteristic beany flavor.

“Albumen sheets: We now have albumen powder made from the soy extraction flakes utilized like egg powder by the big candy industry in ever increasing amounts. The soy albumen sheets [yuba], because of their labor and painstaking requirements, have not been made in this country as they are in China. However, we are finding ways of providing for their manufacture.

“A halt has been made on the production in Michigan of a competitive margarine called soy butter. Still, there is available to every housewife a method of making a butter with far less work than churning cow butter. Such a butter is made from soy oil and soy milk which is colored with carotene oil and salted to taste.

“Dry mature soybeans can be readily transported to any part of the world without requiring refrigerator space. They are a form of concentrated nutrition the world can easily be taught to use. Seventeen dollars worth of soybeans at 5 cents per pound will supply enough protein for a family of five for an entire year.

“In a paper such as this it would seem to be in place to give a few concrete suggestions on what might be done to help solve the world food shortage.

“1. Encourage more soybean production in America. This could be done if soybeans were given their proper economic value.

“2. Forward seed to various countries in the world, encouraging its production through helpful instructions in growing, processing and using. There are very limited areas where soybeans have proven entirely unsuccessful when given a fair trial.

“3. We should devote more time on experimental work in cooking and preparing the food and overcoming any objectionable features that seem to prevent its widespread use. The feeble efforts that have thus far been put forth have really done wonders in furthering the adoption of the soybean in the diet.

“In closing, allow me to say that with the present world yield of soybeans, if used exclusively to relieve human starvation, relief could come to all the destitute areas of the

world.” Address: M.D.

175. Liang Shih-chiu [Shiqiu]. ed. 1947? *Zui xin shi yong Han Yin ci dan* A new practical Chinese-English dictionary. The Far East Book Co. Ltd. 1355 p. See p. 1037-38. 22 cm. [Eng; Chi]

• **Summary:** Gives the Chinese characters and their pronunciation for the following soy-related terms: Soybean cake; bean curd; a semi-transparent film formed on the surface of soybean milk; a store where bean curd is made for sale; spiced and dried bean curd; soybean cheese; legume; (said of girls) in teens; the pods of beans or peas; soybean milk; fermented beans in paste form; residue of soybeans in making bean curd; fermented and seasoned soybeans; pisolite [bean + stone]; legumin; bean sprouts as a vegetable; soybean oil. Address: Editor in Chief.

176. Harris, Robert S.; Wang, F.K.C.; Wu, Y.H.; Tsao, C-H. S.; Loe, L.Y.S. 1949. The composition of Chinese foods. *J. of the American Dietetic Association* 25(1):28-38. Jan. [12 ref]

• **Summary:** Pages 32-33 give a description of (including the place purchased and processing method) and page 35 gives the nutritional composition of the following products: Soybean cheese = Ch’ou tou fu lu. Soybean curd = Tou fu (coagulated with lime). Soybean curd, fermented = Tou fu lu. Soybean curd sheet = Ts’ian chang tou fu. Soybean curd, smoked = Tou fu kan. Soybean, fermented = Tou chi [fermented black soybeans]. Soybean, milk clot (oil skin) [yuba] = Yu pi. Soybean sprouts = Huang tou ya. Soybean, yellow (dried) = Ta tou. Soybean, yellow (fresh) = Mao tou.

A glossary on page 38 gives the Chinese name (in both Chinese characters, and in Wade-Giles romanization) for the soyfoods mentioned above.

“Soybean cheese, *Ch’ou tou fu lu*. Purchased in a shop in Sha Ping Pa. This curd is made by putrefying soybean curd, then sealing it in a preserve jar with wine and spices. After one month it can be eaten with sesame seed oil without cooking. The curd has a very strong odor and flavor and it is used as a appetizer by the wealthy and as a main dish by the poor in many provinces.”

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the term “tou fu lu” or the term “Ch’ou tofu fu lu” to refer to fermented tofu. Use of the character for “Ch’ou” may well indicate “stinky tofu.”

Note 2. This is the earliest English-language document seen (Feb. 2004) that uses the term “Tou fu kan” [pinyin: doufugan] to refer to smoked tofu. Address: Nutritional Biochemistry Laboratories, MIT, Massachusetts.

177. Smith, Allan K. 1949. Oriental use of soybeans as food: Notes on Oriental farming practices. II. China. *Soybean Digest*. March. p. 26-28, 30, 32, 34.

• **Summary:** Contents: Soy sauce in China. Sweet flour

paste–Tien Mien Chang [Chiang]. Soy or vegetable milk (incl. Willis Miller, yuba). Soybean curd or tofu (incl. use in Buddhist restaurants to look like meat, poultry, or fish dishes).

Soybean cheese [fermented tofu]. Fen-t'iao from mung beans (vermicelli). Fermented soybeans [fermented black soybeans] (made from small black soybeans). Vinegar fermentation process. Address: Northern Regional Research Lab., Peoria, Illinois.

178. Bureau of Entomology & Plant Quarantine, Bureau of Animal Industry–U.S. Food & Drug Administration. 1949. Food and Drug–Agriculture. List of Imports Detained by the Federal Food and Drug Administration. July 22 to Aug. 19, 1949. *American Import & Export Bulletin* 31(3):684-89. Sept.

• **Summary:** This is a long (6-page) table with 3 columns: (1) Product and port of entry. (2) Quantity. (3) Reason for detention. Note that the country of origin is not given.

Page 684: Port of Chicago. “Thin Soy [Sauce]–2 cases–Labeling inadequate.” “Chinese Foods (Canned Fish and Thin Soy)–35 cases–Labeling incomplete, decomposed.”

Page 684: Port of San Francisco–continued.

Page 686: Port of New York–continued “Tuna (solid pack in soybean oil)–600 cartons–Decomposed; no English label; not “Tuna” but “Bonita.”

Page 687: Port of San Francisco. “Bean Sauce–480 lbs–Filthy.” “Bean Curd–320 lbs–Filthy.” “Cnd. [Canned] Bean Sauce–720 lbs–Filthy.” “Dried Bean Curd Sticks [probably dried yuba sticks]–400 lbs–Filthy.” “Cnd. [Canned] Salted Bean Curds–200 lbs–Insect infected.” Note 1. This may well be fermented tofu.

Page 688: Port of San Francisco–Continued. “Bean Curd–400 lbs–Filthy.” “Dried Bean Curd–400 lbs–Filthy.”

Note 2. “Dried Bean Curd” is probably dried yuba rather than dried tofu. If it is: This is the earliest English-language document seen (Oct. 2012) that uses the term “Dried Bean Curd Sticks” to refer to dried yuba sticks.

“Cnd. [Canned] Bean Curd–48 lbs–Filthy.” “Dried Bean Curd–280 lbs–Filthy.” “Bean Sticks–800 lbs–Filthy.”

Note 3. This periodical was published once a month, 2 volumes a year (6 numbers per volume), from July 1934 to March 1974 by the North American Publishing Co. (New York). 80 volumes total.

179. Kagawa, Aya. 1949. Japanese cookbook (100 favorite Japanese recipes for Western cooks). Tokyo: Japan Travel Bureau. 162 p. Illust. (line drawings, and color-, and black and white photos). 19 cm. Series: Tourist Library No. 11.

• **Summary:** Contents: Preface. General remarks (The why of Japanese food, its nutritive value, table utensils, an ordinary meal, meals for guests, table etiquette, kitchen utensils, how to cut up fish and vegetables, glossary {incl. aburaage, miso, shoyu, tofu}). Japanese cookery: Table of measures, soups,

boiled foods, broiled foods, fried foods, saucepan foods, steamed foods, *hitashimono* (boiled greens in soy [sauce]), aemono (dressed vegetables), vinegared foods, sliced raw fish (sashimi), rice foods, sushi (vinegared rice foods), pickles, seasonal menus, New Year’s foods, Girls’ Festival foods. How to make Japanese cakes (incl. bean paste from red beans).

Many recipes call for “shoyu” [soy sauce]. Soy related recipes: Scrambled egg soup (with shoyu or Worcester sauce, p. 42). Tofu and Japanese leek soup (p. 49). Miso soups (p. 50-51). Broiled egg-plants (with miso, p. 70). Beef sukiyaki (with tofu, p. 79-80). Fish stew (with tofu, p. 81). Odamaki mushi (with yuba, p. 85). Boiled greens in soy (p. 91-92). Dressed food with white sesame [seeds] and vinegar (and aburaage {fried beancurd}, p. 96). Dressed carrot and kidney beans in pod (with tofu, p. 97).

On p. 14 we read: “Soy beans are used very much in Japanese food; especially in hilly regions where fish is scarce, or in vegetarian menus (in connection with Buddhism). Beans are not only simply boiled but eaten in various ways. They are made into *tôfu* (beancurds), *aburaage* (fried *tôfu*), *nattô* (steamed and fermented beans), *shôyu*, *miso*, [azuki] bean-paste used in cakes, etc.” Key flavorings are miso, shoyu, sugar, and vinegar. Sake, mirin, dashi and ajinomoto (seasoning powder) are also important. “Seaweeds are usually eaten dry. Nori (seasoned laver), kombu (tangle), wakame (lobe leafed undaria), hijiki (spindle-shaped bladder-leaf), and so on, are rich in iodine,....”

Note: This is the earliest English-language document seen (May 2012) that contains the word *aburaage* or the term “fried *tôfu*” (with diacritics). They refer to deep-fried tofu pouches.

“Of flavorings, *miso*, *shôyu*, sugar and vinegar are the most important. *Sake* (Japanese wine), *mirin* (a sweet kind of *sake*) and *dashi* are used in this way to give flavor. Properly speaking, *dashi* is formed by boiling shaving [sic, shavings] of *katsuobushi* (dried bonito) or *kombu* (tangle, a kind of kelp), but *ajinomoto* (seasoning powder) may take its place. Usually, however, *dashi* is not made, and instead *niboshi* (a small dried fish) is boiled together with the food to give it flavor. Besides, ground walnuts sesame, peanuts etc., are used to dress vegetables. In addition to these, mustard, red pepper, horse radish [wasabi], the leaves and berries of *shiso* (a kind of highly flavored leaf), the leaves and berries of *sansho* (Japanese pepper), Japanese leeks [negi], *myôga* (myôga ginger [*Zingiber mioga* Roscoe]), ginger [shôga, the root of *Zingiber officinale*], are used as flavorings, being found growing in most kitchen gardens.”

“Our special thanks are due to Dr. R.H. [Reginald Horace] Blyth, professor of Gakushin University, who translated the original Japanese manuscript into English.” Aya Kagawa was born in 1899. The book was first published in December 1949 but not copyrighted until 1952. The almost identical 9th printing appeared in April 1955. Only

the color photos were changed (upgraded) by 1955. The first true revision and 2nd edition was the so-called “Fourteenth & revised edition” of 1962. Address: M.D. and president of Joshi Eiyô Tanki Daigaku (Women’s Nutrition College), Tokyo, Japan.

180. Bureau of Entomology & Plant Quarantine, Bureau of Animal Industry–U.S. Food & Drug Administration. 1950. Food and Drug–Agriculture. List of Imports Detained by the Federal Food and Drug Administration. Nov. 18 to Dec. 16, 1949. *American Import & Export Bulletin* 32(2):145-46, 148-49. Feb.

• **Summary:** This is a long (4-page) table with 3 columns: (1) Product and port of entry. (2) Quantity. (3) Reason for detention. Note that the country of origin is not given.

Page 146: Port of Chicago. Chinese Merchandise.

“Salted Bean Sauce–10 cases–Insects. “Dried bean sticks [probably dried yuba sticks]–10 cases–Insects. “Salted Bean Curds–2 cases–Labeling incomplete and filthy.” Note 1. This could well be fermented tofu.

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the word “Dried bean sticks” (regardless of capitalization) to refer to what are probably dried yuba sticks.

Page 149: Port of San Francisco. “Bean Sauce–1,440 lbs.–Insect larvae. “Dried Bean Curd–1,800 lbs.–Insects, insect larvae. Note 3. This could be either dried yuba or pressed tofu (*doufu-gan*).

181. Feng, Doreen Yen Hung. 1950. The joy of Chinese cooking. New York: Greenberg. 227 p. Illust. Index. 24 cm.

• **Summary:** The section on “Ingredients” describes each basic ingredient, and gives the Cantonese name plus Chinese characters, including: (1) “Soya sauce” (*jeung yow*) is an absolutely essential basic ingredient. It “can nowadays be found in almost all neighborhood delicatessen or grocery shops” (p. 21). (2) “Bean sprouts” (*dow ngaah*). “They are usually golden yellow in color and possess a strong flavor and a rather crunchy texture.” An illustration shows these sprouts, which appear to be soybean sprouts (p. 22-23).

(3) Two types of dried yuba (*fooh jook* and *tiem jook*), both illustrated. When soya bean milk is boiled, it separates into various layers; “the rich cream that rises is called *fooh jook*, and the settling sediment is called *tiem jook*. When dried, they look like stiff boards glazed with enamel, but after they have been cooked they become creamy and gelatinous. *Tiem jook* is used in fish dishes; while *fooh jook* is usually cooked in soup” (p. 30-31).

Note 1. This is the earliest English-language document seen (Oct. 2021) that uses the term *fooh jook* to refer to dried yuba sticks.

Note 2. This is the 2nd earliest English-language document seen (Oct. 2012) that uses the term *tiem jook* to refer to sweet dried yuba–specifically to the thicker, sweeter,

less expensive bottom yuba, called *ama-yuba* in Japan. In the illustration, the shapes of the two types of dried yuba are completely different. The *tiem jook* looks like a stiff rectangle about 1/4 inch thick.

(4) Chinese sauces (*jeung*) come in bottles or cans (p. 32): (4a) Soya sauce (*jeung yow*) is an almost black sauce made from soya beans. The best substitute is Maggi. (4c) Bean-curd cheese (*fooh yü*) [fermented tofu] “Grayish-white little cubes of pressed bean-curd fermented in strong wine.” It may be used in cooking. (4d) Bean-curd cheese, Eastern style (*naam yü*) [fermented tofu]. Fermented in a brick-red sauce, it is usually used for cooking. (4f) Tiny black fermented beans (*dow see*) [fermented black soybeans]. In cooking, these are generally crushed and used to season other strong-smelling ingredients such as fish. They add “a delightful spiciness to the sauce.”

Note 3. This is the earliest English-language document seen (Oct. 2011) that uses the terms “Bean-curd cheese” (with hyphen) or “fooh yü” or “naam yü” to refer to fermented tofu.

Note 4. This is the earliest English-language document seen (Nov. 2011) that uses the term “black fermented beans” to refer to *dow see* or fermented black soybeans.

(4g) A famous red sauce (*hoy sien jeung*) [Hoisin sauce]. This famous red sauce is often used in cooking shellfish and duck; it is widely served with Peking roast duck.

Note 5. This is the earliest document seen (Oct. 2012) that mentions Hoisin sauce, which it calls *Hoy sien jeung* (Cantonese). Chinese name is also romanized as *hai-hsien Chiang* (Wade-Giles) or *haixian jian* (pinyin). A major ingredient is soybeans.

There follows a description (p. 33) of how to make bean-curd cheese from fresh bean curd. (5) Oils and fats, incl. vegetable oils like soya bean oil, peanut oil, or sesame oil.

Soy related recipes include: Pig’s feet soya bean soup (*Jüh gerk fooh jook tong*, with yuba, p. 80). Oyster sauce bean curds (*Ho yow dow fooh*, with fresh bean curd, p. 155). Many other recipes use soya sauce as a seasoning.

Note: This book was first published in 1950 by Greenberg in New York City (227 p., 24 cm). It was next published in 1952 by Faber and Faber in London (227 p., 23 cm). Grosset & Dunlap (1954) appears to be the third.

182. Porterfield, W.M., Jr. 1951. The principal Chinese vegetable foods and food plants of Chinatown markets. *Economic Botany* 5(1):3-37. Jan/March. See p. 5-9. [68 ref]

• **Summary:** The soybean “is referred to by Chinese as ‘the poor man’s meat and the poor man’s milk.’” In New York City, soybeans are sold in Chinese shops in three main forms: seeds [whole dry soybeans], bean sprouts, and bean curd. Soy sauce and soybean oil are also available. Soy sauce “is a heavy dark fluid which is used as a condiment to supply saltiness that brings out flavor...”

When soybean milk is heated, a skin [yuba] such as forms on milk rises to the surface. Other [Western] uses of soybeans include soybean flour, meal, lecithin, shortenings, and margarine.

Nitrogen fixation takes place in the nodules of the soybean plant, which makes it useful as a green manure. Crude soybean oil goes into the manufacture of soap (both soft and hard). Soybean meal can be used to make plastic and "protein fibers" which are called "soybean wool." "During the war about 1,000 pounds of soybean wool were produced each day, and all of it went into the winter uniforms of the armed forces."

Some 36 different varnishes with 100% of their oil content as soybean oil have been developed and given exposure tests. A rubber substitute named "norepol" has been developed and can replace rubber in "insulation, shoe heels, fruit-jar rings, gaskets, and tubing." Soybean protein has been used as a stabilizer in fire-fighting foam. Other industrial uses, which are too numerous to mention, include enamels, printing ink, linoleum, foundry cores, glycerin, notepaper, and billiard balls. In the United States, soybean crops and products create an annual income of \$45 million.

Tables show: (1) Nutritional composition (on an "as-is" basis) of: "Bean cheese (Tou-fou; 13.5% protein). Soybean milk (3.13% protein). Bean oil (Tao-yu; 7.49% protein). Soy sauce (Tao-jung; 12.67%). (2) Nutritional composition of soybeans.

Half-page photos (each with a black background) show: (1) Bean sprouts ready for cooking. (2) A square of firm "Tou-fu, bean curd, a cheese made from soybeans." Address: 3334 Prospect Ave., N.W., Washington &, DC.

183. Burnett, R.S. 1951. Soybean protein food products. In: K.S. Markley, ed. 1951. Soybeans and Soybean Products. Vol. II. New York: Interscience Publishers or John Wiley & Sons. xvi + 1145 p. See p. 949-1002. [125 ref]

• **Summary:** Contents: 1. Soybean flour, grits, and flakes: Introduction, early history, types of soybean flour—standard definitions, amount of soybean flour and related products produced, methods of manufacture, soybean flour in bread, soybean flour in other baked goods, soybean flour in the meat industry, soybean flakes in breakfast foods, soybean flakes and derived peptones as brewing adjuncts, miscellaneous uses of soybean flour. 2. Isolated and modified soybean proteins: Aerating agents for confections and related products, neutral spray-dried soybean protein [isolates], soybean protein in [whipped] toppings, soybean protein and flour in confections, soybean protein and flour in ice cream, soy sauce, monosodium glutamate from soybeans, soybean vegetable milk, tofu, miso, yuba, and other Oriental soybean foods (incl. natto and Hamanatto).

The soy flour industry in the U.S. has grown steadily in recent years. Deliveries of soy flour "from the years 1930 to 1940 averaged about 25 million pounds annually. The

deliveries have increased considerably since 1940 partly as a result of an increase in domestic use and partly as a result of deliveries of soybean flour to various government agencies, largely for export. In 1941, Federal purchases amounted to about 10 million pounds of soybean flour. In 1943, the amount increased to 170 million pounds when large shipments were made to Great Britain and the U.S.S.R. under lend-lease. Purchases of soybean flour by the Federal government decreased for several years, but increased in 1946 to an estimated 200 million pounds under the UNRRA [United Nations Relief and Rehabilitation Administration] program. Total soybean flour deliveries for 1946 were approximately 380 million pounds. In the domestic market the bakery industry was the largest consumer. About 40% of the domestic sales of soybean flour were for bakery use. Since the Bureau of Animal Industry has legalized the use of soybean flour as a binder in meat products, about 20% of domestic sales are to the sausage industry. The balance is used in prepared dough mixes, macaroni, candy, and in institutional feeding.

"In 1947, domestic sales of soybean flour were over 60 million pounds. This amount, plus government purchases and exports, amounted to about 415 million pounds. Two-thirds or more of the present domestic consumption of soybean flour is by the bakery, meat processing, and pet foods industries."

Table 155 (p. 953) shows Bushels of soybeans used for U.S. soy flour production (1942-1947). In 1942-43, the amount of full-fat soy flour produced in the USA was roughly 40% of the amount of defatted. In 1944-45 it was about 49%, but thereafter the percentage dropped rapidly to only 5% in 1946-47.

Note: These statistics relate to Soya Corporation of America, Dr. Armand Burke, and Dr. A.A. Horvath.

Concerning soybean flakes and derived peptones as brewing adjuncts (p. 974-77): "Soybean flakes and grits have been employed by the brewing industry to improve the body and flavor of beer, to increase foam stability, and to stimulate yeast growth.

"Improvement in foam stability and flavor can also be attained by adding directly to the finished beer a hydrolyzed soybean protein which has been broken down to the peptone and proteose stage...

"The early history of the use of soybean products as whipping agents is of interest since this work stimulated the development of processes which eventually led to the production of the present soy albumens. In 1939, Watts and Ulrich pointed out that an active whipping substance could be prepared from solvent-extracted soybean flour in which the protein had not been heat denatured, by leaching it at the isoelectric point of the protein. This extract was found to whip more readily and to a much greater volume than suspensions of the original flour... The active principle in the whipping substance prepared by Watts and Ulrich was

probably the nonprotein nitrogenous material present in the soybean flour which is soluble at the isoelectric point of the protein.”

Tables show: (155) Soybeans used in the production of low-fat and full-fat flour and grits (1942-1947, 1,000 bushels). (156) Peroxide value of fat extracted from pastries stored at -17.8°C. (0°F.), containing different percentages of soybean flour for periods of 0-6 months. (157) Analysis of uncooked liverwurst emulsion and of processed (water-cooked) sausage containing added soybean flour and water. (158) Losses in cooking liverwurst containing added soybean flour and water. (159). Analysis of frankfurter emulsion and of smoked sausage made with 3.5% of various binders. (160) Losses in smoking frankfurters made with 3.5% of various binders and after consumer cooking. (161) Effect of the addition of soybean peptone on volume and life of foam on beer. (162) Composition and pH of soybean albumens. (163) Composition of ice creams containing soybean flour. (164) Comparison of soybean milk with cow milk. One sample of cow's milk is compared with 4 samples of soybean milk (probably Oriental) and 3 samples of modern U.S. soybean milk reconstituted (Soyalac for infants, all purpose Soyalac, Soyagen canned from Loma Linda Food Co., California).

Figures show: (199-201, p. 981) Comparison of whipping ability of egg albumen and soybean albumen in different proportions and combinations. (202) Flow sheet for the acid hydrolysis process used in making HVP soy sauce. Address: Protein By-Products Research, Research and Technical Div., Wilson & Co., Inc., Chicago, Illinois.

184. Ray, Georges. 1951. *Technologie laitière*. 2e éd. [Dairy technology. 2nd ed.]. Paris: Ed. Dunod. vii + 743 p. See p. 703-09. Illust. Index. 25 cm. [Fre]

• **Summary:** The chapter on “Milk substitutes” (p. 696+) contains a subchapter titled “Soymilk (*Lait de soya*)” (p. 703-09), which has the following contents: Introduction. General rules to follow in the preparation of soymilk. The North Vietnamese (*Tonkinoise*) method. Method of preparation used in dairies in the Far East: Castagnol process. Modern methods for the preparation of soymilk. Composition of soymilk. Properties of soymilk. Fermented soymilk (using *Bacillus acidophilus*, British patent No. 441,574, 22 Jan. 1936). Concentrating / condensing and drying soymilk (including yuba). Soymilk curds (*Caillebotte de soya*). The future of soymilk.

Contains two full-page ads by Alfa-Laval for dairy milk equipment.

Vegetable milks have certain advantages over animal milks. They are easily made in a state of microbial purity, free of tuberculosis bacteria. Their casein precipitates more rapidly than that of cow's milk and does not coagulate in the same manner in the stomach. And it can be sold at a lower price. Later: It contains no cholesterol, and makes better use of world food supplies. Disadvantages: It has a lower

calcium content and many Westerners prefer the flavor of animal milks.

Here is a quick review of the processes for making soymilk, described at length in a monograph (written under the direction of G. Ray) by D. Kaltenbach and J. Legros [1936]. Precise information about the soya industry is assembled in a more recent work by A. Matagrín. Soymilk pioneer in France were [Li Yu-ying], L. Rouest, and H. de Guerpel (p. 703).

The Castagnol process was developed by Ray at the agronomic research Institute in Indochina (p. 704).

Starting in 1910, a Franco-Chinese society was founded for the study of the utilization of artificial milk from the soybean. The experiments were abandoned in 1912. In 1916 Prof. O. Laxa of Prague recommended for making soymilk on a small scale. Note: It is not important (p. 705).

In London, before World War I, a synthetic milk syndicate launched a type of [soy] milk adapted to European tastes. It applied the process of F. Goessel [of Germany]; 100 liters of soymilk were obtained from 10 kg of ground soybeans, 5 gm of sodium phosphate, 2.4 kg of lactose [milk sugar], 2 kg of sesame oil, 6 gm of salt, and 60 gm of sodium bicarbonate [also known as baking soda or bicarbonate of soda]. Melhuish, an Englishman, patented a process for enriching the [soy] milk with various oils that did not change its taste. Some years after World War I, Bertrand received a patent for the manufacture of deodorized soymilk. Among the American processes are those of Horvath and Kloss (p. 705).

In Germany, the Soyama factory in Frankfurt makes a fresh soymilk very similar to cow's milk but with a different flavor. A table shows the nutritional composition of three different types of milk. After standing, the cream of Soyama soymilk separated. This soymilk has a more neutral and softer flavor than that of cow's milk. Bread made with this soymilk is excellent. In 1932 the French engineer Max Adler patented a process for soymilk without the characteristic flavor and odor (p. 706).

In China during World War II, soymilk was used extensively in refugee camps and saved many lives, especially those of children (p. 708).

The Annamites are fond of soymilk during the hot season. Each morning soymilk merchants can be seen circulating through the streets of the native villages of Hanoi. The product is consumed sweetened or unsweetened, cooked with rice, or added to various soups (p. 708).

Fermented soymilk: John H. Kellogg received a British patent for acidophilus soymilk. No. 41,574. 22 Jan. 1936. Yuba is the concentrated film of dried soymilk lipo-proteins (p. 708).

In France, Rene Jarre is specializing in the preparation of soyfoods (*produits alimentaires à base de soja*). In Monahan and Pope (1915) added to soymilk powdered malt, cacao and chocolate—U.S. patent 1,165,199 of 21 Dec. 1915

(p. 709).

The future of soymilk: The main challenge now is to find a way to deodorize soymilk. Note: And to remove the flatulence factors (p. 709). Address: Honorary Prof. (Tunis, Rennes, Grignon), former Head of Technical Services, International Institute of Agriculture, Rome (Ex-Chef du Service Technique, a l'Institut d'Agriculture de Rome).

185. Nickerson, Jane. 1952. News of food: Books on how to prepare Chinese dishes suggest savory but hard-to-make items. *New York Times*. June 7. p. 16.

• **Summary:** *The Chinese Cookbook*, by Wallace Yee Hong, was published a few days ago by Crown. This book more nearly approaches the real cooking of China, and more specifically of Canton, than any such book written for Americans. It calls for such ingredients as snow pea pods, dried bean curd stick, Chinese red dates, dried lilies, bitter melon, winter melon, bird's nests, ginseng [ginseng?], and so on.

Mr. Hong, born in Canton and a restaurateur in the USA for 35 years, owns the Ho Lee Garden Restaurant in Boston's Chinatown. "There are two types of soy sauce, according to Mr. Hong, and he gives recipes for each in his book. The light is made simply from soy [beans], salt and water [no wheat or additives] and is the only type to be used in cooking. The dark, with which Americans are more familiar, has molasses and sometimes rice wine added." This can be put on the table as a salt substitute but is not employed in cooking.

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "dried bean curd stick" to refer to dried yuba sticks.

186. Takenobu, Yoshitaro. ed. 1952. Kenkyusha's new Japanese-English dictionary. Tokyo: Kenkyusha. iv + 68 + 2266 + [2] p. 19 cm.

• **Summary:** This interim edition, between the 1931 second edition and the 1954 third edition has two dates written in Japanese in the front matter: March 1931 and April 1949. On the last page, the publication date is given in Japanese as 1 Feb. 1951.

This edition has two main parts: (1) "New Words (1949) consisting mostly of mostly English language words that entered the language due to the social and cultural influence of the American occupation of Japan. The words, a mini-dictionary on 68 pages, include words such as aakeedo = arcade (written in both rōmaji and katakana). There are also some new Japanese words.

(2) The entire content of the 1931 second edition—exactly the same, page for page.

New words related to soy: daizu [abura]: [soy] bean oil. Address: General editor, Japan.

187. Feng, Doreen Yen Hung. 1954. The joy of Chinese

cooking. New York: Grosset & Dunlap. 226 p. Undated. Illust. Index. 21 cm.

• **Summary:** This hardcover Chinese cook book retails for \$3.95. The contents and pagination are the same as in the original 1950 edition of the same title.

188. Katsumata, Senkichi. ed. 1954. Kenkyusha's new Japanese-English dictionary. Entirely new ed. [3rd ed.]. Tokyo and Kyoto: Kenkyusha. xvi + 2136 p. 24 cm.

• **Summary:** Soy related words:

aburaage: see aburage.

aburage: fried beancurd.

age: a piece of fried bean-curd.

ama-miso: slightly salted bean paste.

atsuage: not listed.

Daitokuji natto: not listed.

daizu: a soya (= soy) bean. daizu kasu: a [soy] bean cake

[a co-product of soy bean oil]. daizu abura: [soy] bean oil.

dengaku: bean curd baked and daubed with miso.

dengaku-zashi ni sareru: to be transfixed; to be pierced through (as with a spear).

edamame: green soybeans.

ganmo: not listed.

ganmodoki: not listed. Hamananatto: not mentioned.

Hamanatto: not mentioned.

inarizushi: fried bean-curd stuffed with boiled rice.

Note 1. This is the earliest English-language document seen (May 2012) that contains the word *inarizushi* (one word without hyphenation).

kogoridōfu = kōyadōfu.

koikuchi: not listed.

koikoku: a carp cooked in bean (= miso) soup.

kōji: malt (mugi); yeast; leaven (kōbo); kōji-ya: a

maltster [a maker of kōji]. kōji ni suru: to malt something.

kōridōfu: a frozen bean curd.

kuromame: a black soy bean.

miso (chomiryō = seasoning): bean paste; miso. miso o suru: to mash the miso [as in a suribachi]. miso kakeru: to put miso on something (as food). (2) (tokui to ten) sore ga kare no miso da: that is what he takes pride in [that is what he is good at]. (3) (hikakuteki-ni) miso o kakeru (shuppai suru): to make a mess (=sad work) of something; to make a miserable (=poor) showing. miso o suru (hetsurau): to flatter [someone, as one's superiors]. [Modern is goma suru; kare, shatcho ni goma shitte-iru: he is flattering his boss. A grinding gesture goes with it. goma-suri: a person who flatters]. kuso miso ni iu: to speak meanly of a person; to speak of a person in the most disparaging terms. miso mo kuso mo isshoni suru: to mix up good and bad things. miso no miso kusaki wa, jō miso ni arazu: The secret of art lies in concealing art [Akiko never heard this saying]. soko ga miso darō: perhaps that's the point he takes pride in [=the key point].

misokoshi: a *miso* strainer. [misokoshi de mizu o sukuu]:

weave a rope of sand; attempt impossibilities [literally, to try to scoop up water with a miso strainer].

miso-mame: soy (= soya) beans.

misuzu-dofu: not listed.

momen: no meaning related to tofu is listed.

nama-age: fried bean curd.

Note 2. This is the earliest English-language document seen (May 2012) that contains the term *nama-age* which refers “fried bean curd.”

nattô: fermented soybeans. nattô uri: a vendor of fermented soybeans. nattô-jiru: miso soup with ground fermented soybeans.

nigari, nigashio: bitter; brine.

nori [no tsukudani]: laver boiled down in soy [sauce].

oboro: not listed.

okabe: = tofu.

okara: bean curd refuse.

shimidôfu = kôridôfu [frozen tofu].

Note 3. This is the earliest English-language document seen (May 2012) that contains the term *shimidôfu* (written as one word, with diacritics) which it says is the same as kôridôfu.

shitaji (7): soy [sauce].

shôyu: soy [sauce].

tamari: [a kind of] soy; soy sauce; sauce from refined soy.

tôfu: beans curds (=cheese); tôfu. [tôfu itcho; in characters]: a piece (=cake) of bean-curd. [tôfu-ya]: a bean-curd dealer (=seller). [yaki-dôfu]: roasted bean-curd. kare ni iken shita totte, tôfu ni kasugai da: advice to him is like water sliding off a duck’s back = It’s a mere waste of words (=It is like pouring water into a sieve) to advise him. [tofu-ya e ni ri, saka-ya e san ri to iu tokoro da]: there is no human habitation within five miles of the place. [It’s out in the boondocks].

tônyû: bean soup; soya-bean juice [sic, soymilk].

u-no-hana: (1) flowers of the *Deutzia scabra*. (2) [tôfu no kara] bean-curd refuse.

yuba: dried bean curds [sic, the film that forms atop soymilk when it is dried]. Address: General editor, Japan.

189. Morohashi, Tetsuji. 1955-1960. *Daikanwa jiten* [Chinese-Japanese historical dictionary]. Tokyo: Taishukan Shoten. 12 vols. + index (alphabetic by phonetic Japanese pronunciation). Cites earliest references (usually in Chinese documents) for Japanese words. [25+ ref. Jap]

• **Summary:** This is widely regarded as one of the greatest Chinese dictionaries. Volume 11, pages 394-95. The following pronunciations of Chinese words may not be correct. (33) Sho. Hishiomiso. Incubate rice or barley or beans, etc. Let them ferment and add salt to make these. (35) Chiang Yuan. Miso and shoyu shop. The shop where miso, shoyu, and pickles are sold. (36). Shoko. A big earthenware pot in which hishio is kept. (37). Shokyu. Shishibishio in a

hot soup. (39). Chiang tsai. Miso pickled vegetables. (40). Shosho. Miso and shoyu craftsmen. (41). Shosui. Soup or porridge (Zosui) cooked with miso. Ruiju Meibutsuko, Shakuso orai. (42). Shosei. Hishio with flavor. (43). Shotsui. Hishio pot. (45). Chiang fang. Miso and/or shoyu shop. See (35). (46). Shobutsu Hishio. (47). Hishio no kame. Hishio vat. (48). Chiang-yu. Chinese soy sauce. Cooked soybeans, roasted barley and salt are fermented. The liquid is extracted; a salty seasoning, also called shitaji or murasaki.

190. Tanaka, R. ed. 1955. *Yuba no bunken* [Documents about yuba]. Kyoto, Japan: Senmaru-ya. 8 p. Unpublished manuscript. [6 ref. Jap]

• **Summary:** The passages on yuba are transcribed from various works, including the *Wakansansai Zukai*, *Kottoshu*, *Kyonan Rubetsushi*, and *Kaikai Shokukyo*. Address: Japan.

191. Griffin, Stuart. 1955. *Japanese food and cooking*. Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle Co. 167 p. Illust. No index. 19 cm.

• **Summary:** This basic introduction by an American contains about 70 Japanese recipes. The best known of these in the USA is Sukiyaki. The chapter titled “Ingredients” states (p. 3-4) that ingredients available in the USA include “*fu*, or wheat gluten; *tofu*, or bean curd; *yuba* or dried bean curd [sic]; and *udon*, or macaroni... sugared red beans [azuki],... bean paste squares and jellies, seaweed rice-cakes [probably mochi], painted with *shoyu* sauce.” Sauces and flavorings are very important to Japanese cookery. “Foremost among these is *shoyu*, or soy sauce, made from wheat or barley, soybeans, salt, and water. A dark, inky, thirst-provoking liquid, it is similar to that found in Chinese restaurants. The wheat is grilled in a big iron pan until burnt-brown in hue. It is then crushed. [Soy] Beans are boiled in an adjacent cauldron, with a heavy weight on the lid. Boiling lasts three to five hours, then the fire is put out, and the beans are kept in the kettle overnight. Steaming may be used as a method of bean preparation. This process lasts for five or six hours. The grilled wheat and boiled beans are mixed and placed in a malt-room [sic, koji room] where malt seed [sic, koji starter] are added. The mixture turns to malt [koji] in a few days. Salt water is put over the malt and left for a few more days, being stirred occasionally until fermentation takes place. This overall mixture is pressed, and the [soy] sauce obtained is bottled.

“*Miso* is another necessity. This is a mixture of malt [koji], salt, and mashed soybeans, the liquor of which is drained off in tubs and allowed to ferment. *Miso* will be discussed later in the soup chapter” (see p. 64). Soy sauce and Aji-no-Moto are frequently mentioned. Soy-related recipes: Chirashi-zushi (with beancurd, p. 31-34). Sashimi (with shoyu, p. 36-41). Miso soups (p. 49, 64-69). Bean curd soup (p. 52-53). Roasted on a plough (sukiyaki with bean curd, p. 70-81). Vegetables, white sesame & vinegar (salad, with “1 *aburaage*, a kind of fried Japanese bean curd,” p.

1124-25). Shoyu spinach (salad, p. 134). Turnips in shoyu (p. 134-35). Sweet soy beans (a festival dish at New Year's, p. 154-55).

Also mentions: Red rice (with azuki beans and glutinous rice, p. 17-18). Norimaki-zushi (sushi wrapped with nori, p. 27-30). Red bean cake (*yokan*, with bean paste, made from red kidney beans, and agar-agar, p. 145-46). Red kidney bean soup cake (*shiruko* [with azuki beans and mochi], p. 148-49). Bean & jam cake (*kuzumanju*, [with azuki bean paste and kuzu], p. 150-51). Address: [Japan].

192. Chao, Buwei Yang. 1956. How to cook and eat in Chinese. London: Faber and Faber. 286 p. Illust. Index. 21 cm.

• **Summary:** The basic information about soy in this 1956 British edition is quite similar to that in the original 1945 American edition except: (1) British spelling is used (e.g., flavour instead of flavor), and additional information about European ingredients or substitutes; (2) The same (or almost the same) text appears on different pages. See pages 20-21 (Vesop is very much like soy sauce. Clear-simmering is slow-cooking without soy sauce. Red-cooking is slow-cooking with soy sauce), p. 43-44 (red beans, [probably azuki], horse beans, soy beans and their products, bean milk and bean curd [tofu]), p. 46 ([soy] bean oil and peanut oil), p. 47 (soy sauce), p. 49-50 (soy-bean sauce, soy sauce or *shi-yau* in Cantonese, "Acceptable substitutes for soy sauce in the order of preference, are as follows: 'Vesop' sauce (Italian), 'Maggi' (German), and 'Kub' (French))." "Similar to soy sauce is a soy jam, fermented flour jam, "In Cantonese the soy jam is called *mo-shi*." Oyster sauce, sesame oil, soy bean cheese (*fu-yü*).

Soy-related recipes include: Bean curd stirs meat slices (p. 84-85). Bean curd stirs shelled shrimps (p. 144). Arhat's fast or Vegetarian's ten varieties (with wheat gluten, bean curd skin [yuba], fried puffy bean curd, soy sauce, etc., p. 180-81). Plain stirred bean curd (p. 181-82). Oyster sauce bean curd. Mushrooms stir bean curd. Scallions stir bean curd (p. 182-83). Pot-stuck bean curd (p. 184). Bean curd and meat-slice soup (p. 188). Huichou pot (with fried bean curd [large triangles or small cubes], p. 204-05). Sandy-pot bean curd (p. 205-06). Soy jam noodles (p. 224-25, with ½ can *yünshi* soy jam {also called *mo-shi* in Chinese foodshops}).

Pages 181-82 discuss bean curd. The Chinese characters for all recipe names are given on pages 257-71. Address: Cambridge, Massachusetts.

193. Chen, Philip S.; Chen, Helen D. 1956. Soybeans for health, longevity, and economy. South Lancaster, Massachusetts: The Chemical Elements. xii + 241 p. Illust. Index. 21 cm. 2nd ed. Jan., 1962, 242 p. [24 ref]

• **Summary:** A comprehensive review of the subject. Contents: Preface, by the author (South Lancaster,

Massachusetts, July 1956). Foreword, by Geo. M. Strayer, Vice-President and Secretary-Treasurer, American Soybean Association. Introduction. Part I: Nutritive value of the soybean. 1. Protein (incl. Dr. Wolfgang Tiling of Hamburg, Germany; Dr. Harry Miller). 2. Fat (incl. phosphatides, sterols and hormones). 3. Carbohydrates and caloric value. 4. Minerals. 5. Vitamins. 6. Soybeans and world population. 7. Soybeans and disease (incl. Dr. Wolfgang Tiling of Germany).

Part II: Soy products. 8. Soybean oil: Composition and properties, processing and refining, reversion, uses, phosphatides, margarine, mellorine (vegetable frozen dessert). 9. Soybean oil meal: Heat treatment, Gelsoy, Multi-purpose Food. 10. Soy flour: Uses, soy bread vs. enriched white bread. 11. Soy milk. 12. Soy cheese (or soybean curd, "aptly described by the Chinese as 'the meat without bones'"—incl. pressed tofu sheets and yuba). 13. Soy sauce: Preparation of kojis, brine fermentation, production yields, microorganisms are available. 14. Soybean sprouts.

Part III: Soybean culture and preservation. 15. Soybean culture: Two types of soybeans (commercial field vs. edible or vegetable varieties), inoculation, fertilizer, cultivation, harvest. 16. Preservation of soybeans: Shelling, canning, freezing, dehydration, harvesting dry mature soybeans.

Part IV: Recipes. 17. Soybeans and soybean pulp: Green or fresh soybeans, dry soybeans, soybean pulp ("prepared by pressing cooked soybeans through a coarse sieve or by grinding them in a food grinder"), recipes (incl. Soyburger, Scalloped green soybeans, and Roasted soybeans—dry roasted or deep-fried. Describes how to make wheat gluten at home and praises monosodium glutamate for its ability to improve the flavor of recipes—though its use is called for only in the recipe for Soyburger). 18. Soy flour: Breads, cakes, cookies, pies, soups, other recipes. 19. Soy grits and soy flakes. 20. Soy milk. 21. Soy cheese. 22. Soybean sprouts.

Appendices: A. Soybean utilization (chart). B. Manufacturers and handlers of soy foods (Source: 1956 *Soybean Blue Book*). C. References.

Chapter 1, "Protein," begins: "The soybean is best known for its high protein content (p. 7). It then discusses the work of Dr. Harry Miller (p. 14-15).

Chapter 15, "Soybean Culture," describes how to grow soybeans in a garden. Pages 126-27 discuss the two types of soybeans: the commercial field type and the edible vegetable type. Five major differences between the two types are discussed (p. 126). The edible varieties are larger in size, do not yield as heavily (though they yield more heavily than snap beans or lima beans), are more prone to shatter as they near maturity in the field, are superior in flavor, texture, and ease of cooking, and some edible varieties are also superior in the manufacture of soybean flour, soybean milk, roasted beans and other products. Table 31 (p. 130) lists eleven varieties of edible soybeans: Very early—Giant Green. Early—Bansei, Fuji. Midseason—Hokkaido, Jogun, Willomi.

Late: Illington, Imperial, Funk Delicious, Emperor, Higan. Commercial-Illini.

Chapter 16, "Preservation of Soybeans," describes how to preserve "green soybeans" by canning, freezing, and dehydration.

Photos show: (1) A sack of Lincoln soybeans (facing p. 1). (2) Soybean plants, showing pods and leaves (p. 3 and 4). (3) A beam balance with a small amount of soy flour balancing many animal products. "The protein value of soy flour: 1 lb. of soy flour contains protein values equal to 2 lbs. beef, or 34 eggs, or 6 quarts milk." Source: Health and Character Education Institute (p. 6). A similar photo (p. 24) states: "1 lb of soy flour contains food calories equal to 3½ lbs beef, or 3 quarts milk, or 29 eggs." (4) Two views of a child. Left, suffering from marasmus. Right, after six months on a soy milk diet. Courtesy Dr. Wolfgang Tiling (p. 62). (5) A machine at the Northern Utilization Research Branch of USDA treating soybean oil with alkali (p. 72). (6) The distribution of MPF [Multi-Purpose Food] to starving Indian children (p. 91; Courtesy Meals for Millions Foundation). (7) Quaker City No. F4 grinding mill (p. 102; Courtesy Straub Co., 4059 Ridge Ave., Philadelphia, Pennsylvania). (8) Early soy cheese (tofu) production in the United States (p. 108; perhaps at Madison Foods). (9) The Northern Utilization Research Branch, Agricultural Research Service, USDA—shows outside of the huge building (p. 113). (10). How to grow soy sprouts in a glass jar at home (p. 119). (11) Well nodulated soybean roots (p. 129; Courtesy The Nitragin Co.). (12) Baked soybeans in a crock (p. 144). (13) Soy flour used in numerous baked products (p. 159; Courtesy ADM). (14) Griddle cakes [pancakes] made with soy flour brown quickly (p. 173). (15) Soy peanut butter cookies (incl. peanut butter and soy flour; p. 185). (16) Soy grits in a glass jar (p. 198). (17) Freshly-cooked crisp soybean sprouts in a raw vegetable salad (p. 219).

Note 1. The first printing of this book (1956) was dedicated "To Li Yu Ying and William J. Morse, *The Soybean Champions of the Eastern and Western Hemispheres*," but by the second printing (April 1957) the dedication had changed "To William J. Morse and Harry W. Miller, *The Soybean and Soy Milk Champions of Our Time*."

The publisher of this third printing was unable to sell all the books printed, so Chen apparently arranged for a company named "Outdoor Pictures" (Box 1326, Escondido, California) to sell them. On the title page, Outdoor Pictures pasted their name and address over that of "The Chemical Elements."

Note 2. According to the *National Union Catalog*, Philip Stanley Chen was born in 1903. The rear cover states that he was born in China and is now a naturalized U.S. citizen. He is a graduate of Emmanuel Missionary College [in Berrien Springs, Michigan] and Michigan State University. Before writing this, his first book on diet, health, or soybeans, he wrote several books on chemistry: (1) The

Chloro Derivatives of *m*-cresol. 1933. Easton, Pennsylvania: Mack Printing Co. 7 p. (Abstract of his PhD thesis, Michigan State College of Agriculture and Applied Science); (2) *The Chemical Elements, Rev. ed.* 1948. South Lancaster, Massachusetts: Chemical Elements (fold chart). (3) 500 Syntan Patent Abstracts, 1911-1950. 1950. South Lancaster, Massachusetts: Chemical Elements. 125 leaves. (4) Syntans and Newer Methods of Tanning. 1950. South Lancaster, Massachusetts: Chemical Elements. 128 p.

In 1962 Chen wrote *A New Look at God*, published by Chemical Elements (288 p.). Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

194. Chen, Philip S.; Chen, Helen D. 1956. Soy cheese (Document part). In: P.S. Chen and H.D. Chen. 1956. Soybeans for Health, Longevity, and Economy. South Lancaster, Massachusetts: The Chemical Elements. 241 p. See p. 106-10. Cap. 12.

• **Summary:** "Soy cheese" is tofu. Starts by describing how to make tofu. A very interesting photo (p. 108) shows "Early soy cheese production in the United States" (probably at Madison College in Madison, Tennessee).

"Soybean curd contains 7 to 9 percent of highly digestible protein with little carbohydrates and no crude fiber, and therefore has been aptly described by the Chinese as 'the meat without bones'" (p. 108). "From the soybean curd are derived three products of which the Chinese are very fond. They are Tofu Kan [pressed tofu], Tofu P'i [pressed tofu sheets] and fermented soybean cheese [fermented tofu]. These are briefly described below.

"Tofu Kan, or dried soybean curd, is made by filling a small straw or cloth bag with soybean curd and subjecting it to great pressure to reduce further the water content. The product [each cake] measured about 2½ by 2½ by ¼ inches and has the consistency of a soft rubber eraser. The dried soybean curd thus prepared may be seasoned with burnt millet-sugar or soy sauce flavored with tea or other spices.

"Tofu P'i, or soybean curd skin, is formed by pressing soybean curd between sheets of cloth under great pressure. The formed Tofu P'i is like a sheet of canvas about one foot square. It is generally used as a wrapper for sausage.

"Fermented soybean cheese is made in several forms and with different flavors. They are prepared by exposing cubes of soybean curd (from ½ by ½ by ¼ to 1½ by 1½ by ¼ inches) on matting to mould for a week or longer, and then placing it is salted rice wine or salted soy sauce to age for 6 months to a year.

"Besides soybean curd and other soybean products, another food product derived from soy milk that is popular among the Oriental people is Yuba. The Yuba is the name given to the protein film that forms on the surface of soy milk when the latter is heated nearly to the boiling point. It is removed with sticks, hung on a line and dried in the form

of sheets or sticks. Before being use, it is wetted back by soaking in water. The Yuba in sheet form is like Tofu P'i and finds similar uses."

Note 1. This is the earliest English-language document seen (Oct. 2012) that uses the term "protein film" to refer to yuba.

Note 2. This is the earliest document seen (Nov. 2010) in which the Chinese author (Philip S. Chen, Ph.D.) uses the Japanese word "Yuba" to refer to this delectable soyfood, which is popular in both China and Japan. Its Chinese name makes no sense when translated into English—"bean curd skin." Dr. Chen was a Seventh-day Adventist. Address: 1. Prof. of Chemistry, Atlantic Union College, South Lancaster, Massachusetts; 2. National Science Foundation Fellow, Cornell Univ.

195. Caleva, Harry. 1958. Chinese cookbook for quantity service: Authentic professional recipes. New York, NY: Ahrens Publishing Co., Inc. 169 p. See p. 150-53. Index. 24 cm.

• **Summary:** This is basically a Cantonese cookbook; the Chinese words are written in Cantonese.

The chapter titled "Sauces" (p. 150-53) includes recipes for the following: Soy sauce (light) (*Yuen You*). With 1½ lbs. soy beans (crushed). Soy bean jam (*Mien-Shee Ding*). With 1½ lbs. soy beans. Rice jam (*Dow-Ding*). With 1¼ lbs. roasted soy beans (mashed). Subgum sauce (Sweet and sour) (*Sub Gum Tien-Soon Wu*). With "1 tsp. soy sauce (heavy)." Oyster sauce (*Hoo You*). With ¼ cup soy sauce (light). Chinese brown gravy. With 1 tsp. soy sauce (heavy). Onion sauce, Cantonese style. With ¾ cup soy sauce (light).

Black soy sauce (*Chow You*). With soy bean 1½ lbs. Salt 2 tbs. [tablespoons]. Water 3 quarts. Molasses 1 pint. Rice wine ½ cup.

"1. Combine soy beans, salt, and water; bring to a boil and simmer for five hours; remove and strain. Pour into a jar and seal airtight, then age in the sun for six months.

"2. At the end of six months, add remaining ingredients, reseal and let age in the sun another six months.

"Note: This sauce is used for seasoning food. Not used in cooking."

Note: None of the many recipes that call for months of aging in the sun will work; they do not contain koji (*Qu*). Glossary of Chinese terms [Cantonese] (p. 161-64): *Dow Foo*—Bean curd. *Dow Ngaah*—Bean sprouts. *Dow See*—Black bean sauce [sic, fermented black soybeans]. *Foo Jook*—Soy bean cream [dried yuba sticks]. *Foo Yu*—Chinese cheese [fermented tofu]. *Gee Yeou*—Black sauce. *Gna choy*—Bean sprouts. *Jeung*—Sauces. *Jeung Yow (you)*—Soy sauce. *Jook*—Congee. *Mien See*—Brown bean sauce. *Naam Yu*—Red bean curd cheese in red sauce. *Nom Yu*—Red cheese. *Saang See Jeung*—Red bean sauce (thick). *See Yeou (you)*—Soy sauce [fermented black soybean sauce]. *Tiem Jook*—Dried bean curd [sweet dried yuba]. *Woo Dow*—Dried black [soy] beans.

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the term *Foo Jook* to refer to dried yuba sticks.

Note: This is the earliest English-language document seen (April 2012) that contains the term "Soy sauce (light)" plus its Cantonese name (*Yuen You*) or the term "Black soy sauce" plus its Cantonese name (*Chow You*).

196. Ford, Herbert P. 1958. The life story of Dr. Harry W. Miller. Unpublished manuscript. 169 p. Unpublished manuscript. 28 cm.

• **Summary:** This manuscript is the slightly edited second draft of the transcript of a single 7-8 hour interview that Mr. Ford did with Dr. Miller in 1958 in Chicago. According to Mr. Ford, Dr. Miller later gave a copy of the manuscript to Raymond S. Moore PhD, a Seventh-day Adventist educator, with the understanding that Moore would use it as the basis for a book. The book, titled *China Doctor*, was published in 1961. Dr. Miller was not very happy with the way the book turned out.

Pages 122-35 give a much more detailed account and history of Dr. Miller's work with soy milk, tofu, yuba, other soyfoods, meatlike products, and wheat gluten than is found in the finished book, *China Doctor*.

Concerning wheat gluten: Dr. Miller's company in Mt. Vernon, Ohio, International Nutrition Laboratory, "had protein foods in which they used wheat gluten and made meat patties and various kinds of stews, sprouted the green soybeans and made a chili with them and wheat gluten." They also developed a vegetarian wiener [Veja Links] containing raw vital wheat gluten, soy flour, seasonings, and flavors. They stuffed these into wiener casings, submitted them to a smoke house and to cooking, then peeled off the casings/skins and canned the wieners. He developed these at the Mt. Vernon slaughterhouse.

"Soy milk manufacture in the U.S.A. (p. 131). In 1939 Dr. Miller returned to the United States having been so thoroughly convinced that soy milk was destined to have world-wide acceptance... His son, Harry Willis Miller, Jr. had returned preceding his father and had started a small soy milk plant in Utica, New York, where he made and bottled soy milk and also made and canned some of the protein foods out of wheat gluten for which they had developed recipes. This plant was later moved to Mt. Vernon, Ohio, after they started the soybean plant at Mt. Vernon. The plant was rather small at first as their capital was very limited. They had to build up the food plant out of his surgery earnings. As these products were mostly for export, the firm was called the International Nutrition Laboratory. It was called International because they didn't think of having any particular market for soy milk in the United States but anticipated making and packing soy powder which they could ship over to China, Japan, Korea, and other fields. Since the United States is a dairy country, they just thought they would have all kinds of

difficulty getting it introduced over in America. They gave their attention largely in the early part of the work to making some products that went over quite well, which could be sold locally such as meat patties—vegaburgers. They would take the wheat flour, wash the starch from it, and make gluten patties. They actually built up a very fine product that was netting them earnings. The earnings of that, together with Dr. Miller's medical and surgery fees, to finally get together a spray dryer which they built with the aid of the know-how assistance of the Rogers Company, who sold these spray dryers... and through this home-made outfit they daily spray dried considerable powdered soy milk and placed it on the market. They made some ice cream mixes and they shipped out in barrels to the Philippines soy milk powder and also shipped consignments of the powder to Shanghai where they had formerly introduced a soy milk to the Shanghai Settlement. Thus they kept soy milk going up until the time of the world war in 1941 which cut them off from shipping to the Orient."

In the United States they found "an interest on the part of doctors in feeding babies that were covered with various kinds of rashes which they called atopic dermatitis. Many of these babies had asthma, diarrhea, projectile vomiting, nervous irritability and were unhappy babies, all because of the allergy to cow's milk formula." Doctors began to realize that babies with allergies and other sicknesses responded well to soybean milk; the market soon increased. Eggs and milk are the chief causes of allergy, but some vegetable proteins like wheat, corn, and some legumes also cause allergic reactions in some cases. Then doctors began to ask for evidence that the milk was safe. They suggested that it be submitted to the American Medical Association [AMA]. So at once Dr. Miller contacted Dr. Earl Baxter, Professor of Pediatrics at the Ohio State University Medical School, and he agreed to conduct some feeding experiments with soy milk. These studies showed that "babies could be nourished as well on soy milk." In Tokyo, Dr. Choei Ishibashi (later president of the Japan Medical Society) also did meticulous feeding tests with infants, using the powdered soy milk Dr. Miller had sent after World War II. Over a period of many months, he compared the blood, measurement, and growth records of babies fed soy milk with those fed animal milk [cow's milk]. Then Dr. Miller took the results of the studies in Japan and at Ohio State and submitted them to the Council on Food and Nutrition of the American Medical Association. The Council has 15 members, the very best scientists on food and nutrition. "They examined the [soy] milk, examined the claims for it, looked over the research, and then gave the seal of approval which was placed on every can of soymilk thereafter."

"Now that they had this seal of approval, they went to medical conventions and canvassed the doctors; the sale of soy milk grew very rapidly." The plant began to get larger; it made great demands and there were many details to look

after. These facts and his lack of capital to carry on this work adequately made Dr. Miller realize that he must do one of two things. He must either organize a corporation, issue stock, and enlarge the company greatly, or he must dispose of the plant and give his time and attention to research.

During this time, Dr. Miller received valuable help from the U.S. Department of Agriculture [USDA]. Dr. J.A. LeClerc (Senior Chemist, Agricultural Chemical Research Division) and Mr. L.H. Bailey, who investigated the use of "soybean milk in making breads" and made the results and analyses available to Dr. Miller. "Thus they got themselves very well established in this country as having a milk for people who did get along with cow's milk."

However the secretary of the AMA told Dr. Miller that he should not claim or advertise that his soy milk was a good alternative to cow's milk for all babies, but only "for those babies who do not do well on cow's milk." However he added: "If you can take care of babies that cow's milk does not take care of, there is no reason why you could not take care of the other babies that cow's milk does agree with too." This was his diplomatic way of counseling them not to make unfriendly comparisons with cow's in a dairy country—even if those claims are valid. By following his advice, Dr. Miller was able to work well with the dairy industry without any conflicts.

The Loma Linda Food Company in California showed an interest in acquiring Dr. Miller's company in Ohio. "They had been making some soy milk in the liquid form, but they were interested in getting an Eastern branch." So in 1950 they purchased the [soy] milk plant in Mt. Vernon and have been operating since that time. This took a great burden off Dr. Miller's shoulders and left him free to do medical and nutritional research work. "It was then decided to start the International Nutrition Research Foundation and Dr. Miller was asked to be the Director of this Foundation. He placed a larger part of the purchase price of the factory into this Foundation, which would be devoted to food research only. From the day this research institution was started it has attracted a great deal of attention from all parts of the world; among those interested parties has been the World Health Organization of the United Nations. They came to the conclusion that soy milk had great possibilities in countries of low economic conditions where they could not afford to buy imported [cow's] milk," and in protein-deficient countries. They came to Mt. Vernon to investigate both the soy milk plant and the experimental research. Dr. Miller educated them on the many benefits of using protein from soybeans instead of from animals. As a result, the United Nations constructed a large soy milk plant in Djogakarta [Jogjakarta / Yogyakarta] Indonesia. It was built with the advice of Dr. S.S. De (who has headquarters in Bangkok, Thailand) and the support of the Government of Indonesia, FAO, UNICEF, and WHO.

197. Motoyama, Tekishu. 1958. Inshoku jiten [Encyclopedia of food and drink]. Tokyo: Heibonsha. 604 p. Illust. 27 cm. [Jap]

• **Summary:** Includes listings for the following soy-related terms: Aburage (deep-fried tofu pouches), aemono (Japanese-style salads), agedashi-dofu, daizu (soybeans), dengaku, fu (wheat gluten; but the term “seitan” is not listed in this book), ganmodoki (tofu burgers), gisei-dofu, gomado-fu (sesame tofu), goma-miso (sesame miso), inari-zushi, iri-dofu (scrambled tofu), kenchin-jiru, miso, namemiso, natto, oboro-dofu (soymilk curds), oden (stew), okara, shirae (tofu salad), shoyu, sukiyaki, tekka, teriyaki, tofu, tonyu (soymilk), tsuto-dofu, unohana (okara), yakimiso (broiled miso), yuba.

Separate entries, with detailed information, are given for some of the above words or terms.

198. Wong, Ella-Mei. 1958. Chinese cookery. New York, NY: Arco Publ. Co. 100 p. Illust. 23 cm. *

• **Summary:** *Foo Jook* [dried yuba sticks] and “red bean curd” are mentioned.

199. Johnson, Dale W.; Circle, Sidney J. 1959. Multipurpose quality protein offers “plus” factors. *Food Processing (Chicago)* 20(3):36-38, 53-55. March. Reprinted for Central Soya Co., Inc.

• **Summary:** Promine isolated soybean protein contains 92% protein, is free of undesirable flavor characteristics, and has no indigestible carbohydrates. Gives a list of almost 100 products in which Promine may be used, including bakery products, cereal products, confections, “dairy type products (Cheddar-type cheese, ‘cream’, all vegetable, ‘cream cheese,’ ‘cottage cheese,’ flavored drinks, fortified ‘milk,’ frozen desserts, ‘ice cream,’ margarine, sour ‘cream,’ spreads, whipped toppings, ‘whipped cream,’ ‘yogurt’), egg type products, edible coatings, macaroni type products, meat and meat type products, oriental type food products (incl. tofu and yuba), specialty foods, and animal feeds.

Note: This is the earliest English-language document seen (March 2007) that uses the term “Cheddar-type cheese” to refer to a Western-style soy cheese. Address: 1. Manager, Edible Protein Products; 2. Research Associate, Chemurgy Div., Central Soya Co., Inc.

200. Sapin, P. 1959. Le soja dans le monde [The soybean in various countries of the world]. *Bulletin Agricole du Congo Belge et du Ruanda-Urundi* 50(4):897-948. Aug. [39 ref. Fre: dut]

• **Summary:** This articles focus on soya at Yangambi in the Belgian Congo. Content: Introduction. Climatic adaptation: Comparison of the climates in Harbin (central Manchuria) and Yangambi (near the equator), photoperiodic and thermal characteristics of soybeans, comparative study of the behavior of soya at Yangambi and its main zones

of cultivation, eco-climatic chart of soya, classification of soybeans (*des sojas*) into fundamental climatic types and directives for the realization of their introduction to Yangambi. Selection: Classification of the soybean varieties, genetics, and selection. The cultivation of soya. Characteristics of the seed and its utilization: Composition of the seed, Oriental preparations based on soya (soy sprouts, soymilk, tofu, natto, Hamanatto, yuba, miso, soy sauce or shoyu), soy oil and by-products, soybean cake, use of soya in the West. A glance at soybean production. The situation in the Belgian Congo.

The author identified a number of soybean varieties adapted to different ecological zones in the tropics, which helped soybeans spread to tropical countries, especially in Africa. Address: Assistant à la Division des Plantes Vivrières de l'INÉAC, à Yangambi [Belgian Congo].

201. Taira, Harue; Ebisawa, H.; Sugimura, K.; Sakurai, Y. 1959. Daizu kakôhin no amino-san ni kansuru kenkyû. I. [Studies on amino acid contents of processed soybean. I. Total amino acids of soybean products (Abstract)]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 14. p. 95. Dec. [1 ref. Jap]

• **Summary:** Amino acid content of the following are given: Two soybean varieties, tofu, deep-fried tofu pouches (aburage), okara, dried frozen tofu, yuba, kinako, natto, and soymilk. Reprinted from *Eiyo to Shokuryo* 11(6):351 (1959). Address: 1-2. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

202. Taira, Harue; Ebisawa, Harue; Sugimura, Keiichiro; Sakurai, Yoshito. 1959. Daizu kakôhin no amino-san ni kansuru kenkyû. II. [Studies on amino acid contents of processed soybean. II. Transfer of amino acids during “tofu” processing (Abstract)]. *Shokuryo Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 14. p. 96. Dec. [1 ref. Jap]

• **Summary:** A table shows the percentage of the basic amino acids that are transferred from dry soybeans to boiled soybeans, then to fresh soy puree (gô), okara #1, okara #2 wash, soymilk, tofu, soybean boiling water, and yuba. Address: 1-2. Food Research Inst., Shiohama 1-4-12, Koto-ku, Tokyo, Japan.

203. Taira, Hirokadzu; Ebisawa, H.; Sugimura, K.; Sakurai, Y. 1959. Daizu kakô-hin no amino-san in kansuru kenkyû. I. Shoshu shihan daizu seihin no zen amino-san ganryô [Studies on amino acid content of processed soybeans. I. Total amino acids of soybean products]. *Eiyo to Shokuryo (J. of Japanese Society of Food and Nutrition)* 11(6):351-54. [12 ref. Jap; eng]

• **Summary:** The total amino acid content of 16 kinds of soybean products were determined by microbiological assay method. These included tofu, fried tofu pouches (abura-age),

okara, dried-frozen tofu, yuba, kinako (roasted full-fat soy flour), natto, and nyu-fu (fermented tofu). Address: National Food Research Inst., Tokyo.

204. Ohsawa, G. 1960 *Zen macrobiotics: The art of longevity and rejuvenation*. New York, NY: Ohsawa Foundation. Printed in Japan. 218 p. Undated. Index. 17 cm.

• **Summary:** This is the earliest known printed edition of *Zen Macrobiotics*. The cover is gray. The author is George Ohsawa. The content is basically the same as the original mimeograph edition, however it has been edited and several of the parts have been rearranged and renamed to create a Forward [sic] (p. 3-5), a Preface (p. 6-8), and Chapters 1-3 (p. 15-43). At the end are two appendixes: One, which was titled “The Case of Mr. E,” appeared at the end of the mimeograph edition. The second, which has been added is titled “The Pro-Forma Death Certificate of the American World Empire and its Gold Dynasty.”

Concerning the date of publication: Although the date is not given in or on the book, the periodical *Macrobiotic News* announced it as being available in November 1960.

Distinguishing marks of this printing: Page 3: “Forward” is misspelled. Page 7: “... hundreds of ways of cookin [sic] and eating. They are all aim [sic] to create...” Page 62: “The yellow part is most yound [sic],...”

These four errors were corrected in the next printing.

Both printings have 218 pages. However, pages 217 and 218 are different in the two books.

At least two printings were done in Japan. As of April 2011, Carl Ferré, President, George Ohsawa Macrobiotic Foundation (Chico, California) has one original of each.

Carl adds (e-mail of 30 April 2011): “Page 218 of the book you have (*Macrobiotics: The Art of Longevity and Rejuvenation*, by G. Ohsawa) appears to be exactly the same as the second Japan printing. It seems to confirm my hypothesis of a first printing in Japan in 1960, a second printing in Japan around 1962, and a third printing of the same edition in the U.S. after the 1962 Japan printing (and might even be the 1964 book referred to in *Yin Yang*). I believe the first reference in *Macrobiotic News* to a printed book is November 1960. Because editions of *Zen Macrobiotics* may have been printed at the same time as *Philosophy of Oriental Medicine*, we may need to look into that title as well in order to determine the full story.” Address: Ohsawa Foundation: 331 Riverside Dr., New York City. Secretary Aihara, 44 W. 96th St., New York City, U.S.A.

205. USDA ARS Northern Utilization Research and Development Division, Peoria, Illinois. 1960. Definitions of foreign foods of current interest (Brochure). Peoria, Illinois. 4 p. Dec. 13. 28 cm.

• **Summary:** The first section, titled “Japanese foods from soybeans” (p. 1-2) includes: Aburage, frozen tofu,

Hamanatto (Hamananatto), kinako (A form of full-fat soy flour made by grinding roasted soybeans), koji (A culture prepared by growing *Aspergillus oryzae* on cooked rice, wheat or other cereal for a few days. Serves as a source of enzymes for making miso, soy sauce, saki [saké, sake] and other fermented foods), kori tofu, miso, monosodium glutamate (a seasoning compound first isolated from soy sauce), nama-age, natto, satsumage [satsuma age], soybean milk or tonyu, soy sauce or shoyu, tofu, yaki-dofu, yuba.

The second section, titled “Indonesian fermented foods” (p. 3-4) includes: Arak, ketjap (soy sauce made with black soybeans), ontjom, ragi, sajur asin, tapé ketan (fermented glutinous rice), tapé katella (fermented arrowroot), tempeh (or témpé or témpé kedelé), tuwak. Address: Peoria, Illinois.

206. Chiang, T'ien-chiang. 1960. *Ta tou ying yang yu chia kung [Soybeans and soyfoods?]*. China. 183 p. [10+ ref. Chi] Address: China.

207. Ma, Nancy Chih. 1960. *Mrs. Ma's Chinese cookbook*. Rutland, Vermont; Tokyo, Japan: Charles E. Tuttle, Publishers. 178 p. Illust. 27 cm. [1 ref]

• **Summary:** About the author: Because she was born in a Manchurian banker's family, she never had the opportunity to prepare even a single Chinese dish while in China. Only after her arrival in Japan did she become enthusiastic about learning how to prepare Chinese dishes. She did most of her study in Hong Kong. In 1957 her first Chinese cookbook, *Chugoku no Katei Ryori [Chinese Home Cookery]* was published in Japan by Fujin no Tomo. This book is a translation of the Japanese edition.

The section “Sizes and amounts of ingredients” (p. 15-16) mentions “Bean curd,” which is called *tou fu* in Chinese and *tôfu* in Japanese.

The section “Spices and flavourings” (p. 17-18) mentions: “Bean paste (*mien chiang* in Chinese, *miso* in Japanese): Thick, syrupy paste made from soy beans and used for added flavor in such dishes as Pancake Rolls.” Monosodium glutamate (and its many names). Soy sauce.

Recipes include: Braised salmon with soy beans (soak 1 cup dry soy beans overnight, p. 49). Fish with bean curd (with 2 cakes bean curd, cut into 1-inch squares, p. 49). Chilled bean curd with shrimp (p. 56). Braised shrimp with bean curd (p. 58). Bean curd with ground beef and chili peppers (and soy sauce, p. 76). Bean curd with sliced pork and chili pepper sauce (and bean paste {*mien chiang*}, p. 85). Molded steamed bean curd (p. 90). Pressed bean curd with assorted meat (p. 112-13). Braised bean curd (p. 116).

Note 1. This is the earliest English-language document seen (May 2012) that uses the term “braised bean curd” but it does *not* refer to grilled tofu. To make the recipe: 1. Wrap 2 cakes “bean curd in cheesecloth and press gently to drain off liquid. Cut each cake into 8 square pieces. Mix flour, eggs and salt to form batter. 3. Heat 6 tablespoons oil. Coat bean

curd squares with batter and fry on both sides to light brown. Remove to plate...

Bean curd paper sheet rolls (with 3 rolls dried bean curd {*tou fu pei chüan*} in Chinese, dried yuba in Japanese, p. 118). Spiced soy beans (with 3 cups green soy beans, unshelled [edamamé], p. 126). Pancake rolls (with bean paste {*mien chiang* in Chinese, *miso* in Japanese}, p. 133. Note 2. These rolls are used in many different recipes).

The section titled “Foodstuffs” (p. 171-72) is a glossary of major Chinese ingredients, with the name of each given first in English (they are arranged in alphabetical order), then in Mandarin (Wade-Giles), then in Chinese characters. These foods include: Bean curd, *Tou fu*. Bean paste, sweet, *Tou sa* (“bean + sand.” Note 3. This appears to be azuki bean paste). Oil, soybean, *Tou yu*. Soy bean paste *Chiang*. Soy beans, green *Mou tou* [*Mao tou*]. Soy beans, dried *Ta tou*. Soy sauce *Chiang yu*. Address: [Japan].

208. Ouei, Mimie. 1960. *The art of Chinese cooking*. New York, NY: Random House. x + 242 p. Illust. by Jeanyee Wong. Index. 21 cm.

• **Summary:** The author was the daughter of a diplomat and she learned how to cook from the family’s chief cook (*Ta Shih Fu*) who always traveled with them—and from whom she learned the recipes in this book.

“There were no recorded recipes of the Chinese cuisine until the twentieth century, and even then only in Western countries. In China, cooking was done by feel and taste, and its secrets were passed on from one generation to another” (p. 4).

One chapter titled “Soy beans and bean curd” (p. 171-83) begins: “The story of the soy bean: This miracle bean is a legume...” Tells the legend of how, 2,000 years ago a party of explorers sailing up the Yangtze in a flat-bottomed boat, discovered accidentally how to sprout soybeans, when they found that some beans in a damp bag in the bottom of the boat had sprouted. “The soy bean is so nutritious it is known as the cow of China.”

The next brief section, “How to sprout the soy bean,” begins: “Mung beans are used to grow bean sprouts.” No instructions are given for soy beans! And only “bean sprouts” are called for in the following recipes. Recipes are given for: Roasted soy bean nuts (Ts’an tou). Beef with bean sprouts (Tou ya niu jo). Bean sprouts and celery. Bean sprouts and pork. Soy bean milk (homemade; To fu chiang). Soy bean curd (homemade; Tou fu). Fried bean curd (Cha tou fu). Bean curd cheese (homemade; Fu ju). Stuffed bean curd (Tou fu chen jo, with “3 squares bean curd”). Bean curd with sea bass. Bean curd with flounder. Stewed bean curd. Braised pork with bean curd. Bean curd with braised pork. Bean curd with shrimps. Bean curd with scallions. Bean curd with mushrooms. Bean curd with eggs. Bean curd soup. Mushrooms and bean curd soup. Pork with red bean curd cheese (Nan ju jo, with “2 tablespoons red bean curd cheese

in sauce {nan yu}”).

Note 1. This is the earliest English-language document seen (Oct. 2012) that contains the term *Cha tou fu*, a type of deep-fried tofu.

Also: Soy paste noodles (Cha chiang mien, with “6 tablespoons vegetable paste (Hoisin), p. 189).

The Glossary (p. 223-30) includes entries for: Beans, black [black beans] (*Hei tou*). Beans, black, fermented [fermented black beans] [fermented black soybeans] (*Tou shih*). Bean, yellow paste [yellow bean paste] (*Tou chiang*). Bean curd (*Tou fu*). Bean curd cheese (*Tou fu ju*). Bean curd cheese in sauce (*Nan ju*). Beans, red [red beans] (*Tou sha; Hung dow*; “For making sweet black bean fillings”). Bean sprouts (*Tou ya; Da dow ngah*; “Specially grown soy bean sprouts, gold in color”). Monosodium glutamate (*Wei ching; Mei ching*; “Brings out food flavors”). Soy jam (*Chu yu*; “A thick sweet and salty soy paste. Residue of soy sauce”). Soy bean skin (*Fu tsu; Foo jook*; “Creamy-colored dried bean curd skin”).

Note 2. This is the earliest English-language document seen (Nov. 2011) that uses the term “fermented black beans” to refer to fermented black soybeans.

Note 3. This is the earliest English-language document seen (July 2011) that uses the term “Soy bean skin” to refer to yuba, or to Dried yuba sticks or rolls.

Soy sauce, light (*Chiang yu; pronounced jeung yow*; Used for cooking). Soy sauce, thick [thick soy sauce] (*Chiang yu; pronounced jeung yow*; “Imported and suited for table condiment or for special cooking”). Vegetable paste (*Hai h sien chiang; pronounced hoi sin*). Address: New York City, New York.

209. Diser, Gleason M. comp. 1961. *Glossary of soybean terms. Soybean Blue Book*. p. 61-64.

• **Summary:** This is the earliest known glossary with this title in the *Soybean Blue Book*. However in the first *Blue Book* (1947, p. 17-19) there was a somewhat similar section titled “Terminology: Definitions and product descriptions for the soybean industry.”

The following terms are defined in this glossary: Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical pressing, hydraulic pressing), soybean oil, crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, soybean hay meal, soybean flakes, 44% protein soybean oil meal, dehulled soybean flakes, 50% protein solvent extracted soybean oil meal, soybean proteins, soy flour, soy grits, soybean oil meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein,

toasting. Oriental soy foods: Soy sauce (shoyu), soy milk, miso, frozen tofu, aburaage, kinako, namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts). Address: Archer-Daniels-Midland Co., Minneapolis, Minnesota.

210. Smith, Allan K.; Wolf, Walter J. 1961. Food uses and properties of soybean protein. I. Food uses. *Food Technology* 15(5):4-6, 8, 10. May. [34 ref]

• **Summary:** Contents: Summary. Introduction. Commercial soybean protein fractions. Soybean foods: Soybean varieties (garden varieties vs. field varieties, main differences between them, U.S. soybean breeding program). Trends in protein requirements (worldwide protein shortage). Soybeans and fractions used in food: Whole soybeans, defatted soybean meal, isolated proteins, protein concentrate (called “protein concentrate 70” in the summary), Gelsoy.

Whole soybeans may be baked or boiled, or used to make sprouts, fresh or dried tofu, vegetable milk (or “soybean milk”), yuba, and many fermented food products, including “miso or soy paste, natto, hamanatto, shoyu (soy sauce), tempeh, and some less important foods.”

“Protein concentrate: Extraction of dehulled and defatted meal with dilute acid (pH 4.5) removes soluble sugars, nonprotein nitrogen, and other low-molecular weight components and a small amount of protein. The flavors are also mostly removed in the extract or in drying. The dried concentrate contains about 70% protein unless soybeans containing above-average protein are used.

“This product, having a manufacturing cost between that of soy flour and isolated protein, has been introduced recently into the food industry. This protein concentrate is a combination of the acid-precipitated protein plus the residue normally obtained in isolating the acid-precipitated protein... A protein concentrate can also be made by extraction of SOM [soybean oil meal] with about 70% ethanol at 50°C or higher. This type of product is finding its place in the food industry.”

Note: This is the earliest English-language document seen (Dec. 2005) that uses the term “protein concentrate 70” or the term “protein concentrate” to refer to a product containing 70% protein on a dry-weight basis. Address: NRRL, Peoria, Illinois.

211. Smith, Allan K. 1961. Oriental methods of using soybeans as food. With special attention to fermented products and notes on Oriental farming practices. *USDA Agricultural Research Service*. ARS-71-17. 65 p. July. Illust. 27 cm.

• **Summary:** Contents: Part I: China. Introduction. Farming conditions in China. Oilseed production. Soy sauce in China. Sweet flour paste—Tien mien chang [chiang]. Soybean or vegetable milk (incl. Willis Miller and the Henningsen Produce Co. in Shanghai). Yuba. Soybean curd or tofu. Soybean cheese [fermented tofu]: Chee-fan (“cheese” +

“small cube”), tsüe-fan (“drunken cheese”), hon-fan (“red cheese”). Fen-T’iao from mung beans. Fermented soybeans [fermented black soybeans]. Vinegar fermentation process.

Note: This is the earliest document seen (Oct. 2011) that uses the term “tsüe-fan” (“drunken cheese”) to refer to a type fermented tofu.

Part II. China—Chinese Institutions. Henry Lester Institute (in Shanghai; Dr. Bernard Read). Academia Sinica (headquarters in Nanking). China Vegetable Oil Corporation (CVOC, Shanghai). The China Oils and Fat Industries Ltd. (Shanghai). National Bureau of Industrial Research. Catholic University (Fu Jen, at Peiping). Yen Ching University (Peiping). Agriculture Experiment Station (Peiping).

Part III: Japan. Introduction. Production of miso in Japan. Soy sauce in Japan. Trends in soy sauce production. Part IV: With Raymond E. Culbertson. Korea. Introduction. Breeding work. Soybean varieties. Climatic relations. Soils of Korea. Topography. Land use. Cultural practices. Marketing. Soybeans as foodstuff. Soy sauce. Acknowledgment.

Page 19 states: “The China National Government has taken an active interest in soybean milk for use by its army. Mr. Willis Miller, with offices and business connections with the Henningsen Produce Company in the Dollar Building (7th Floor) at 51 Canton Road, Shanghai, had just completed, at the time of my visit, the building of a soybean milk plant for the Chinese Government. The process is patterned after that of the International Nutritional Laboratories at Mt. Vernon, Ohio, for making a powdered or spray-dried milk. Mr. Miller also was supervising the installation of a vegetable canning plant for the same purpose.”

The text of this bulletin was previously published, serially, with slight revisions, in *Soybean Digest*, from Feb. to June 1949. Address: Northern Utilization Research and Development Div., Peoria, Illinois.

212. Tung, Ta-Cheng; Huang, P.-C.; Li, H.-C.; Chen, H.-L. 1961. [Composition of foods used in Taiwan]. *J. of the Formosan Medical Association* 60(11):973-1005. Nov. 28. [27 ref. Chi; eng]

• **Summary:** Gives the nutritional composition (food calories, moisture, protein, fat, carbohydrate, fiber, ash, calcium, phosphorus, iron, vitamin A, thiamine, riboflavin, niacin, and ascorbic acid) of 384 foods commonly used in Taiwan. In the section on “Legumes, seeds, and nuts,” the following soy products are included: Black bean (hei tou, black soybean; 37.1% protein, 15.2% fat), miso; soy bean (huang tou); soy bean curd (toufu); soy bean curd cake [pressed tofu] (toufu kan); soy bean curd cake, spiced (wu-hsiang toufu kan); soy bean curd cake, strip; soy bean curd, clot (toupì, yuba); soy bean curd, fermented (fermented tofu); soy bean curd, fried (yu toufu); soy bean curd, pickled (furu, hu-zu); soy bean, fermented (tou chi [fermented black soybeans]); soy bean milk (tou nai), soy bean extracted residue (okara). Address:

1-3. Dep. of Biochemistry, College of Medicine, National Taiwan Univ., Taipei, Taiwan, China; 4. Taiwan Provincial Hygienic Lab.

213. *Union Research Service*. 1961. Mentions “Special forms printed” and “sweet dried bean rolls” on p. 187. 22:187. *

• **Summary:** “Special forms printed by ‘native product companies’ have to be filled out and pasted onto the particles. There are children’s cotton-padded jackets’, ‘old clothes’, ‘vermicellis’, ‘noodle-cakes’, ‘sugar-slabs’, ‘sweet dried bean rolls’, ‘edible oil’, etc. The destinations of the parcels include...”

214. Wong, Ella-Mei. 1961. *Chinese cookery*. London: Angus and Robertson; New York, NY: Arco Publ. Co. [xi] + 100 p. Illust. Index. 23 cm. *

• **Summary:** *Foo Jook* [dried yuba sticks] and “red bean curd” are mentioned.

215. Wong, H.K. ed. 1961. *San Francisco Chinatown on parade in picture and story*. San Francisco, California; Chinese Chamber of Commerce of San Francisco. 111 p. See p. 70. Illust. Map. 24 cm.

• **Summary:** This book represents an excellent, interesting effort to introduce and interpret San Francisco Chinatown, Chinese culture, tradition, and history, and Chinese people themselves to non-Chinese.

The book appears in 1961. China had been a strong and crucial American ally in World War II and Chinese and Chinese culture were starting to be given the respect and equality that that had so long been denied. Yet landmark the Immigration Act of 3 Oct. 1965 had not yet been passed.

The page titled “New Year foods and flowers,” by Chingwah Lee states (p. 70) the Grant Avenue, in the heart of Chinatown, is brightened by numerous flower sellers and bustling as everyone exchanges the greeting “Gung Hay Fat Choy.”

“On New Year’s eve many Chinese still observe the traditional ritual of prayer to heaven and earth for their loved ones and in memory of their ancestors. After the ceremony, a few minutes past midnight, the family partakes of a simple meal of Lo-han Tsai [Monk’s Food], an austere concoction of vegetables which is eaten by monks all year. Nine basic ingredients are needed for this dish: Sai fun (long rice), Gum Choy (banana flower), Fat Choy (a species of nutritious seaweed), Dry Thread bamboo Shoot, Foo Jook (dried bean curd [dried yuba sticks]), Won Yee (delicate Chinese mushroom), Chinese mushrooms, dried oysters and fresh bean cake [fresh tofu].

“The Seventh day of the New Year, known as the Day of Man, is considered to be everyone’s birthday.”

The book is composed of many sections, each by a different Chinese author. When the section is less than 2 full pages long, the remaining space is filled with advertisements.

The first five sections are: “Introduction to Chinatown.” “Who are the Chinese?” “It started on Grant Avenue.” “Changing economic tides in Chinatown.” Chinese language.”

A few interesting facts: Portsmouth Square, a few steps off Grant Avenue, is the birthplace of San Francisco (p. 22). Photos show the square in 1857 and 1960 (before restoration).

The classic Chinese dress, a sheath dress with a high collar and a slit skirt, is called a *cheong-sam*. It is concealing yet revealing (p. 26).

“The Chinese people as a race are quite religious.” “With forbearance and open-mindedness, the Chinese accepted other imported religions [such as Christianity] without struggle. Throughout Chinese history there has been no religious war—persecution and bigotry on account of religion were unheard of” (p. 46).

“The delectable moon cake.” “There are five basic types of filling: sweetened black bean (*dou sah*), lotus seed, fruit with meat and nuts, yellow bean (*dou yung*), and winter melon (*doong yung*)” (p. 81).

“Fortune cookies: Chinatown’s five fortune cookie factories produce a daily average of 200,000 fortune cookies, which are shipped to restaurants and groceries in the West. 12 million of these crispy cakes a year is the record of the family-run bakery on Pacific Avenue” (p. 96).

Note: Concerning the filling for Moon Cakes. Letter (e-mail) from H.T. Huang, expert on Chinese foods. 2010. Dec. 8. “*Dou sah* is usually ground cooked soybean; obviously it is sweetened with sugar. As for *dou yung*, I would assume it is ground yellow soybean, but I don’t really know.” Address: 730 Sacramento St., San Francisco, California.

216. Ohsawa, G. 1962? *Zen macrobiotics: The art of longevity and rejuvenation*. New York, NY: Ohsawa Foundation. Printed in Japan. 218 p. Undated. Index. 17 cm.

• **Summary:** This is the second printed edition of *Zen Macrobiotics*. The cover is gray. The author is George Ohsawa. The content is basically the same as the first printed edition, except that (1) Typographical errors on pages 3, 7, and 62 have been corrected; (2) A folded, undated insert, titled “Dictionary of Macrobiotic Terms” was found in this printing between pages 216 and 217 (for details, see below). The insert is 17.0 cm / 6.69 inches high by 30.0 cm / 11.81 inches wide. Folded crosswise into thirds, it fits perfectly into these books; (3) The information on pages 217 and 218 is different and updated. The following appears on page 218: Brazil (Casa Longavida, Sao Paulo), Sweden (Miss Ilse Clausnitzer, Stockholm), U.S.A. (Ohsawa Foundation, 61, W. 56th St., New York; Ohsawa Foundation, P.O. Box 238, Chico, California; Chico-San, Inc., 64, 5th Ave., Chico, California; Musubi, 61, W. 56th St., New York—Macrobiotic Restaurant).

Concerning the date of publication: Although the date is

not given in or on the book, Carl Ferré (who owns an original of this 2nd Japan printing) notes (8 May 2011): “Chico-San is listed. This means it was after Nov. 1961 at the earliest and most likely very early in 1962. I say this because the address given is not the Mangrove Ave. one.” “There is no ‘Printed in Japan’ in this book either but it is so similar to the earlier one that it has to be printed in Japan. It is also undated. It is not ‘revised’...”

In the 3-column “Dictionary of Macrobiotic Terms” (insert), for each entry there is the word or term, its definition, and one page number on which that word appears. Because the page numbers refer to pages in this edition, the dictionary was probably published at about the same time as this book—or at the time of the previous edition in 1960. The following is a selection from the Dictionary, with pages given for soy-related words: Aduki: Japanese red bean. Ae: Dressing (vegetables) with soy bean paste [miso], orange juice, etc. (p. 96). Aemono: Japanese salad (p. 88). Age: Fried bean curd. An: Red [aduki] bean jam. Ankake: Pouring [aduki] jam. Bancha: Coarse green roasted a few minutes. Bansho: Bancha with soy sauce (p. 152). Daikon: Long, white Japanese radish. Dango: A dumpling. Dentie: Head of eggplant salted, kept, dried and then burned into a powder. Egoma: A type of sesame seed—most yang. Gobo: Burdock. Gomashio: Sesame salt. Goma Tofu: Sesame curds (p. 87). Goziru [gōjiru, gojiru]: Soup made of grated soy beans and vegetables (“Ziru” means soup in Japanese) (p. 84). Gyoza: A Chinese food—vegetable mixture wrapped in pieces of thin dough. Hako: A mold or box in Japanese. Haru Tea: A very yang herb beverage. Hiziki [Hijiki]: Spindle-shaped, small, black seaweed. Jinenjo: A wild potato or a Japanese yam. Karinto: A kind of deep-fried cookie. Kasha: Russian buckwheat grain preparation. Kayu: Thin rice preparation [porridge]. Kinpira: Burdock and carrots preparation. Kitune [Kitsune]: Boiled rice or noodles cooked with thin fried bean curds [*agē*] (p. 68). Kobu (or Konbu): A (sea) tangle coming from deep ocean waters. Kobu Maki: Kobu stuffed with vegetables. Koi-Koku: A special carp and miso soup (p. 109). Kokkoh: A creamed blended cereal. Konnyaku: A paste made from flour of this Japanese tuberose [tuber]. Kuzu: Powdered plant-gelatine obtained from kuzu plant. M.U. tea: A tea made of 15 blended herb’s roots. Matuba [Matsuba]: Pine leaves. Miso: Soy bean paste (p. 65). Miso Ae: Boiled vegetables served with miso cream (p. 96). Misoni: Carrots and onions cooked with miso (p. 129). Mochigome: Glutinous rice. Moti [Mochi]: Rice cake. Musubi: A knot. Nisime [Nishime]: Same as Nituke. Nituke [Nitsuke]: Vegetables sauteed. Nori: Laver or sloke—a kind of seaweed. Ogura: Aduki (red bean) preparation. Omedato: Dessert made of roasted rice and red beans. Originally Japanese word for congratulation. Oshitashi: Boiled vegetables, served with Tamari (p. 97). Ransho: Egg—Tamari preparation. Renkon: Lotus root. Sashimi: Sliced raw fish. Sarashina: A kind of buckwheat dish. Originally it means

the name of a place famous for producing good buckwheat. Siitake [Shiitake]: A kind of Japanese mushroom. Sio [Shio]: Salt. Sio Kobu [Shio Kombu]: A kobu (seaweed) preparation. Soba: Buckwheat. Sukiyaki: Fish (or beef) and vegetables cooked a la japonaise. Sushi: A rice preparation. Syo-ban [Sho-ban]: Coarse green tea with soy sauce (p. 101). Tahini: Sesame butter. Tai: A red snapper [fish]. Tamari: Traditional soy sauce (p. 62). Tekka: A preparation of minced lotus root, burdock root, carrot, ginger, and miso (p. 96). Tempura: Japanese process of deep-frying in oil. Tofu: White soya bean cheese (p. 134). Tororo: Wild potato [wild yam]. Udon: Wheat vermicelli or noodle or macaroni. Umeboshi: Japanese plum salted and conserved for years. Ume-sho-ban: Medicinal beverage [containing umeboshi and shoyu] (p. 156). Yannoh (Ohsawa coffee): A cereal coffee made of roasted rice, wheat, aduki, chick peas and chicory. Yomogi: Mugwort (or wormwood). Yuba: Soybean protein prepared into transparent paper-like sheets (p. 77). Zosui: A rice preparation. Zaru: A bamboo basket. Address: Ohsawa Foundation: 331 Riverside Dr., New York City. Secretary Aihara, 44 W. 96th St., New York City, U.S.A.

217. Kan, Johnny; Leong, Charles L. 1963. Eight immortal flavors. Berkeley, California: Howell-North Books. 246 p. Illust. (by Jake Lee). Index. 24 cm. 2nd edition 1980.

• **Summary:** An interesting book, by a master cook and an excellent researcher and writer. Full of new and useful information.

From the publisher’s description: “This is the first cookbook—written by a Chinese-American to emanate from San Francisco’s Chinatown—the mecca for both Oriental and Occidental gourmets. It is the only cookbook dealing strictly with Cantonese cookery.” The Foreword, written by the famous food writer James Beard (of New York City) in Oct. 1963. notes that he grew up in Portland, Oregon, and was a close childhood friend of the Kan family and of their cousin Johnny Kan, who came to visit from San Francisco’s Chinatown [in California]—a “city within a city.” Kan’s mother was an excellent and ingenious cook. Beard considers Kan’s Restaurant “the outstanding Chinese restaurant today.”

The “Eight Immortal Flavors” of Chinese cookery are *Hom*—salty. *Tom*—bland (like rice). *Teem*—sweet. *Seen*—sour. *Foo*—bitter. *Lot*—hot (as in chili peppers). *Heong*—fragrant (smell more than taste). *Gum*—golden (as in citrus peel or kumquat). They are always referred to in this order. Note: In Western cookery there are only four traditional flavors—sweet, sour, salty, and bitter. The Japanese add a 5th, “umami.”

The chefs and cuisine of Kwangchow (the ancient name for Canton, now spelled Guangzhou) are considered the finest in all of China (p. 28).

The chapter titled “Native condiments, sauces, and ingredients” (p. 43-55) includes: Bean curd (*Dow Fu*): “One of the most useful of Chinese ingredients,” it is usually

pressed into ½-inch by 3-inch squares. Bland in flavor, it is a great mixer for highly flavored foods. “It is even delicious in its fresh state with spicy condiments and is known as ‘the meat without bones.’”

Black [soy] bean, Dried (*Woo Dow*).

“Soybean skin (*Foo Jook*): Dried skin of soybean milk. Sold in packages, it is flat and thin, with a creamy-glaze appearance. Soak it before using in soups, or in smother-cooking recipes.” It has an enjoyable chewy texture and slightly nut-like flavor.

“Soybean skin, sweet (*Teem Jook*): Similar but thicker than *Foo Jook*, its taste is slightly sweeter.”

Illustrations (p. 46-47) show: Soy bean skin (foo jook). Bean curd (dow foo).

Condiments (p. 51-54)—“Black beans, salted (*Dow see*): Cured, fermented small black beans... Should be soaked briefly and washed before use. A common use is to mash beans with garlic, creating a seasoning popular for both seafood and meats.”

Monosodium glutamate (*Mei Jing*): This flavor accent powder had its origin centuries ago in old China. “A charming story, which we like to believe, involved a contest in which several monks with gourmet tastes competed with each other to produce the most delicious batch of *Loh Han Jai*, the standard monks’ food consisting of a variety of various vegetarian ingredients... The winner had added one precious secret ingredient the others did not have—a powdered dried seaweed [*konbu, Laminaria japonica*] which was later discovered to be the first crude source of monosodium glutamate. It was not until 1908 that Dr. Kikunae Ikeda, the great Japanese scientist successfully extracted Glutamic Acid from edible seaweed and from it crystallized monosodium glutamate and marketed it under the name of *Aji-no-Moto*. Then in 1921 Chinese scientist Poo-Nien Wu of Shanghai developed a process for extracting monosodium glutamate from wheat protein and was marketing his discovery, Ve-Tsin, in China, Singapore, Malaya, and the Philippines to the amount of 350,000 pounds a year. Other raw material sources are corn, soybean protein, and desugared beet molasses.

Sauces (p. 54-55)—Bean sauce (*Min See Jeung*): A brown salty bean paste. Oyster sauce (*Ho Yow*). Red seasoning sauce (*Hoy Sin Jeung [Hoisin Sauce]*): A thick red sauce that contains soybeans as an ingredient. “A table condiment for Peking duck.”

Spiced red bean curd (*Nom Yee*): “A variation of bean cake fermented.” It has a slightly harder consistency, a brick-red color, and a pungent, aromatic flavor.

Soy sauce (*See Yow*): “For Chinese cooking, soy sauce is the great all-purpose and most indispensable of all sauce.” There are many grades and types. “For the ‘red cooking’ method, ingredients are incarnadined by the dark sauce. It may be used as a table dip, by itself, or mixed with mustard.” Unlike salt, it has “the taste of a beef essence.” It is made

by the fermentation of cooked soybeans, roasted wheat, a yeast mold and salt. The best grades of Chinese soy sauce are still made by the old-fashioned, aged, natural fermentation process, rather than by the quickly made chemical hydrolysis method [HVP soy sauce]. The type known as *Sang Chau*, light and color and density, is the premier kind for flavoring and dipping.” But unless you ask for it by name, “you will get the darker soy sauce or *See Yow*. There is no definitive record of the origin of soy sauce. “Reference to the sauce has been made as early as the Chou Dynasty [1045-256 BC], some 200 years before Christ!... Undoubtedly since its very origin soy sauce has been made in the home or as a village industry. As a manufactured product it started in 1688. With its long condimentary life, no wonder that, to the Chinese, soy sauce is the Sauce of Life.”

Note: This is the earliest English-language document seen (April 2012) that uses the term “*Sang Chau*” to refer to light Cantonese soy sauce.”

Vegetables (p. 81-87): Bean sprouts (*Ngah Choy*): This common and inexpensive little vegetable is overused in some Chinese restaurants as a “filler.” The name “literally means ‘vegetable for the teeth,’ implying a crunchy sensation. Bean sprouts are tiny shoots which grow from the soy bean. They are one of the trio of basic Chinese foodstuffs—bean sprouts, bean curd and soy sauce—derived from the wonder bean. The sprouts average two inches long, are opaque white and the bean head is yellow... Another variety of bean sprouts, germinated from a larger type of bean, is the *Dow Ngah*, or Big Bean Sprout. This variety grows a little longer, with a larger golden head, and the sprout is crunchier, but has a more raw ‘beany’ flavor. This variety is not used in Chinese restaurants.”

Soy-related recipes: Spinach with foo yee sauce (Baw choy foo yee, with “2 preserved bean cakes (*Foo Yee*) mashed with 2 teaspoons juice from jar,” p. 89). Shows how “any commonplace vegetable can be turned into an epicurean dish by simply adding preserved bean cake” [fermented tofu] and a touch of garlic. Try it “and you will discover why *Foo Yee* is often referred to as the miracle ingredient among Chinese condiments.”

Bean cake sauteed with meat (*Dow foo yuke*, with “8 bean cakes (*Dow foo*). Slice each bean cake into 6 pieces,” p. 99). Fresh asparagus chicken with black bean sauce (*Lei soon gai kow*, with “1 full tablespoon mashed fermented black beans (*Dow see*), combined with 1 clove mashed garlic and 1 tablespoon soy sauce, with a dash of monosodium glutamate,” p. 100).

Note: This is the earliest document seen (Nov. 2011) that uses the term “black bean sauce” and clearly shows how to make it in the kitchen as part of preparing the dish.

Chinese cabbage with foo yee sauce (*Siew choy foo yee*, with “2 fermented bean cakes (*Foo Yee*) with 2 teaspoons juice from the jar,” p. 107). Mustard greens with foo yee sauce (*Gai choy chow foo yee*, with “2 fermented bean cakes

(*Foo Yee*) mashed with 2 teaspoons juice from the jar,” and 1 teaspoon soy sauce, p. 109).

Steamed salmon with black bean sauce (Dow see jing sah-mon yee, with “2 tablespoons fermented Black Beans (*Dow See*), crushed to paste,” p. 131). Prawns with black bean sauce (See jup hah kow, with “2 tablespoons Black Bean Paste (*Dow see*), p. 133). Steamed fish with black bean sauce (Dow see seen gee jing yee, with “2 tablespoons fermented Black Beans (*Dow see*), crushed to a paste,” p. 141).

Dried oysters with bean curd skim (Ho see munn foo jook, with “6 sheets Bean Curd Skim (*Foo jook*) pre-soaked in cold water for 2 hours. Drain thoroughly. Cut in 2 to 3-inch pieces.” p. 143).

Note: This is the earliest document seen (Dec. 2010) that uses the term “Bean Curd Skim” to refer to dried yuba sticks. Continued. Address: 1. Chef, Chinatown; 2. Historian of Chinese life in America.

218. Keys, John D. 1963. Food for the emperor: recipes of Imperial China with a dictionary of Chinese cuisine. Los Angeles, California: Ward Ritchie Press. xxii + 121 p. Introduction by Kee Joon. Illust. Index. 18 x 18 cm.

• **Summary:** See the edition published this same year by Gramercy Publishing Co., New York, NY. Address: San Francisco.

219. Keys, John D. 1963. Food for the emperor: recipes of Imperial China with a dictionary of Chinese cuisine. New York, NY: Gramercy Publishing Co. xxii + 121 p. Introduction by Kee Joon. Illust. Index. 18 x 17 cm.

• **Summary:** This book is about the Mandarin or Peking school of Chinese cooking. Contents: Introduction, by Kee Joon. Food for the emperor (recipes; for each recipe is given the name written vertically in large Chinese characters, the Cantonese transliteration of that name, and the English translation of that name. On some left-hand pages are short translations from old books related to food). A dictionary of Chinese cuisine (arranged alphabetically by English name of food). Index to the recipes (by recipe type, and within that by English recipe name).

Almost all recipes in this book are based on meat, fish, or poultry. There are no soy-related recipes in this part of the book, although many recipes call for “soya sauce.”

The Dictionary includes: Bean curd (dou foo, with 2 recipes). Bean curd cheese [fermented tofu] (the two varieties are white bean curd cheese {foo yoo} and red bean curd cheese {narm yoo}). Bean curd, dried (tim jook [sweet dried yuba; also spelled tiem jook]).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term *tim jook* to refer to sweet dried yuba.

Bean filling, sweet (*doe sha*, made from black soya beans, sugar, and a little oil. “This paste is available in

Chinese bakeries, and is used in New Year’s cakes and other sweet pastries”).

Note: This is the earliest document seen (March 2011) that uses the term “Bean filling, sweet” to refer to a sweet paste, made of black soybeans, that is used as a filling like for cakes, like sweet red bean paste [azuki bean paste].

Bean sauce—see Soya bean condiment. Black bean sauce—see Soya beans, black fermented. Black beans—see Soya beans, black fermented. Brown bean sauce—see Soya bean condiment. Cheese, red—see Bean curd cheese. Fermented black beans—see Soya beans, black fermented. Red bean sauce (sharng she jerng; a popular canned cooking sauce consisting of mashed red soya {or often azuki} beans). Red cheese—see Bean curd cheese. Seaweed (purple laver, hair seaweed). Sesame oil (jee ma yo). Sesame seeds (jee ma).

Soya bean condiment (yewn she jerng. “Variously called soy jam and brown bean sauce, this condiment is prepared from the residue left when making soya sauce. Wheat is sometimes added to the condiment, which is fermented and then called Meen She Jerng. These condiments are most commonly use in cooking fowl; also in meat dishes).

Soya beans, fermented black (doe she. “Tiny fermented beans which are washed, crushed, and used to add a pleasant spiciness to dishes. They are often used in fish dishes to alleviate any strong smell. It is a prime ingredient in Cantonese lobster”).

Note: “Black bean sauce” is not explained here, as expected.

Soy jam—see Soya bean condiment. Soya sauce. “The general term in Cantonese for soya sauce is She Yo. There are three main subdivisions: (1) Shang cho: Light brown, fine taste, light color. Used in cooking delicate foods were a heavy soya flavor is not desired. (2) Cho yo: Dark and thick, containing molasses, yet not too strong a taste. Used mostly in restaurants. (3) Jew yo: Most suitable for general cooking purposes and for use at the table. Also: Japanese soya sauce, which is prepared with the addition of malt [koji], is much respected by the Chinese.”

Sweet-sour sauce: The recipe, which is given, contains 1 teaspoon soya sauce.

Sweet vegetable sauce (hoi seen jerg [hoisin sauce]). “A canned red sauce prepared from soya beans, red rice, and garlic. It is used in preparing Peking Roast Duck, fish and shellfish dishes.”

“Tomato Catsup: Tomato catsup originated in China, as can be seen from the pronunciation of the Cantonese (Kair = tomato; Jup = sauce). Used in some braised dishes such as Shrimp Braised in Tomato Sauce.” Address: San Francisco.

220. André, Émile. 1964. Sur l’utilisation des graines de soja dans l’alimentation humaine par les populations d’Extrême-Orient [On the dietary utilization of soya beans in the Far East]. *Oleagineux* 19(1):37-39. Jan. English-language

summary p. XXVIII. [1 ref. Fre; eng]

• **Summary:** The author gives the results of his research on lipoxidase, initially inspired in early 1931 by a young Chinese student M. Kiawo Hou. He also discusses soymilk (lait de soja or téou-jou), tofu (fromage de soja or téou-fou), yuba (téou-fi), soy oil (huile de soja), soy sauce (tsing yeou [sic, tsiang yeou?]), miso (miso de soja), and soy sprouts (germes de soja). The residue from making tofu and soymilk (okara) is fed to poultry and pigs. Soya oil is made by an archaic process that is very inefficient. “The residue, not perfectly separated from the oil, is consumed by the poorer classes.” Address: France.

221. Japan Dietetic Assoc. Corp. (JDAC). 1964. [Standard composition of Japanese foods]. Tokyo: Daiichi Shuppan K.K. 124 p. [Jap; Eng]

• **Summary:** The basic source of information on the nutritional composition of all Japanese foods.

222. Ohsawa, G. 1964? *Macrobiotics: The art of longevity and rejuvenation*. New York, Paris, Brussel [sic], Tokyo: Ohsawa Foundation. Printed in the U.S.A. by Eastern Technical Publications (Boston & New York). 218 p. Undated. Index. 17 cm.

• **Summary:** This is the earliest known American printing of “Zen Macrobiotics.” The word “Zen” was removed from the title at Michio Kushi’s suggestion. The cover is yellowish tan. The author is George Ohsawa.

Contents: Foreword: Two ways to happiness through health. Preface: Health to peace. Books by the same author (7 in French, 9 in Japanese, one in English, plus 4 periodicals). Table of contents. 1. Macrobiotics and Oriental medicine. Why I have written this book. What is the philosophy of the Far East? 2. What is my therapy? Unhappiness, illness, crime. Incurable disease. Three categories of cure. What we must not cure. Satori. Courage, honesty justice. Tolerance. 3. The six main conditions of health and happiness. 4. Nothing shall be impossible to you. You should have infinite freedom. You must be your own doctor. 5. Ohsawa’s macrobiotic cuisine. 6. Principal foods: Rice, buckwheat, udon etc., millet, raw rice etc. (p. 62-71, with recipes). 7. Secondary foods (p. 72-103, with recipes): Nituke, soup (lotus root ankake, kuzu gruel, cracknel yuba), pie, gyoza (piroshiki), chapati, jinenjo (wild potato, tororo). Egyptian beans (chick peas, *pois chiche*), beans (boiled soy beans with miso, gomoku beans, goziru [gojiru] soup, aduki beans), corn, aduki (ogura vermicelli), goma-tohu [sesame tofu], aemono (salads), varieties (chou farci, buckwheat crepe), wild vegetables, seaweeds (shi kobu [shio kombu], kobu maki, fried kobu, musubi kobu, kobu soup, matsuba kobu, salmon head kobu-maki, hiziki with lotus root, hiziki nitsuke, hiziki with “age,” hiziki and soyabean, gomoku hiziki, hiziki rice), wild plants (dandelion leaves or root, aozu {wild spinach}, fuki), miso and tamari preparation (sauce miso,

miso cream, muso [miso with tahini and orange peel], miso soup, carrot and onion au miso, vegetable au miso, oden au miso, buckwheat dango au miso, miso ae, tekka no. 1 and 2), syoyu [shoyu] (sakura rice, sauce au shoyu, sauce au sesame, bouillon au shoyu, ositashi [ohitashi], oatmeal cream, potage oatmeal, sauce bechamel a la sauce shoyu, mayonnaise a la sauce shoyu, sauce Lyonnaise; “Shoyu diluted with a little water is very good for Sasimi [Sashimi = raw fish] and fried oyster, tempura, fish Sukiyaki, tofu {vegetable cheese of soya beans}, etc.”), beverages (rice tea, wheat tea, dandelion coffee, Ohsawa Coffee {Yannoh; incl. roasted and ground rice, wheat, aduki, chick peas, and chicory}, Kokkoh {incl. roasted rice, glutinous rice, oatmeal, soya beans, and sesame seeds}, Mu tea, syo-ban {coarse green tea with soy sauce}, kuzu [cream, with shoyu] {“A good drink for everyone”}, aduki juice, radish [daikon] drink no. 1 and 2, ransyo {one beaten egg + 50% of traditional Ohsawa shoyu}, soba tea, umeboshi juice, ume-syo-kuzu, special rice cream).

8. Special dishes. Desserts. 9. Yin and Yang. 10. Macrobiotic suggestions for various symptoms of disease (p. 131-36, with recipes): General suggestions (by disease), macrobiotic external treatment (tofu plaster, soya bean plaster, Dentie). 11. Specific curative dietary suggestions: Examples of diseases and their macrobiotic treatments. 12. Kokkoh: Macrobiotic food for baby. 13. On cooking. Salt. Folk medicine. Your history. Appendix: The case of Mr. E. (Cure in 10 hours). “Pro-forma death certificate of the American World Empire and its Gold Dynasty.”

Ohsawa centers and friends (p. 217-18): England (Trustin Foods, London; Mrs. R. Takagi, London), France (Centre Ignoramus, Longue Vie, Guenmai [Genmai = brown rice], Yamato, Ohsawa-France; all in Paris). Germany (Miss M. Arnoldi, Heidelberg; Dr. P. Martin, Munich; Dr. Henning, Hamburg), Italy (Miss H. Onoda, Rome; Mrs. Baccolis, Rome), Japan (Nippon Centre Ignoramus, 8 Kasumi-cho, Minato-ku, Tokyo; Shinsekai, Osaka), Brazil (Casa Longavida, Sao Paulo), Sweden (Miss Ilse Clausnitzer, Stockholm), U.S.A. (Ohsawa Foundation, 61, W. 56th St., New York; Ohsawa Foundation, P.O. Box 238, Chico, California; Chico-San, Inc., 64, 5th Ave., Chico, California; Musubi, 61, W. 56th St., New York—Macrobiotic Restaurant).

This book is undated, but it contains clues as to when it was published. On page 190 is reference to an article in *Time* magazine dated 7 March 1960 about the sad state of health in the United States. Then on page 189, Ohsawa states: “Upon my arrival in the United States last November, I began my lectures on the philosophy and medicine of the Orient. I gave some in Los Angeles and San Francisco [California], but mostly in New York institutes and schools such as the Universalist Church, The New School for Social Research, Columbia University, New York City College, and the American Buddhist Academy. I have postponed my departure twice. But I am very happy as I have confirmed my assumption: marriage between paradoxical philosophy

of the Orient and the materialistic techniques of precision of American science, which must be realized for the infinite freedom of Man and for world peace” (p. 189).

Concerning the date of publication, which is not given in or on the book. One guess is about 1964, because when you do a printing of a book, you want to print enough to last for at least two years. This $1962 + 2 = 1964$. A pretty weak reason! Carl Ferré (6 and 8 May 2011) states: I’ve done enough printing to know that the book printed in the USA uses the same plates as the second printing in Japan except for two changes. They added “Printed in the USA by...” (in a different type face) to the back side of the first page, which is blank; and, they whited out “Zen” and the smaller “Macrobiotics” on the cover and title page and replaced both with one word: “Macrobiotics” (again, in a different type face). The rest of the book appears to be exactly the same as the second printing from Japan.”

“My thinking is that 1964 is a pretty good guess because I believe it may have been arranged by the East Coast Group—thus, the word ‘Zen’ was off the title and it was printed by a printer in Boston and New York. This would be about the time Michio Kushi was getting settled in Massachusetts.”

Note 1. These lines almost certainly describe Ohsawa’s first visit to the United States. He arrived in November 1959 and stayed well into 1960.

Note 2. All recipes in this book are numbered, from No. 1 (Unpolished rice, p. 162) to No. 816 (Rice plaster, p. 136). The recipe numbers are identical to those published in the mimeograph edition of *Zen Macrobiotics* (also titled *Macrobiotics—The Biological and Physiological Foundation of Zen Buddhism*), published in early 1960.

Note 3. The contents of this book is very similar to that of the earliest published edition of *Zen Macrobiotics*, which was printed in Japan and was 218 pages long.

223. Fukushima, D. 1965. Internal structure of soybean protein molecule (11S protein) in aqueous solution. *J. of Biochemistry (Tokyo)* 57(6):822. June. [6 ref]

• **Summary:** Although many investigations of soybean proteins have been conducted, our knowledge of the internal structure (i.e., conformation) of soy protein molecules is rudimentary. The writer measured the optical rotary dispersion of the cold insoluble fraction (CIF), which is one of the major components of soybean proteins. He found that this fraction was electrophoretically homogeneous and that more than 90% was composed of 11S protein and its -S-S- polymer. Address: Central Research Lab., Kikkoman Shoyu Co. Ltd., Noda-shi, Chiba-ken.

224. Arimoto, Kinitaro; Sakurai, Yoshito. 1965. Food and nutrition in Japan. In: Martin S. Peterson and Donald K. Tressler, eds. 1965. *Food Technology the World Over*. Vol. II. South America, Africa and the Middle East, Asia. Westport,

Connecticut: AVI Publishing Co., Inc. ix + 414 p. See p. 359-94. Illust. Index. 24 cm. [13 ref]

• **Summary:** This chapter, after the Introduction, is divided into two parts: 1, titled “Nutrition (p. 360-74)” by Arimoto, and 2, titled “Food technology” (p. 374-94)” by Yoshito [Yoshito] Sakurai. In Part 1, table 110, “Food supply in Japan” includes average statistics on soybeans, miso, and shoyu in kg/year and gm/day for 1944-1948, 1961, and 1961. in kg/year for the three periods: Soybeans: 3.5, 5.4, and 5.0. Miso: 10.6, 8.1, and 7.7. Shoyu: 15.9, 13.0, and 11.1. Source: Ministry of Agriculture and Forestry, Balance Sheets. Surprisingly, supplies were greater for each during and immediately after World War II than in the early 1960s.

Table 116, “Intake of foods classified into food groups and type of work (gm per capita per day), 1963” gives statistics for the entire nation, agricultural households, and non-agricultural households, as follows: Soybeans: 1.3, 1.7, 1.0. Miso: 25.1, 30.1, 22.5. Soybean products: 37.3, 29.9, 41.5. Seaweeds: 4.6, 4.2, 4.7. Shoyu: 26.2, 30.0, 23.6. Soybean products as a source of high quality protein are discussed (p. 366).

Part 2 begins with a section on “Rice” (p. 374-77) which notes that rice supplies half the calories in the Japanese diet. Japan produces all of the rice it needs—about 13 million tons. Imported rice (about 150,000 tons) is used only as a raw material in confections and miso. Japan imports most of its soybean from the USA and China, and these soybeans are processed by characteristically Japanese methods to make tofu, miso, and shoyu (p. 377).

Animal husbandry is not widely practiced in Japan, largely because the land is hilly with few grazing lands. Thus most beef, pork, and chicken are imported. The production of cow’s milk is gradually increasing; it is now 27 million hectoliters.

Packaging of foods has changed greatly during the past decade. Packaged foods are now common. Shoyu and miso, once sold by the measure, are now sold in bottles and plastic bags, respectively. Table 128 (p. 378), titled “Supply of raw materials and food consumption of their products in 1959 (Japan)” shows the following for soybeans (in metric tons = tonnes). Soybeans—Domestic supply: 410,000 tonnes. Imports: 1,000,000 tonnes. Miso consumption: 850,000 tonnes. Shoyu: 1,280,000 tonnes. Tofu: 640,000 tonnes. Aburaage 170,000 tonnes. Natto 60,000 tonnes. Meat 330,000 tonnes. Fishery products: 6,170,000 tonnes.

The section titled “Soybeans” (p. 380-86) has the following contents: Introduction. Miso, shoyu, natto, tofu, koritofu (dried tofu) [dried-frozen tofu], yuba. Photos show: (1) Shoyu brewing in tanks in a large factory. (2) Pressing and washing of tofu in koritofu manufacture in a large, modern factory. (3) Aerial view of a large, modern plant for koritofu production. (4) The thawing operation in making koritofu. (5) The drying operation in making koritofu. Address: 1. PhD, Director, National Inst. of Nutrition, Tokyo,

Japan; 2. PhD, Prof., Dep. of Agricultural Chemistry, Faculty of Agriculture, Tokyo Univ., Tokyo, Japan.

225. Brandemuhl, William. 1965. Soybean utilization in Japan. San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]

• **Summary:** A superb, in-depth, pioneering study, based on extensive original field research in Japan. It is carefully documented with hundreds of original interviews and published sources properly cited in two different lists of sources (numerical and alphabetical) Contains 30 tables and 190 excellent photos—including 7 of the author.

Table of contents: Preface. Notes. List of tables. List of figures. Map. Part I: Background. 1. The soybean: Birth and spread (legend, botanical inception, Nagata's theory of origin, spread to Japan and beyond, the American story).

Part II: Japan's production and supply of soybeans. 1. Japan the country and supply of domestic soybeans (Japan the country, domestic soybean production, planting and harvesting, marketing domestic soybean). 2. Importation of Red Chinese soybeans (background, mechanics, advantages, and prospects). 3. Importation of U.S. soybeans (history, method and mechanics of importation, the American shippers, concluding comments on importation). 4. Distribution (use in brief, super-wholesaler, wholesaler, retailer wholesaler, Japan's grain exchange).

Part III: Soybean utilization in Japan. 1. Utilization of soybeans for oil and meal (oil crushing history, soybean source, delivery of soybeans, the crushing industry, liberalization of soybean oil and meal, oil utilization in Japan, meal utilization in Japan). 2. Tofu (history, use of soybeans, manufacture, the tofu factory, marketing tofu products, recently developed tofu products, tofu as food, concluding comments). 3. Miso (importation, home production of miso, quantity of miso produced, soybean used for producing miso, kinds of miso, fermentation time, comparison of miso firms, manufacturing, packing and marketing, price, instant miso, use of miso, miso consumption outlook). 4. Shoyu (introduction, production and manufacturers, manufacture, raw materials, preparation of raw materials for natural shoyu, preparation of materials for chemical method shoyu, preparation of materials for mixed method shoyu, fermentation, filtering and pressing, sterilization, bottling, price, use of shoyu, miscellaneous shoyu products, concluding comments). 5. Natto (description, history, Daitokuji natto, the natto industry, consumption, natto soybeans, processing, making cost and price, marketing, use of natto, problems, new ideas and natto products). 6. Frozen tofu (history, development, frozen tofu soybeans, processing, freezing, defrosting, drying, treatment with ammonia and packing, marketing, preservation, use). 7. Kinako. 8. Yuba (history and development, the plight of the yuba industry, soybeans for yuba, manufacture, classification of yuba, use). 9. Tsukudani and nimame (description,

soybean tsukudani, nimame). 10. Hamanatto (history, manufacture, use). 11. Edamame. 12. Moyashi (manufacture, use). 11. Miscellaneous products (fermented soybean curd, MSG, confectionary products, other products). Conclusion. Sources (numerically arranged). Sources (alphabetically arranged).

Tables: 1. U.S. soybean production, 1924-1963. 2. United States, Red China, and world production of soybeans (bushels), 1950-1963. 3. U.S. soybean importation, exportation and amount processed for oil and meal, 1924-1963. 4. U.S. exportation of soybeans (1,000 bushels) total, by continent, and to six largest importing countries, 1958-1962. 5. Japan's soybean acreage, production, and merchandising rate. 6. Japan's importation of soybeans, total, and Red China's portion, 1945-1963. 7. Japan's total importation of soybeans and U.S. portion, 1945-1963. 8. Soybean usage in Japan, 1963. 9. Japan's processing of oilseeds, 1963. 10. Crushing capacity of selected Japanese oilseed crushers. 11. Eight largest crushers of soybeans and amount of soybeans crushed per month in 1963. 12. Total quantity of soybeans crushed in Japan, 1950-1963. 13. Japan's daily per capita intake of edible fats and oils. 14. Japan's consumption of edible fats and oils, 1945-1961. 15. Use of soybean meal. 16. Chemical composition of tofu and aburaage. 17. Quantity of soybeans and soybean meal used for tofu-aburaage productions (all Japan), 1950-1963. 18. Miso production and quantity of soybeans and soybean meal used, 1950-1963. 19. Composition of miso. 20. Daily per capita consumption of miso in Japan, 1950-1963. 21. All Japan production of shoyu and use of soybeans and soybean meal, 1950-1963. 22. Composition of shoyu. 23. Yearly per capita consumption of shoyu, 1950-1963. 24. Composition of natto. 25. Production of frozen tofu and use of soybeans. 26. Composition of frozen tofu. 27. Yearly per capita consumption of frozen tofu. 28. Composition of kinako. 29. Composition of yuba. 30. Monosodium glutamate production and use of soybeans and soybean meal. Continued.

This typed manuscript was sent to Soyfoods Center in July 2004 by Tomoko Brandemuhl, the wife of the author. About the author (based on several interviews with Tomoko, July 2004): William Victor Brandemuhl was born on 30 Nov. 1940 at Iron Mountain, Michigan. He grew up in Florence, Wisconsin, then attended the University of Wisconsin at Madison. He roomed for 3-4 years with various Japanese cancer researchers at the university. He also became close to Tomoko Arai (born 12 Dec. 1937 in Tokyo), a Japanese woman, who was doing graduate studies in social work there as a Rotary International Fellowship student. William initially intended to graduate in June 1962, but stayed an extra year in order to pursue independent studies in Japanese language and soybeans. He became interested in the soybean and its history in an anthropology class taught by Dr. R.J. Miller; William finished his excellent research paper on soybeans in Jan. 1963. He also took one year of Japanese

language instruction (night classes). William graduated in Jan. 1963 with a BSc degree in economics.

William obtained a grant (no strings attached) from Honeymead Products Co. of Mankato, Minnesota, to study soybean utilization in Japan. Only one American had studied this subject in Japan after World War II—Alan K. Smith of the USDA, who visited Japan and wrote short but detailed reports in 1948-49 and 1958. In Jan. 1963 Brandemuhl arrived in Japan and became a research fellow at the Department of Agricultural Economics, Kyoto University, Kyoto, Japan. Between Feb. 1963 and May 1964 (15 months) he conducted field research on soybean utilization in Japan. In June 1963 (after William had been in Japan for 4 months), Tomoko completed her graduate studies, graduated from the University of Wisconsin, and (since her scholarship was finished), returned to Japan—to be with William and to help him with his research in Japanese, which he spoke only moderately well. She traveled with him throughout Japan and translated for him during the many interviews he conducted. At each destination, she spoke about America to the local Rotary club—which paid her transportation, room, and board. William's monthly check from Honeymead paid for his room and board—but not for his travel and research, so he had to work part time doing English translation for a Japanese company. On trips, he took many photos using his expensive Nikon camera. Tomoko's family lived near Kobe, where she and William were married on 8 Aug. 1964—three months after he finished his field research. Several days after the marriage, they returned to the USA to visit his parents in Florence, Wisconsin, and enjoy a wedding party there.

William now knew he wanted to pursue a career in international business. He was soon offered a job at Crocker Citizen National Bank (International Division) in San Francisco, California. They drove to San Francisco and got an apartment at 1701 21st Avenue; he began work that fall, and was soon learning the basics of international business. Every evening after work at the bank he returned home to work on transforming his field notes into a manuscript. As he wrote the rough draft, Tomoko (a skilled pianist but not a skilled typist) typed it on a manual typewriter. The next day he would correct any mistakes and she would retype each page into final form. In 1965 he had the best carbon copy bound and sent it to Honeymead; he kept the original. It was never published and he received no academic credit for it.

On 26 May 1966 their first son and only child, Konrad Victor Brandemuhl, was born in San Francisco. They bought a house in Pacifica. In 1967 he was offered a job with Caterpillar Tractor Co. (International Div.) in Peoria, Illinois. In 1968 he moved with his boss to work at Allis-Chalmers Manufacturing Co., West Allis, Wisconsin. In 1969 he was transferred to Tokyo, Japan, as Far East Representative of the company. In 1970 he was transferred to Singapore as Far East Manager of the company.

William and Tomoko later lived for about 10 years

near Tokyo, Japan (mostly in Mitaka), and for a while in Singapore. Over the years he showed his typescript on "Soybean Utilization in Japan" to many people, but nobody was interested. In 1986 he started his own trading company, specializing in textiles, natural rubber, latex thread, and various machine mechanisms. Tragically, William died on 2 April 1998 in Bangkok, Thailand, of pneumonia, during a business trip. He loved the excitement of international business and interaction with people of different cultural backgrounds. Address: San Francisco, California.

226. Brandemuhl, William. 1965. Soybean utilization in Japan: Figures (Document part). San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]

• **Summary:** 1. Black soybeans from Japan's Tanba region and American Harosoy soybeans. 2. Soybeans growing on a dike. 3. Soybean plants drying on rack. 4. Soybean plants drying just prior to harvesting. 5. Soybean plants drying just prior to harvesting. 6. Soybean harvester. 7. Depodding rack and pod filled stalk. 8. Depodding soybeans. 9. Entrance to the Red Chinese Trade Fair held in Tokyo, during April, 1964. 10. One of the agricultural exhibits at the Chinese Trade Fair (corn and soybeans). 11. Soybeans and soybean plants exhibited at the Chinese Trade Fair. 12. Soybeans and other bean products that Red China is capable of exporting (exhibition at the Red Chinese Trade Fair). 13. Soybeans on display at retail store. 14. Soybeans on display at retail store. 15. Barge unloading of soybeans at oil mill. 16. Barge unloading of soybeans at oil mill. 17. Soybean tank receiver at oil mill. 18. Multi-spout soybean feeder at barge side. 19. An oil gift assortment.

20. Selling oil at a small oil retail shop. 21. Dispensing oil. 22. Selection of oil at oil retail shop (notice birds in cage at right). 23. Vegetable oil displayed with petroleum products. 24. Vegetable oil displayed with petroleum products. 25. Bottling facilities at oil wholesaler's. 26. Bottling facilities at oil wholesaler's. 27. Prepackaged oil products displayed at wholesaler's. 28. Seafood fried in soybean oil. 29. Selling soybean oil fried products. 30. Temperature controlled fryer. 31. At a chicken farm. 32. Handling 20 kilograms bags of chicken feed. 33. Soybean meal on top of other components of mixed feed prior to hand mixing. 34. Bag fastener for mixed feeds packed at wholesaler. 35. Fermenting agent for bakery (contains equal quantities of soybean flour, yeast, and water). 36. Silk worms eating mulberry leaves. 37. Silk worms eating soybean protein mixed with mulberry leaves. 38. Tofu. 39. Soybean grinder.

40. Soybean grinder. 41. Soybean grinder. 42. Open pit live steam cooker. 43. Open pit wood-stoked cooker. 44. Okara tank and press. 45. Outdated okara press. 46. Tonyu [soymilk] receiving tanks (precipitation tanks). 47. Removing water from precipitating curd. 48. Pressing tofu with stone weights. 49. Yakidofu. 50. Yakidofu being

dipped into a shaping box. 51. Mechanical press for pressing yakidofu. 52. Cutting yakidofu. 53. Roasting yakidofu. 54. Kinugoshi tofu. 55. Aburaage. 56. Aburaage prior to being deep fried. 57. Frying sushiage, a product similar to aburaage. 58. Frying aburaage. 59. Hiroso: left front; atsuaage: right front; sushiage: left rear; aburaage: center rear.

Note 1. This is the earliest English-language document seen (May 2012) that contains the word *atsuaage*; it refers to deep-fried tofu cutlets.

60. Okara for use as cattle feed. 61. Okara for food use. 62. Overall view of production portion of tofu plant. 63. Tofu peddler. 64. Tofu on display. 65. Bagged tofu. 66. Miso-shiru soup. 67. Dengaku (yakidofu covered with miso and placed over low heat). 68. Aburaage formed as a bag with rice inside. 69. Yudofu, Japan's most famous but not often eaten tofu dish. 70. Yudofu. 71. Miso. 72. Fermentation starting material (rice inoculated with bacteria). 73. The first step in making home miso. 74. Mashing soybeans for home miso. 75. Rice koji being used for home produced miso. 76. Salt being added to soybean and koji for the making of home miso. 77. Mixing home miso components. 78. Mixing home miso components. 79. Freshly made home miso.

80. Home miso after one year natural fermentation. 81. Koji maker. 82. Koji filled boxes. 83. Autoclave for steaming soybeans. 84. Koji mixed with salt. 85. Wooden vat for miso fermentation. 86. Weights for pressing miso. 87. Removing miso from fermentation vat. 88. Mixing and grinding miso. 89. Degraining [grinding] miso. 90. Miso on display. 91. Miso packing and sealing instrument. 92. Packing miso in a plastic bag. 93. Beef and rice miso preserver. 94. Seafood and rice miso preserver. 95. Receiving soybean meal at shoyu factory. 96. Saline solution for shoyu production. 97. Fermenting moromi. 98. Equipment used for bubbling moromi. 99. Temperature control of moromi.

100. New moromi. 101. Moromi which has fermented nearly one year. 102. Hydraulic press for pressing moromi. 103. Running moromi into filter cloth. 104. Filter cloth containing moromi. 105. Raw shoyu storage tank. 106. Open press for previously pressed moromi. 107. Opening moromi filter cloth. 108. Removing shoyu kasu (shoyu presscake) from filter cloth. 109. Bagging shoyu kasu for sale as cattle food. 110. Quick method shoyu kasu. 111. Shoyu sterilization instrument. 113. Shoyu bottler. 114. Bottling shoyu by hand. 115. High speed labeling. 116. Hand labeling. 117. Preparing sauce for shipment. 118. Shoyu cold sauce. 119. Filling plastic bottles with shoyu for use in box lunches.

120. Broiled chicken coated with shoyu. 121. Fish marinated in shoyu. 122. Fish baked with shoyu. 123. Grilled eels basted with shoyu. 124. Daitokuji natto (look like raisins spread on a sheet of paper).

125. Cooker for steaming soybeans for natto. 126. Pressurized container for inoculating soybeans. 127.

Inoculating soybeans for natto. 128. Traditional method of packing natto. 129. Traditional method of packing natto. 130. Incubation rack and traditional packages of natto. 131. Packaging inoculated soybeans prior to incubation. 132. Packaging inoculated soybeans prior to incubation. 133. Inoculated soybeans in recently introduced containers. 134. Natto incubation room. 135. Natto on display at egg shop. 136. Overall view of frozen tofu factory. 137. Precipitation containers for frozen tofu tonyu. 138. Smoothing frozen tofu curd. 139. Frozen tofu curd flowing into shaping box.

140. Shaping box for frozen tofu curd equipped with sheet metal guide. 141. Removing formed frozen tofu curd from sink. 142. Cutting formed curd into freezing size. 143. Sized curd in -20°C freezer. 144. Sized curd in -5°C degree freezer. 145. Defrosting frozen tofu. 146. Removing frozen tofu curd from centrifuge. 147. Inspecting frozen tofu curd for dryness. 148. Drying frozen tofu. 149. Grinding frozen tofu into marketable size. 150. Packing frozen tofu. 151. Frozen tofu on display. 152. Cooked frozen tofu displayed in food shop. 153. Cooked frozen tofu mixed with vegetables. 154. Packing kinako. 155. Kinako on display. 156. Covering pounded rice cake [mochi] with kinako. 157. Yuba. 158. Yuba hanging on rack above tonyu tank. 159. Lifting yuba from tonyu tank.

160. Fresh yuba. 161. Rolling fresh yuba into marketable form. 162. Combining fresh yuba with vegetables. 163. Rolling dry yuba. 164. Yuba on display. 165. Shoyu vats at tsukudani factory. 166. Tsukudani cooker. 167. Cooling tsukudani. 168. Nimame being marketed. 169. Nimame with shoyu and shrimp. 170. Nimame with shrimp. 171. Selling nimame. 172. Nimame as served. 173. Hamanatto. 174. Sun drying Hamanatto. 175. Close-up of sun-dried Hamanatto. 176. Pressing Hamanatto. 177. Grading Hamanatto. 178. Hamanatto on display. 179. Edamame.

180. Sprouting soybeans. 181. Sprouting soybean covered with straw. 182. Close-up of sprouting soybeans. 183. Sprouting soybeans. 184. Wetting down sprouting soybeans. 185. Soybean sprouts. 186. Mapped sprouts [Note 2. "Mappe" is not a Japanese word; mappe beans are imported from Burma]. 187. Soybean roasting oven. 188. Roasting soybeans. 189. Soybeans and seaweed. 190. Black soybeans in pounded rice cake [mochi].

Map of Japan. Address: San Francisco, California.

227. Brandemuhl, William. 1965. Soybean utilization in Japan: List of interviews (Document part). San Francisco, California. xxii + 478 p. Unpublished manuscript. 28 cm. [189 ref]

• **Summary:** Between Feb. 1963 and May 1964 the author interviewed people from the following organizations (listed alphabetically) related to soybean utilization in Japan. In many cases he interviewed the owner, president, or managing director.

1. Agricultural Experimental Farm, Kamigori, Hyogo-ken. 2. Akutagawa Candle Co., Kyoto. 3. Aoki Miso Co., Nagano-ken. 4. Aoki Umbrella Co., Kyoto. 5. Aoyama Candy Co., Kyoto. 6. Bunge Far East Agent, Osaka. 7. Choko Shoyu Miso Co., Nagasaki. 8. Continental Overseas Corp., Tokyo. 9. Daiichi Trade Co., Kobe. 10. Dainihon Ink and Chemical Co., Osaka. 11. Dainihon Pharmaceutical Co., Osaka. 12. Daiya Frozen Tofu Co., Suwako-gun, Nagano-ken. 13. Daizu Yuryo Wholesale and Broker, Kobe. 14. Franceya Chocolate Co., Kyoto. 15. Fuji Oil Co., Osaka. Note: This is the earliest document seen (June 2009) concerning the work of Fuji Oil Co. (Osaka, Japan) with soy.

16. Genroku Brewing Co., Kyoto. 17. Gion Mameheto Candy Co., Kyoto. 18. Hamamoto Tofu Co., Kyoto. 19. Hamano Tofu Co., Kyoto. 20. Hanamura Bread Co., Kobe. 21. Harada Miso Co., Kyoto. 22. Hasegawa Oil Co., Kyoto. 23. Hashizume Tsukudani Co., Kyoto. 24. Hirota Sauce Co., Kyoto. 25. Hohnen Oil Co., Osaka. 26. Honda Miso Co., Kyoto. 27. Ishino Miso Co., Kyoto. 28. Itoh Trade Co., Osaka. 29. Itoh Trade Co., Tokyo.

30. Iwai Trade Co., Osaka. 31. Kaihara Natto Co., Kyoto. 32. Kamejirushi Shinshu Miso Co., Nagano-ken. 33. Kanegabuchi Chemical Co., Takasago-shi, Hyogo-ken. 34. Kanemasu Grain Wholesaling Co., Osaka. 35. Kanematsu Trade Co., Osaka. 36. Kansai Paint Co., Osaka. 37. Kansai Shoji Wholesale Co., Kyoto. 38. Kanto Miso Co., Kyoto. 39. Kasakura Natto Co., Tokyo. 40. Kato Kinako Co., Tokyo. 41. Kido Tofu Co., Tokyo. 42. Kobata Farm, Kyoto. 43. Kobayashi, Michiharu, Kyoto University, Kyoto. 44. Koya-san Frozen Tofu Co., Ito-gun, Wakayam-ken.

45. Kurosawa Miso Co., Nagano-ken. 46. Kyoto Prefectural Agricultural Cooperative, Kyoto. 47. Louis Dreyfus and Co., Tokyo. 48. Mame Masa Candy Co., Kyoto. 49. Marubeni Iida Trade Co., Osaka. 50. Meiji Chocolate Co., Osaka. 51. Midori Natto Co., Tokyo. 52. Mitsui Trade Co., Osaka. 53. Mitsui Trade Co., Tokyo. 54. Moriguchi Natto Co., Kyoto. 55. Morita Frozen Tofu Co., Sasayama, Hyogo-ken. 56. Moriwaki frozen Tofu Co., Taka-gun, Hyogo-ken. 57. Nagata, T., Dept. of Plant Breeding, Hyogo University of Agriculture, Sasayama, Hyogo-ken. 58. Nagoya Miso Co., Nagoya. 59. Nakai Wholesale Co., Osaka.

60. Nakamura Yuba Co., Kyoto. 61. Nakayama Farm, Kamigori-cho, Hyogo-ken. 62. Nakazawa Soap Co., Kyoto. 63. Namikawa Tofu Co., Kyoto. 64. Naruse Natto Bacteria Co., Tokyo. 65. National Agricultural Cooperative Assoc., Osaka. 66. Nihon Paint Co., Osaka. 67. Nikka Oil Co., Tokyo. 68. Nisshin Meal Co., Kobe. 69. Nisshin Oil Co., Yokohama. 70. Noda Shoyu Co., Takasago-shi, Hyogo-ken. 71. Nomura Meal Co., Kyoto. 72. Nomura Tsukudani Co., Kyoto. 73. Nunoura, Hiroshi, Kyoto Women's University, Kyoto. 74. Oguchi, K., Nagano-ken Shinshu Miso Assoc., Nagano-ken.

75. Ohashi, Taiji, Japan Soap Assoc., Tokyo. 76. Okazaki Natto, Tokyo. 77. O-mame Candy Co., Kyoto. 78.

Osaka Grain Exchange, Osaka. 79. Osaka Prefectural Miso Assoc., Osaka. 80. Otsuya Agricultural Brokers, Kyoto. 81. Ryo Tofu Co., Kyoto. 82. Sawai Wholesale Co., Kyoto. 83. Senmaru Yuba, Kyoto. 84. Shimamoto Tofu Co., Kyoto. 85. Shinseimame Candy Co., Kyoto. 86. Sugimori, T., Marukin Shoyu Brewing Co., Kyoto. 87. Tada, H., Kyoto Prefectural College, Kyoto. 88. Taiyozakoku Wholesale Co., Kyoto. 89. Takeya Miso Co., Suwako-shi, Nagano-ken.

90. Tanaka Narazuke, Kyoto. 91. Tatsuno Higashimaru Shoyu Co., Tatsuno-shi, Hyogo-ken. 92. Tawa Chicken Farm, Kyoto. 93. Tofu Aburaage Assoc., Kyoto. 94. Toyo Menka Trade Co., Osaka. 95. Uchida Tsukemono, Kyoto. 96. Ueda Miso Assoc., Ueda-shi, Nagano-ken. 97. Uemura Suhama Candy Co., Kyoto. 98. Uno Tofu Co., Kyoto. 99. Yamajirushi Miso Co., Nagano-ken. 100. Yamamoto Farm, Taki-gun, Hyogo-ken. 101. Yamanaka Oil Wholesale Co., Kyoto. 102. Yamato Bean Sprout Co., Kyoto. 103. Yamaya Hamanatto Co., Shizuoka-ken. 104. Yazura Yahata, Kyoto Textile University, Kyoto.

105. Yoshihara Oil Co., Osaka. 106. Yoshimura, Hyogo University of Agriculture, Sasayama-shi, Hyogo-ken. 107. Yoshizabaru Retail Co., Kyoto. 108. Yubahan Co., Kyoto. 109. Yubakichi Co., Kyoto. Address: San Francisco, California.

228. Brandemuhl, William. 1965. Yuba: History and development, plight of the yuba industry, soybeans for yuba (Document part). In: Brandemuhl, William. 1965. Soybean Utilization in Japan. San Francisco, California. xxii + 478 p. See p. 367-86, Unpublished manuscript. 28 cm. [18 ref]
• **Summary:** "Yuba (see Figure 157) a film removed from the surface of heated Tonyu and sold as either a fresh or dried high protein food enjoys, as many other traditional foods, only limited use;

"History and Development: Yuba is believed to have originated in China and was first carried to Japan by Buddhist priests supposedly in part by the same priest who discovered frozen Tofu, around 1400 A.D. That priest (Kobodaishi) not only established the Koya-san temples in Wakayama but as he was quite famous; he traveled extensively establishing temples in many parts of Japan. In Kyoto the center of Yuba consumption today, he established a large number of temples and resided the longest. As Kyoto was the capital of Japan and the home of many noble families Yuba quickly developed into a favorite although not exclusive food of the military, governmental, and noble families.

"In that way Yuba grew very popular and expensive but when the capital was moved to Tokyo most of the noble families also moved so Yuba began its long and gradual decline extending even to the present. In trying to maintain their sales the Yuba makers sent Yuba to Tokyo but with transportation what it was the venture was unsuccessful. After that a few Yuba makers moved and established

themselves in Tokyo of which two still remain today. Demand for Yuba is indicated by the fact that there are only two Yuba shops, not much larger than the average Tofu shop for Tokyo's 10 million people.

"Most of the Yuba producers at present can trace their production back to the time of selling to noble families indicating that the Yuba industry is vested in tradition with very few new plants developing. The number of Yuba plants has in fact been decreasing, because when a maker of the older generation dies there is no one to take his place as in the words of one maker, 'If I don't have a stupid son my business will die with me.' In the past at least the oldest son was bound to conduct the affairs of his father's business even if he did not want to. Today however this same lad can attend college by virtue of his father's hard earned wealth and later begin a life of his own choice. With such situation existing the present number of Yuba makers stands at about 50 throughout Japan with the majority of them in the Kyoto and Osaka areas of Japan. Kyoto has between 20 and 30 plants, Osaka less than 10 and Kobe less than seven. Nara has a few plants with the rest being mainly located separately throughout the Kansai area.

"With a few exceptions Yuba makers produce at plants operated with more pronounced traditional procedures than do Tofu plants. At one time Tofu and Yuba were produced in the same plant but with specialization, developed independently with Tofu taking the lead as far as innovation is concerned. The usual plant will utilize an average of 150 kilogram of soybeans per day with the Osaka shops consuming slightly more.

"The largest Yuba maker in Japan does not use more than 200 kilograms [of soybeans per day]. Although soybean usage is not calculated for Yuba, with only 50 plants it is apparent that yearly usage is not large. A National Association of Yuba makers existed at one time but not at present because such a small number of makers could not afford promotional activities of the kind that would be effective in addition to the fact that the National Association would not receive much of an advantage if they purchased soybean for the maker because distribution cost would counteract any savings. In Kyoto a Yuba Association exists but not for any expressed purpose except, possibly, brotherhood. Even that is not achieved as the traditional makers are constantly reprimanding the more progressive elements for attempting to put them out of business. Although competition is not greatly suppressed at present before World War II the Yuba industry was highly competitive. Price wars were a common occurrence. Observing the Yuba industry and operation at present one finds such nearly unbelievable.

"The Plight of the Yuba Industry: Although unlike the Tofu industry in that Yuba is only made during the day, labor is one of the most important problems facing the industry. Larger Yuba plants cannot be constructed because at crucial

points in the manufacturing process a large amount of manual work is required. By virtue of its raw material Yuba is already a high priced product so if high wages were paid the price of Yuba would have to be increase further. Even if demand would not decrease as a consequence it is very likely that at such price some of the large efficient food firms would begin producing and marketing Yuba. Instead of encouraging or allowing this to happen Yuba continues to be produced in small inefficient factories utilizing of as much family labor as possible. Automation to displace this zero-cost labor would seemingly be unwise as would automating to increase capacity even if the difficult to produce Yuba could, from a technical viewpoint, be produced under automated principles. Assuming that Yuba will continue to be produced without the benefits of modernization and possibly rightly so a number of conditions such as sanitation require long-needed attention."

Note: This is the earliest document seen (Oct. 2012) that gives yuba industry and market statistics, trends, and analyses for a geographical region (Japan).

"Soybeans for Yuba: The makers of Yuba prefer and use domestic soybeans for virtually all production. This is further defined as Shiga prefecture soybeans, an area not far from the majority of Yuba production but not an area of large soybean production so price is extremely high. The Yuba makers do not like to use U.S., Red Chinese, or even Hokkaido soybeans. Red Chinese soybeans are least preferred with both Hokkaido and U.S. soybeans occasionally used. The Yuba makers desire a fresh large white hilum, high protein soybean with very few splits. Many soybean food product makers prefer soybeans with such quality but cannot afford to use them. Yuba makers are willing to pay the price and count on selling Yuba to a certain type of consumer regardless of price.

"After the war whole soybeans were in short supply so Yuba makers attempted to use soybean meal. They found such procedure impossible so have not attempted use of meal since. The future of using domestic soybeans seems rather questionable with decreasing production especially outside of Hokkaido. This may mean that for the small quantity of soybeans required, U.S. soybeans, especially the selected types, may come to be used" (Continued). Address: San Francisco, California.

229. Brandemuhl, William. 1965. Yuba: Manufacture, classification and use (Document part). In: Brandemuhl, William. 1965. Soybean Utilization in Japan. San Francisco, California. xxii + 478 p. See p. 367-86, Unpublished manuscript. 28 cm. [18 ref]

• **Summary:** The section titled "Manufacture-Initial steps" begins with "Soaking and grinding: Soybeans are first soaked in well water for 6-8 hours in summer and 12-24 hours in winter. Checking the state of soaking is accomplished in the same way as with Tofu, that is, to examine the inside color of

the soybeans, as well as the appearance of bubbles rising in the container used for soaking. If soybeans for Yuba happen to soak too much they become too sticky after cooking and too much Okara results. After soaking 5-10 kilograms (dry weight) of soybeans they are ground in the same way and with the same type of equipment that is used to grind Tofu soybeans except that more often the grinder will be smaller. When grinding, an equal quantity of water is added.

“Cooking: The ground soybeans and water are transferred to a live steam, oil, or sawdust heated cooker either by negative pressure in the case steam is used or by hand. Water in the quantity equal to the quantity of ground material may be added portion by portion before, during, and after cooking depending on the makers method for obtaining the most protein from the Okara.

“Use of an open pit steam cooker is rather limitedly used because of its cost. It is said by makers who cook in other ways that a steam cooker does not give the desired quality Tonyu [soymilk] but this seems to be a rationale for their financial inability to purchase same. Yuba makers that use open steam cookers believe that cooking under pressure would even be better but then a more skilled operator is required and considering the production economics of the Yuba industry such an operator would be difficult to find. Traditionally charcoal then wood was used to cook but now the common source of heat is pine sawdust. Its pitch content and intermediate hardness makes it an ideal inexpensive fuel. Commercial companies selling such sawdust receive \$.28 (100 yen) for a bushel burlap bag. With a steam cooker cooking time is very similar to Tofu while heating with saw dust necessitates boiling the ground material for 30-40 minutes. Stirring is done a number of times to insure even cooking.

“Pressing: After the ground material is cooked, pressing is accomplished in much the same way as with Tofu. The cooked material is pressured, pumped, or hand dipped from the cooker to a coarse nylon filter which is placed in the press box. The press used to separate the Tonyu and Okara is seldom power driven but tends to be of an older kind than most Tofu presses. The pressing operation is an important part of manufacturing Yuba because as much Tonyu as possible is desired, while with frozen Tofu much more use of the Okara is the rule. After pressing the Tonyu flows through a very fine cotton filter into a 100 liter container (quantity of Tonyu is usually around 90 liters per batch). Bubbles that form on the top of the cooking liquid are removed because if allowed to remain they would make it difficult for film to form. At this point the similarity between Tofu and Yuba end as Yuba is not precipitated with magnesium sulfate.

“Film formation: After all the possible Tonyu is obtained for a batch it is transferred by hand to a large shallow wood partitioned tank as can be seen in Figure 158. Usually the tanks are made of brass but the more progressive firms use stainless steel because brass tarnishes and is easily

damaged. The 2½ inch deep tank is usually partitioned into 20, 24, or 30 squares 18 inch square (or sometimes that large and slightly narrower) forming a double row 10, 12, or 15 squares long. The 24 square tank seems to be the most favored because one person can most efficiently manage lifting protein film from 24 squares. In former times Yuba was made in separate containers rather than the one tank with removable wood partitions as are now used. This caused very individual but ununiform production. At present Yuba is not made in separate containers. Underneath the 2-10 Tonyu tanks that the Yuba maker may have is another tank which acts as a double boiler when hot water is circulated through it. Before Tonyu for Yuba was heated directly but it was found that greater control could be exercised if the double boiler system was used. This type of heating tank is now used at all Yuba plants with the source of heat for the water usually being sawdust. Even the makers which use steam cookers used the slow burning sawdust to maintain the temperature of the circulating water at 90-95°C for maintaining the Tonyu at 80-85°C. Yuba Tonyu should not be heated to the boiling point as it would produce a final product that is hard, however if temperature were too far below boiling film would not form. After Tonyu is poured into such a tank it flows under the partitions to an even level. After the level is even bubbles if any are removed and the Tonyu in the tank is allowed to stand untouched for about 15 minutes at which time a thin yellow film can be seen on the surface of the Tonyu in each square.

Film removal: After the entire surface area of a square is covered with the film it is lifted off (see Figure 159) with a small wood shaft 12-18 inches in length. The shaft is first inserted into the Tonyu at the right near side of a square and slide underneath the surface to the rear along the right side partition. Then the shaft is gently lifted which also lifts the film. As the film is being lifted it is turned broadside to the maker and lifted entirely out of the squares. The shaft with a piece of Yuba hanging from it is then attached to a rack above the tank as shown in both Figure 158 and 159. The method of removal varies with plant but all follow the above description in principle. After raising one piece of Yuba from the square the maker moves to the subsequent squares of the tank. When the last square is finished a film has again formed on the first one so that a maker can work almost continuously until the last of the Tonyu is gone. More likely he will add his available Tonyu when the level becomes low so that Yuba is never removed from the bottom until a days work is nearly finished.

“After the Yuba sheets have dried slightly they may or may not be rehung with two or more hung together, depending upon the way the sheet is to be folded as a final product. For certain forms of Yuba the lifting shaft may be inserted so that the sheet is doubled upon lifting. Lifting Yuba from the surface of Tonyu requires a great amount of manual work and it is believed that the lifting process can

not be automated even if the remainder of operations were.

Note. This is the earliest document seen (Oct. 2012) that contains a detailed description of how to make yuba on commercial scale.

“Classification of Yuba: Although there are many sub-types there are only two different kinds of Yuba, that is fresh Yuba and dry Yuba. Fresh Yuba, only produced in Kyoto, is only allowed to remain on the rack above the Tonyu tanks until the unsolidified portion drains. Then it is removed and racked together as shown in Figure 160. The fresh Yuba remains in the rack until sale is expected or order for same is received. At that time from two to five sheets of fresh Yuba are hand rolled as shown in Figure 161 and wrapped in paper. Fresh Yuba may also be cut in particular size pieces and folded with cooked vegetables as shown in Figure 162. Fresh Yuba may also be fried with burdock wrapped inside” (Continued). Address: San Francisco, California.

230. Brandemuhl, William. 1965. Yuba: Manufacture, classification and use (Continued–Document part II). In: Brandemuhl, William. 1965. Soybean Utilization in Japan. San Francisco, California. xxii + 478 p. See p. 367-86, Unpublished manuscript. 28 cm. [18 ref]

• **Summary:** Continued. “Originally all Yuba was made as fresh Yuba but as it only lasts a short time, drying began. At present only about 20 percent of total Yuba production is sold fresh. Fresh Yuba is very perishable lasting only two to four days in winter and for four to eight hours in summer. In summer it is only marketed at the Yuba shop. Yuba meant to be marketed as dry needs to dry on the rack only one to three hours in summer while 12-24 hours in winter. Rain in any season will lengthen the drying time required. For dry Yuba the process of making, drying, folding, and packaging usually requires one day so a certain day’s production is usually marketed the following day.

Part of the quality difference of dry Yuba stems from the fact that a Yuba sheet is lifted from the top of a Tonyu batch is lighter and of much better quality than subsequent sheets with the sheets lifted with Tonyu that has remained on the bottom very dark, relatively poor quality, sweeter tasting, and thicker. Of whatever quality, Yuba usually darkens as it dries although bottom lifted pieces become the darkest.

If a sheet of Yuba is of such a size and consistency that it can be easily folded (see Figure 163) it is graded higher than a sheet which does not have these characteristics. Broken and cracked pieces are very often not even folded but just bagged. When folding, a sheet of Yuba that is slightly wet is used for shaping the dry Yuba with greater ease. The natural color of yuba is tan but often it is colored yellow for the purpose of food arrangement. It is for that purpose that some Yuba is colored blue but the people who appreciate Yuba the most prefer it in its natural color.

Dry Yuba can be stored with no adverse effects for two to three years if humidity is not extremely high. This ability

is one of its most important advantages but since it is such an expensive product, (290 grams for \$.97 or 350 yen) Yuba cannot realize its inherent advantages. Fresh Yuba while being \$.056 (20 yen) for one sheet is only available in the neighborhood of the Yuba shop.

“Use: Most Yuba sales are conducted at the Yuba retail shop usually located at the front of a factory or through telephone orders from steady customers. In Yuba production areas, department stores may stock Yuba (see Figure 164) even though it is a slow moving item. Outside the immediate area of production Yuba cannot be found except possibly at New Years. The above fact is somewhat the reason why at least 90 percent of the Japanese people do not know what Yuba is. The Shiga prefecture farmers who supply soybeans for Yuba have no idea of what the product is. Because of expense nation-wide promotion cannot be done and because of the present nature of the Yuba industry Yuba makers do not particularly desire to promote Yuba on a national basis because each Yuba shop has a large number of steady customers with rather set Yuba consumption patterns so he can easily predict expected sales and lead a relaxed life producing only that amount. This type of feeling is amazingly professed by the makers themselves.

“Yuba unlike Tofu, Natto, and Miso is not eaten every day by even a connoisseur of Yuba. Most Yuba consumers do not eat Yuba for its excellent food value (see Table XXIX) but rather for its taste and adaptability for traditional Japanese food. Traditional Japanese food is so closely connected with Yuba that Yuba is along with frozen Tofu an important component of the completely vegetable dish mentioned in respect to frozen Tofu usage. For traditional food purposes Yuba is often requested by telegram or mail order from parts of Japan where Yuba is not produced. With the gradual disappearance of such traditional foods it is hard to believe, as Yuba makers state, that Yuba consumption is increasing. This is amplified by the fact that most young people neither know how to prepare Yuba or like its taste. For the small group of people that appreciate the taste of Yuba or value its history Yuba may be prepared and used in the following way:

Fresh uncooked Yuba is very often eaten with Shoyu and other seasonings. Dry Yuba must be precooked and, then for example, placed in the following foods as fresh Yuba might be directly placed: (1) Sukiyaki. (2) Yudofu. (3) Many types of soup. (4) Substitute for or complement to raw fish and rice. (5) Fried in Tempura.

“A specialty product that Yuba makers have capitalized upon is in respect to the beer drinking habits of Japan. Most often when beer is ordered at places serving same, a small dish of food will accompany each order. The customer is usually charged for this even though he may not want it although sometimes it is served without charge. Of the hundreds of possible foods for this dish Yuba makers produce a fried Yuba with the basic material the dark waste

Yuba that gathers on the shaft for lifting Yuba from the Tonyu tank. It is unfortunate however that the people who eat such food do not know it is Yuba.

“Yuba should not be precooked or cooked too much as with overcooking Yuba’s taste becomes very bad. This fact makes it a food requiring delicate attention and therefore not considered suitable for use in the average meal.

“The fact that Yuba is light makes it an ideal traditional food for use by Japanese residing in other countries. A limited quantity of Yuba is exported for this purpose but an export market among the natives of any country is questionable as even most Japanese prefer other foods to Yuba.”

Photos show: (see next 2 pages) 157 (page 368). Yuba. 158. Yuba hanging on rack above tonyu tank. 159. Lifting yuba from tonyu tank.

160. Fresh yuba. 161. Rolling fresh yuba into marketable form. 162. Combining fresh yuba with vegetables. 163. Rolling dry yuba. 164. Yuba on display.

Sources (p. 467-68, #160-68): Visits to and interviews with: (1) Nakamura Yuba, Jan. 9 and March 6, 1964. (2) Senmaru Yuba, March 16 and Feb. 20, 1964. (3) Yubahan Co., Kyoto, Japan, June 6, 1964. (4) Yubakichi, June 6 and 18, 1963. Address: San Francisco, California.

231. Portrait photo of William Brandemuhl, American soyfoods pioneer in Japan. 1965. Japan.

• **Summary:** William Brandemuhl was a pioneer in studying and writing about soyfoods in Japan after World War II. His magnum opus, “Soybean Utilization in Japan” was completed in 1965. According to Tomoko Brandemuhl this black-and-white photograph (4½ by 6½ inches) was taken in late 1965, shortly after the book was completed

This photo was sent to Soyinfo Center in Oct. 2012 by Tomoko Brandemuhl (Stratford, Connecticut), his wife.

232. Shibaki, Yoshiko. 1965. Yuba. Sumidagawa [Yuba and the Sumidagawa river]. Tokyo: Shinchōsha. 221 p. 16 cm. [Jap]*

• **Summary:** This is a work of fiction. The Sumida River (*Sumida-gawa*) flows through Tokyo, Japan, into Tokyo Bay. The author, Yoshiko Shibaki, was born in 1914.

233. Miller, Gloria Bley. 1966. The thousand recipe Chinese cookbook. New York, NY: Atheneum. First Grosset & Dunlap edition 1970. xiv + 926 p. Illust. magnificently by Earl Thollander. Index. 26 cm.

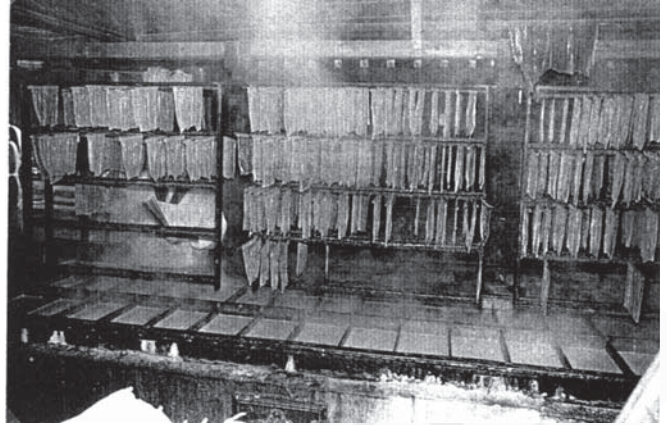
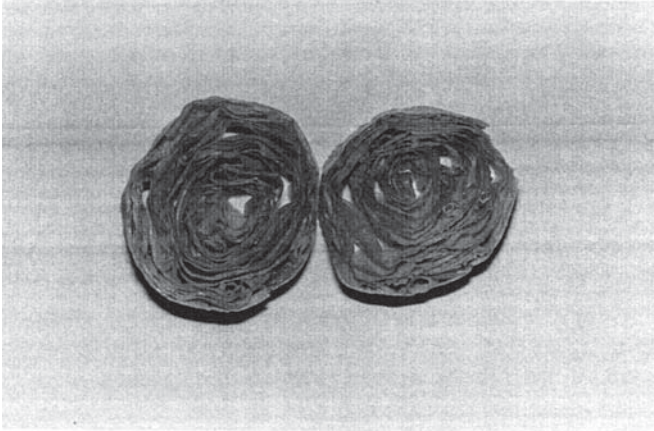
• **Summary:** This excellent, massive volume, by the blond-haired wife (a professional writer; photo shown on dust jacket) of a Greenwich Village sculptor, offers an in-depth introduction to Chinese cooking and ingredients, though it is unusually heavy on flesh foods and light on grain and vegetable dishes—as the following listing of recipes will show. In describing “The Chinese Diet” (p. 3-4) the author

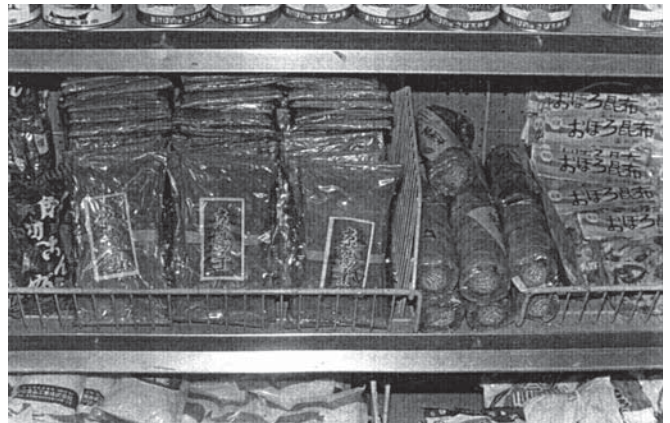


notes, “Meat does not predominate, vegetables do:... There are no dairy products: Butter, cheese and milk are practically unknown to Chinese cooking. (Cattle, few and far between, were more profitably put to work as beasts of burden.) Yet, with nutritional ingenuity, the Chinese created their own ‘cow’ which produced its own ‘dairy’ products. They took the lowly soybean, whose protein closely resembles that of meat, and transformed it in innumerable ways. They softened and ground the soybean, then mixed it with water, converting it first to milk, then to curd, and finally to cheese. (They also put it to many other uses: made it into sauce and jam; served its sprouts as vegetables; fermented, dried and roasted it; used it salty as a condiment, sweet in pastries.)”

Page 75 notes: Soy sauce should be used discreetly in light soups. If possible, it should be light soy. The dark variety can destroy a soup’s lightness and clarity; its strong taste can overwhelm flavors.

Soy-related recipes include: Basic bean curd soup (p. 99-100). Basic cold bean curd (p. 114). Slivered bean curd and shrimp (p. 115). Stir-fried pork and bean curd (p. 133). Stir-fried pork with deep-fried bean curd. Stir-fried pork with





pressed bean curd (p. 135). Stir-fried roast pork and bean curd I and II (p. 156-57). Basic steamed minced pork (with “fermented black beans,” p. 167-68). Steamed sliced pork with ham and bean curd (p. 170). Steamed sliced pork with white cheese [white fermented tofu] (p. 171). Basic braised pork with bean curd (p. 174-75). Braised pork with red bean cheese (p. 176). Braised pork with chestnuts, mushrooms and ginkgo nuts (p. 176-77) has a variation that calls for “¼ pound dried bean curd sticks.”

Note: This is the earliest English-language document seen (June 2011) that uses the term “dried bean curd sticks” to refer to dried yuba sticks. Braised pork and bean curd (p. 180). Braised five-flower pork and red bean cheese (p. 180-81). Red-simmered pork (with soy sauce, p. 186-88). Stir-fried spareribs with black bean sauce (with “1 to 2 tablespoons fermented black beans.” “Soak fermented black beans... Mince garlic and scallion stalk, then mash with soaked black beans. Combine with sherry, water and soy sauce... Stir in black bean mixture” with other ingredients, p. 202-03). Steamed spareribs with black bean sauce (“Mince garlic and mash with soaked black beans; then combine with cornstarch, soy sauce and sugar. Pour mixture over ribs,” p. 206). Braised spareribs with black bean sauce (“Mince garlic and ginger root, then mash with soaked black beans,” p. 206). Braised spareribs with red bean cheese (p. 206). Stir-fried beef and bean curd (p. 215). Red-simmered beef (with soy sauce, p. 245-46). Red-simmered (or cooked) duck (with soy sauce, p. 267-71). Stir-fried chicken with soy jam (p. 325-26). Stir-fried chicken and tomatoes with black beans [“fermented black beans”] (p. 327-28). Stir-fried deep-fried chicken with brown bean sauce (p. 329). Stir-fried deep-fried chicken with soybean paste (p. 330-31). Red-cooked or soy chicken (p. 366-69). Steamed fish topped with black bean sauce [“fermented black beans”] (p. 411-12). Braised soy fish (p. 429-32). Braised fish with deep-fried bean curd (p. 434). Braised fish steaks with bean curd (p. 435). Deep-fried bean curd stuffed with minced fish (p. 448). Braised dried oysters with bean curd sticks [dried yuba sticks] (p. 483). Stir-fried shrimp with bean curd I and II (p. 496). Stir-fried shrimp with deep-fried bean curd (p. 497). Stir-fried shrimp with black bean sauce [“fermented black beans”] I and II (p. 500). Poached shrimp with ham and bean curd (p. 527). Basic omelet with bean curd I and II (p. 551-52). Fried eggs with soy sauce (p. 569). Soy eggs (also called pot-stewed or red-stewed eggs). Soy duck eggs (p. 574). Basic stir-fried bean curd (p. 593). Basic deep-fried bean curd (p. 594). Deep-fried bean curd with dried shrimp sauce. Steamed stuffed bean curd (with pork, p. 595). Miscellaneous bean curd (p. 595-96). Stir-fried spinach and white cheese [fermented tofu] (p. 618-19). Stir-fried string beans and white cheese [fermented tofu] (p. 620-21). Basic Buddhist vegetable dish (A vegetarian dish known as Lo Hon Ji or Lohan Tsai; “Variation: In step 4, stir 2 tablespoons Chinese red cheese, mashed, into the water-soy mixture;...” p. 623). Soy jam

noodles (p. 660). Noodles in brown bean sauce (and hoisin sauce, p. 661). Dips (incl. Dip for deep-fried bean curd; many use soy sauce or hoisin sauce, p. 709-14). Soy-vinegar dressing. Soy-sesame dressing (p. 715, with soy sauce and sesame oil). Soy-oil dressing (with soy sauce and peanut oil, p. 716). Marinades (many use soy sauce, hoisin sauce, brown bean sauce, or red bean cheese, p. 717-24). Sauces (many use soy sauce or yellow bean paste, incl. Sweet-and-pungent sauces, p. 725-39).

The chapter titled “Other Useful Information” tells more about bean curd.

The extensive Glossary of Chinese Ingredients (p. 844-72) contains the following soy-related entries: Bean curd (bean cakes; note that recipes call for a certain number of “cakes” of tofu). Bean curd sauce (see cheese, Chinese white).

Bean curd sticks (dried bean curd [dried yuba sticks = foo jook]; “Long, dried, cream-colored sticks, about ½ inch wide and 20 inches long, but bent in two. Are stiff and striated with an enamel-like surface. Sometimes called ‘Second Bamboo’ because they come from the residue or second layer of creamy bean curd [yuba]. Must be soaked; then they become chewy in texture, nutlike in flavor. Used as a vegetable with soup, steamed fish, stir-fried and braised pork... Other dried varieties include sweet bean curd sticks [tim jook or tiem joke], which are similar but thicker, and are used in fish and vegetarian dishes; and glazed bean curd skin in the form of stiff thin sheets”).

Bean paste, yellow (yellow sauce). Bean sauce, brown (see brown bean sauce). Bean sprouts. Yellow soybean sprouts are larger and coarser than mung bean sprouts, and must be husked. “They also have a stronger, more woody flavor.” Because of their crunchiness, Chinese call them “teeth vegetable.” Beans, black (Type of beans not given. “Note: Sweetened black beans used as a pastry filling sold in Chinese bakeries”). Beans, black fermented beans (black bean sauce or salted black beans). Brown bean sauce. Cheese, Chinese red (red bean curd cheese, spiced red bean curd, or southern cheese). Cheese, Chinese white (bean curd sauce, white bean curd cheese, or white bean sauce). Five Spices (five-flavored powder or five-fragrance spice powder; star anise, anise pepper, fennel, cloves, cinnamon). Hoisin sauce (haisien sauce, Peking sauce, red seasoning sauce, red vegetable sauce, sweet vegetable paste, or sweet vegetable sauce; another variety is called Ten-Flavored Sauce). Pickles, Chinese (pickled vegetables; pickled in soy sauce). Red bean sauce. Soy jam (soybean paste). Soy sauce (light, black, or heavy varieties). Hoisin sauce (p. 855) is a “Thick, dark brownish-red sauce, made from soy beans, spices, garlic and chili. Sweet and spicy.” Used in cooking and as a table condiment.

The chapters titled “Storing Information” and “Soaking Information” include such information on many of the foods listed in the glossary.

The chapter titled “Chinese terminology” (p. 886-91) is especially valuable because it gives the Cantonese names of Chinese foods. It contains the following soy-related entries: Bean curd: Dow foo or dau foo. Bean curd, deep fried: Dow foo pok. Bean curd, spiced: Dow foo kon. Bean curd, watery: Dow foo fa [literally “tofu flowers”; tofu curds]. Bean curd sticks: Foo jook or foo joke. Bean curd sticks, sweet: Tim jook or tiem joke. Bean paste, red: Dow sha or dow cha [azuki]. Beans, black: Woo dow. Bean paste, yellow: Wong dow sa [soy]. Beans, black fermented: Dow see or doe shee. Beans, sweet black: Dow sa. Beans, red: Hoong dow [azuki]. Bean sprouts, soy: Dow gna or dow ngah. Brown bean sauce: Min see jeung or mien see jeung. Catsup: Fon ker jeung. Cheese, Chinese red: Nom yee or Narm yoo [fermented tofu]. Cheese, Chinese white: Foo yee or Foo yoo [fermented tofu]. Hoisin sauce: Hoy sin jeung or hoy sien jeung. Oil, peanut: Far sung yow. Oil, sesame: Jee ma yo or jee ma yow. Peanuts: Far sang or far sung. Red bean sauce: Saang see jeung or shargn she jeung [azuki]. Sesame paste: Jee ma jeung. Sesame seeds: Jee ma. Soy jam [chiang]: Yewn she jeung. Soy sauce: See yu or shee yau or sho yu. Soy sauce, light: Sang chau. Soy sauce, dark: Chow yau or cho yo. Soy sauce, heavy: See yau or jeow yau.

Note: This is the earliest English-language document seen (April 2012) that uses the term “shee yau” to refer to Cantonese soy sauce, or the term “See yau” or “jeow yau” to refer to heavy Cantonese soy sauce.

Illustrations show: A bottle of Chou Soy sauce made by Amoy Canning Co. (p. 112). A brick-shaped can of “Thick Soy” made by Tung Chun Canning Co. (p. 126). An earthenware jug of “Ho Sang Yick Soy Sauce” (p. 203). A Mason-type jar of fermented bean curd made by Tung Chun Soy (p. 596). A bottle of Koon Chu* soy [sauce] (p. 715). Address: Greenwich Village, New York City.

234. Nelson, Andrew Nathaniel. 1966. The modern reader’s Japanese-English character dictionary. Revised ed. Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle Co. 1109 p. Index. 24 cm. [15 ref. Jap; Eng]

• **Summary:** Radical 37 = dai or oh = big + 3 strokes = #1171 = *daizu* or *ômage* = soy bean (p. 290).

Radical 75 = tree; at left = ki hen. #2211 = eda of edamame. Radical 82 = Hair of animals, ke. Radical 85 = Water + 11 strokes = soymilk. Radical 151 = Bean + 7 strokes = mame (bean) or tou = toufu. Radical 164 = Liquid (Sake sukuri) + 11 strokes = shoyu no sho. Radical 201 = Yellow (variant is 11 strokes).

Soy related words: (1) Miso: *miso* (fermented [soy] bean paste; flattery, p. 247). *miso o tsukeru* (to make a mess of, p. 247). *miso shiru*, *misojiru* (bean-paste soup, p. 247). *miso mame* (soybeans, p. 247). *misoni* (boiling with bean paste, p. 247). *misozuke* (pickled in bean paste, p. 247). *misokoshi* (bean-paste strainer, p. 247). *misosuri* (grinding bean paste; flattery, p. 247). *temai miso* (self praise; bean paste of one’s

own making, p. 420). *miso dengaku* (tofu baked [grilled] with miso, p. 621). *konamiso* (powdered miso, p. 691). *nuka miso* (salted rice-bran paste, for pickling, p. 694). *karamiso* (salty miso, p. 869).

(2) Tôfu [tofu]: *yakkodôfu* [yakkodofu] (tofu cut in cubes, p. 47). *kôridôfu* [kori-dofu] (frozen tofu, p. 75). *unohana* (refuse from tofu, p. 119). *shimidôfu*, *kogoridôfu*, *kogodôfu* [shimi-dofu, kogo-dofu, kogori-dofu] (frozen tofu, p. 192).

Note 1 This is the earliest (and only) English-language document seen (May 2012) that contains the word *kogoridôfu* or the word *kogodôfu* (written as one word, with diacritics) which it says is the same as *shimidôfu*, all of which it defines as frozen tofu.

age (fried tofu, p. 447). *kara*, *okara* (tofu refuse, p. 525). *aburage* (fried tofu, p. 543). *yuba* (dried tofu [sic], p. 561). *yakidôfu* [yaki-dofu] (broiled bean curd, p. 578).

Note 2 This is the earliest English-language document seen (May 2012) that contains the word *yakidôfu* (written as one word, with diacritics).

nama-age (fried tofu, p. 618). *dengaku* (tofu baked with miso, p. 621). *inarizushi* (fried tofu stuffed with seasoned rice, p. 668). *tofu* (bean curd, tofu, p. 843). *kirazu* (tofu refuse [okara], p. 941). *kôyadôfu* (frozen tofu, p. 978).

toshi no mame ([soy] beans of the bean scattering ceremony, p. 88).

mitsumame (boiled [soy] beans with treacle / molasses, p. 328).

edamamé (green soybeans, p. 494). *irimame* (parched [soy] beans, p. 576). *nimame* (boiled [soy] beans, p. 578).

nattô (fermented soy beans, p. 697).

tamari (soy sauce, p. 564).

azemame (soy beans grown on rice-field ridges, p. 624). *moyashi* (artificially sprouted beans, p. 780). *moyashi mame* (beans for sprouting, p. 781). *hôrai mame* (sugar-coated beans, p. 786).

kuromame (black soy bean, p. 992).

mame abura (soybean oil, p. 843). *tônyû* (soybean milk, p. 843). *kinako* (soybean flour, p. 991). Address: PhD, Tokyo, Japan.

235. Schenk, E.G.; Naundorf, G. 1966. Lexikon der tropischen, subtropischen und mediterranen Nahrungs- und Genussmittel [Dictionary of tropical, subtropical, and Mediterranean foods and food adjuncts (stimulants / enjoyables)]. Herford, Germany: Nicolaische Verlagsbuchhandlung Herford. xiv + 199 p. Index. 21 cm. Series: Manualia Nicolai I. [200* ref. Ger]

• **Summary:** Pages 70-71 give a list of Japanese foods (after Mayerhofer and Pirquet 1926) in no apparent order, with the Japanese name followed by a translation of that name into German. Included in the long list are: Akamiso, miso, shiromiso, tofukasu [okara], daizu, fu [dried wheat gluten], kingyo-fu, kiri-fu, kiri-mochi [frozen and dried

rice cake], ame [malt extract], mirin, aburage [tofu fried in vegetable oil], natto–Bohnenkäse, Tofu–Sojatopfen, Tonyu–Sojamilch, azuki [small red beans], kwansen-fu, kinako–Sojabohnenmehl, geröstet, amasake–unvergorener Sake, umeboshi, koritofu [frozen and dried tofu], midzuame [soft ame = rice syrup], shoyu–Sojasauce, yuba–eine Bohnenpeise. Plus many types of sea vegetables.

On pages 140-42 the following terms are defined in German: Soja [soya], Sojabohne [soybeans], Sojabohnenkäse [soy cheese or tofu], Sojabohnenmehl [soybean meal], Sojabohnenöl [soybean oil], Sojakäse [fermented soy cheese], Sojamilch [soymilk], Soja-Nahrungsmittel [soyfoods]: Koji, Miso, Tofu, Nato [sic, natto], kondensierte Soja-Milch [condensed soymilk], Japanische Verarbeitungen [Japanese processed foods: Japanische Soja-Sauce Shoyu (Shoyu), Miso, Tofu], Soja-Nahrungsmittel, javanische [Javanese] soyfoods: Tao-Hoe, Tempeh, Ketjap, Tao-Tjong [a term, and perhaps a product, between *doujiang* and *tao-tjo*, Indonesian-style miso], Sojatunken, Soja-Verarbeitungen: Sojamilch, Bohnenkäse, Teoufou (China), Tofu (Japan), Dan Phu (Vietnam), Natto (Japan), Tao-tehe (China).–Bohnenbrei Miso (Japan), Tao-tjiung (*doujiang*, China).–Sojasauce: Shogy [sic, Shoyu] (Japan), Tsiang-Yeou, Tao-yu (China), Ketjap (Java), Tuong (Vietnam).–Gärmittel: Kiut see (Japan). Then a table shows the nutritional composition of 8 of these foods.

Note 1. This book contains more than its fair share of errors and could be better organized.

Note 2. This is the earliest German-language document seen (May 2005) that uses *Sojabohnenkäse*, the German word meaning “soybean cheese,” to refer to tofu. Address: 1. Prof. Dr. med. habil., Dr. phil. nat, Laurensberg ueber Aachen, Germany.

236. Wong, Ella-Mei. 1966. Chinese cookery. New York, NY: Arco Publ. Co. [xi] + 100 p. Illust. Index. 23 cm.

• **Summary:** A charming book by an Australian born woman of Chinese ancestry, copyrighted in 1961. She presently “conducts the Chinese Cookery course at East Sydney Technical College... She has also published features in the *Australian Woman’s Weekly*.” The foreword is by D.W. Grover, 1961 Head of Food School, East Sydney Technical College.

Chapter 1, “Chinese ways and means,” includes three sections on ingredients. The first such section, “Dried ingredients,” has an entry for “Bean curd (*foo jook*) [dried yuba sticks] (p. 7). This is sold in sticks or sheets [yuba]; soak in warm water for 10 to 15 minutes. It has little flavor of its own but is highly nutritious and is served with other foods to absorb their flavours. Used in soups and braised dishes—the latter are served on days of fasting.”

The third such section, “Sauces and seasonings,” includes (p. 10-11): “*Hoysin jeung* [Hoisin sauce, *hoy sin jeung*]: Obtainable in tins. This is made of [soy] bean

flour and spices, very rich in flavour and color. It is easy to become accustomed to this taste.”

“Monosodium glutamate... It is of vegetable origin and used very sparingly and with discretion it enhances the natural flavour of foods. The Chinese version is a fine white powder called Ve-tsin. In Australia it is known as Zip.”

“Red bean curd [red fermented tofu]: A soy bean product, obtainable in tins. The red colour is added.”

“Soy sauce: Made from salted and fermented soy beans. No Chinese kitchen is ever without it. There are different grades, ranging from thin to thick, and the colour varies from light brown to dark reddish brown...”

“*Taofu* [tofu]: Made from soy bean curd, a similar texture to soft cheese. It has no flavour of its own, but is highly nutritious. It is usually cut into blocks about one inch by 3 inches. In its fresh state it has a milky colour and is also cut into one-inch cubes and deep-fried.”

“White bean curd: Made from soy bean, salted and used as an appetizer or with vegetable dishes.”

In Chapter 4, “Vegetables” (p. 31): “Bean sprouts can be cultivated in the kitchen by sprinkling green beans [mung beans] with warm water... The soy bean can also be sprouted, but usually the sprout is tougher.” In this chapter, the recipe for “Fasting food” (*jie*) (p. 33) calls for “3 sticks bean curd (*foo jook*)” and “4 blocks bean curds (*taofu*).” “This dish is eaten during the Moon Festival and on the second day of the New Year.” Each recipe has an English name and a Cantonese name.

In Chapter 7, “Seafood,” the recipe for Steamed whole fish with black beans (*dow see jing yee*) calls for “1 tablespoon preserved Chinese black beans (*dow see*)” (p. 69).

Note 1. Soy sauce and monosodium glutamate (typically ½ teaspoon per recipe) are called for in many recipes in this book.

(2) Rice with red beans (*Hoong dow farn*) calls for “4 tablespoons red beans (*hoong dow*)” (azuki beans) (p. 87). Address: [Australia].

237. Fischer, R.W. 1967. The use of soy in food products. *Soybean Digest*. May. p. 29, 31-32, 35-36, 38.

• **Summary:** An excellent overview, with considerable history. Contents: Introduction. Grisly hand of hunger. Soybean oil. Oriental soy foods. Soy flour and grits (with a good history of Berczeller, A.E. Staley, Shellabarger, Allied Mills, J.R. Short Milling Co. and Wytase). Isolates and concentrates. The war years (during and immediately after World War II, soy flour and grits come to be widely disliked). New products and know-how.

“Oriental soy foods:... In the Orient soybeans have, for centuries, played an important part in human diets as soy milk for infants, shoyu, or soy sauce as we call it, miso, tofu, tempeh, kinako, natto, yuba, etc.”

“Isolates and concentrates: In the mid-1930’s processes

for further refining the protein factors of soy began to appear. The first 70% soy protein concentrate was turned out by Mead Johnson Co. using the Bonato process of sulfur dioxide and sulfurous acid extraction, but was discontinued for lack of adequate markets for the product. In 1936 the Glidden Co. began working on the production of an isolated protein [90-100% protein] from extracted soy flakes for industrial uses. Glidden, as a major manufacturer of resin, wanted the isolate as a stabilizer for the resin used in sizing paper to provide wet strength. By 1939 Glidden was producing an enzyme hydrolyzed isolated protein to be used with egg albumen for its whipping capacity in producing food toppings... Over the years soy protein isolates have found their greatest application in the industrial field, particularly as paper coatings for high gloss products."

A photo shows cans of Worthington Choplets, Soyameat (3 varieties), and Numete—all made from spun soy protein fibers. Address: Soypro International Inc.

238. Hahn, Emily. 1968. *The cooking of China*. New York, NY: Time-Life Books. 206 p. Illust. (many color photos). Index. 28 cm. Series: Foods of the World.

• **Summary:** Another superb work in this superlative series from the editors of Time-Life Books. This book is about cooking in China, where the author lived (in Shanghai), before the 1949 Communist revolution.

Contents: Introduction: The cooking of the world's oldest civilization. 1. An ancient and honorable art. 2. "Chinese cooking" in your own kitchen. 3. Secrets of savor and spice. A reverence for good food. 5. Oriental staff of life. 6. Gentle teas and strong spirits. 7. Feasts for festivals. 8. A cuisine for all continents.

China, the world's oldest existing civilization, has the world's most ancient cuisine—as well as one that is both great and profound (p. 6). When the Red Guards of China's Cultural Revolution appeared in the 1960s, they "attacked every symbol of what they regarded as bourgeois culture. Among the targets in Peking were the city's fine restaurants." In the process they destroyed much of China's culinary heritage—but only inside of China (p. 7). An article by Peggy Durdin in the *New York Times* was titled "Mao's great crime against cuisine" (p. 184). Chinese food is, of course, about life, but it is also about health, and it can resonate on numerous symbolic levels (p. 7).

The southern provinces of China, Fukien, Kwantung, Yunnan, and Kwangsi, enjoy tropical temperatures year round and more than 80 inches of rain. Here rice is the main crop. Yet China is a mountainous country, with 60% of its land at elevation 6,500 feet or higher; only 11% of its land can be cultivated (compared with 80% in the USA) (p. 10). Fukien, a coastal province to the south, makes the best soy sauce in China, and stewing is called "red cooking" because of the color imparted by the soy sauce (p. 16, 42).

Vegetable oil is very important in China because the

Chinese rarely use butter (p. 29). "For protein the Chinese depend heavily on the soybean, which has for this reason been called the cow of the East." Soybean oil is used for cooking. Soybean milk is a good substitute for cow's milk. And "doctors, even Western doctors—prescribe it for babies who cannot get mothers milk and are allergic to cow's milk" [sic]. From soymilk one can make "bean curd, an exceptionally high-protein food known in China as 'the meat without bones.'" Bean curd is made by curdling soybean milk with gypsum, then pressing the curds into pieces about 3 inches square by ½ inch thick. "The thickened curd skin [sic, yuba] is a food by itself, with a more concentrated flavor. Fermented bean curd [fermented tofu] tastes much like cheese." Both soy and mung-bean sprouts are used in China, "In one form or another the soybean can be found in dishes eaten at every meal" (p. 29).

A two-page color photo spread and legend (p. 61-63) shows (numbered) basic Chinese ingredients, incl. "13. Fresh bean curd. 14. Dried bean-curd skin" [yuba]. Buddhist monks and nuns in China are strict vegetarians; special foods that simulate meat have been developed for them. These include vegetarian "duck made from crisp beancurd skin, colored and shaped to look like the bird's flesh" and "chicken roll in *hoisin* sauce, the 'chicken' made of soft soybean curd" (p. 64, 67, 70).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "beancurd skin," apparently to refer to yuba.

A full-page color photo and legend (p. 74-75) shows (numbered) Chinese sauces and condiments, incl. "1. *Hoisin* sauce. 3. Soy sauce. 8. Yellow-bean paste, or thick bean sauce. 11. Fermented black beans. 14. Red bean [azuki] paste." "Among the best known of Chinese seasonings is soy sauce, which was mentioned in several Confucian classics as early as the Fifth Century B.C." [sic]. Other condiments made from soybeans are bean paste (for preserving and flavoring meat) and *hoisin* sauce (widely served with Peking duck). "It is said that the best grades of soy sauce can take as much as six to seven years of aging to reach perfection, and that the making of superb soy sauce requires 'as much art in its preparation as good French wines'" (p. 74-75, 77).

The controversy over M.S.G. is discussed. "A really god Chinese chef considers it a questionable shortcut for giving taste to second-rate foodstuffs, but most Chinese cooks admit that its use in certain dishes is perfectly valid" (p. 77-78).

The emperor Chien Lung (1735-1796), 4th ruler in the Manchu [Qing] dynasty, wrote an *Ode to Tea* (p. 91). In China there is an intimate association between eating and health (p. 91).

Recipes: "Steamed bass with fermented black beans *Tou-shih cheng hsien yu* (with "2 teaspoons fermented black beans," soy sauce, Chinese rice wine, and shredded fresh ginger root, p. 104).

Most festivals (each with a feast) in China are based on

events of agricultural importance; the two most important are New Years and the Moon Festival (p. 155, 162, 164-65). A Peking duck is “brought to the exact degree of plumpness and tenderness through force-feeding,” then roasted slowly, suspended by hooks, in a mud-lined oven “until the thick, fat skin becomes golden in color. This crackled skin is the choice part of the dish.” The skin, a piece of the meat, a spring onion, and thick, sweet hoisin are served enfolded in a thin wheat-flour “pancake” (p. 158, 15).

The history of chop suey (unknown in China) and chow mein (had an honorable origin in China) are discussed (p. 178-79).

The first wave of Chinese to America came with the gold rush and transcontinental railway. Most were laborers from southern China. The first Chinatown in the USA was established in San Francisco (1850s), followed by New York City (Manhattan, 1870s). Most early American Chinese restaurants reflected their social status, serving inexpensive foods. In the early 20th century, as China’s Republican revolution was gaining momentum, a second wave arrived to study. These young people, also mostly from southern China, came from far more prosperous backgrounds than those in the 1st wave and they wanted better food. Restaurants were started or upgraded to suit their tastes. Thus, it “was the southern school of cookery that first spread over the world outside China” (p. 179).

China has three great regional cuisines: Cantonese (southern), northern, and Szechuan (p. 179). Six photos show “The Americanization of the fortune cookie: Assembly line at a factory in New York City’s Chinatown.” A two-page spread shows many of the “fortunes” found in fortune cookies (p. 195-97).

“A guide to ingredients in Chinese cooking” (p. 198-99) includes: Bean curd, fresh: Square. Bean-curd skin [yuba] (“Thin stiff sheets of dried bean curd. Sold by weight... {5 to 6 sheets weigh about 1 ounce}”). Bean sprouts (“Young sprouts of the mung bean”). Black beans, fermented (“Strongly flavored, preserved black soybeans.” Sold in cans or plastic bags). Brown bean sauce (“Thick sauce made from fermented yellow beans [huang dou = yellow soybeans], flour and salt. Sold in cans of 1 pound or more”). Hoisin sauce (“Sweet, brownish-red sauce made from soybeans, flour, sugar, water, spices, garlic and chili for use in cooking. Sold in 1-pound cans and up”). Oyster sauce (“Thick brown sauce with a rich flavor, made from oysters, soy sauce and brine”). Red bean paste (“Thick, sweet paste made from red soybeans” [sic, azuki beans]). Salted eggs and thousand-year eggs. Sesame seeds and sesame seed oil. Soy sauce (“Pungent, salty, brown liquid made from fermented soybeans, wheat, yeast [sic, mold] and salt”). Vegetable steak (“A vegetarian food that looks like a small beefsteak but is made from wheat gluten. Sold in cans”). Address: Author, lives in England with her husband.

239. Hahn, Emily. 1968. *Recipes: The cooking of China*. New York, NY: Time-Life Books. 119 p. Illust. (many color photos). Index. 23 cm. Series: Foods of the World. Revised ed. 1973, 1980, 1981. [1 ref]

• **Summary:** A recipe for “Shua-yang-jou–Mongolian fire pot (rinsed lamb)” (p. 28-29) calls for “1 tablespoon fermented red bean curd, mashed.”

Note: This is the earliest English-language document seen (Oct. 2011) that contains the term “red bean curd” or that uses the term “fermented red bean curd” (or “fermented red beancurd”) to refer to red fermented tofu.

The excellent “Guide to ingredients used in Chinese cooking” (p. 115-19) is identical to that found in the larger companion volume, *The Cooking of China* (Hahn 1968, p. 198-99). Address: Author, lives in England with her husband.

240. Binding, George J. 1969. The soya bean—a vegetable full of body-building protein. *British Vegetarian*. March/April. p. 155-57.

• **Summary:** The “soya bean has the highest protein content of any vegetable. As such it is God’s gift to man and is a must for vegetarians. In the Far East it is known as ‘the meat of the soil.’” The author spent many years in East Asia, where he studied the foods of the region. Soya beans can be used to make a wide variety of foods; the author briefly describes the following: Bean shoots [soy sprouts], soya bean milk, bean curd or vegetable cheese [tofu], yuba, natto, miso, soy sauce, and boiled whole soybeans.

Since World War II, America has become the largest producer of soya beans. Before that war, England was one of the largest importers of soya beans in the world. “All vegetarians should make certain of a sufficient daily intake of protein. There’s no more effective and satisfying way of doing so than eating soya beans.” Address: M.B.E.

241. Watanabe, Tokuji. 1969. Industrial production of soybean foods in Japan. Paper presented at United Nations Industrial Development Organization Expert Group Meeting on Soya Bean Processing and Use. 38 p. Document: ID/WG.45/3. Held 17-21 Nov. 1969 at Peoria, Illinois. [16 ref]

• **Summary:** Contents: Tofu and its industrial production: Process of tofu making, tofu production as an industry, equipment for tofu production, varieties of tofu, new materials of tofu, new types of tofu, aburage and other deep fried tofu.

Note: This is the earliest English-language document seen (May 2012) that contains the term “deep fried tofu” (regardless of hyphenation).

Kori-tofu and its industrial production: Process of kori-tofu making, kori-tofu production as an industry, equipment for kori-tofu production, distribution of kori-tofu, utilization of by-products.

Yuba and its industrial production.

Kinako [roasted whole soy flour] and its industrial

production. The Japanese word can be written either in hiragana or using two Chinese characters which mean “yellow flour.” Kinako is made from whole soybeans. Sometimes the soybean hulls are removed before roasting. It is widely used as an ingredient in Japanese confections [such as kinako mochi or Abekawa mochi (toasted mochi in kinako); it was traditionally sold along the banks of the Abekawa River in Shizuoka, Japan]. About 12,000 metric tons of soybeans are used per year in making kinako.

New soybean food materials and their industrial production: New soybean food materials, usage of new soybean food materials, future of new soybean foods, other food uses of soybeans.

Natto and its industrial production: Process of natto making, equipment for natto production, natto production as an industry.

Miso and its industrial production: Varieties of miso, Process of miso making, miso production as an industry, industrialization of miso making, distribution of miso, future prospect of demand for miso, mycotoxins and fermented soybean foods.

Shoyu and its industrial production: Process of shoyu making, shoyu production as an industry, nitrogen utilization ratio in shoyu making, special shoyu.

Figures show: (1) Flow sheets of production of traditional soybean foods in Japan: Tofu, kori-tofu, yuba, kinako, natto, miso (with koji), shoyu. (2) NK-type soybean cooker (by courtesy of Kikkoman Shoyu Co. Ltd.). (capacity: 1 metric ton of defatted soybean meal). (3) Continuous cooker of soybean meal (by courtesy of Yamasa Shoyu Co. Ltd.). (capacity: 1 metric ton of defatted soybean meal per hour).

Photos show: (1) Tofu soaked in water for sale. (2) Large-scale tofu factory (by courtesy of Tokyo Tofu Co., Ltd.). (3) Continuous cooker of ground soybeans (by courtesy of Masuko Sangyo Co., Ltd.). (4) Decanter, a kind of continuous centrifuge (by courtesy of Kokusan Seiko Co., Ltd). (capacity: 3,000 kg of ground soybeans per hour). (5) Factory of packed tofu from spray-dried soybean milk (by courtesy of Nippon Tanpaku Kogyo Co., Ltd.). (6) Continuous deep-fryer of aburage (by courtesy of Iwase Tekkosho Co., Ltd). (capacity: 1,000 to 1,500 pieces per hour). (7). Daiya Kori-tofu (Left one in the dish is swollen by hot water). (8) Bird’s-eye view of large scale factory of kori-tofu (by courtesy of Misuzu Tofu Co., Ltd). (capacity: 10 to 15 metric tons of soybeans per day). (9) Soaking of large cake of tofu for precooling during making of kori-tofu (by courtesy of Misuzu Tofu Co., Ltd). (10) Continuous freezing equipment used in making of kori-tofu (by courtesy of Misuzu Tofu Co., Ltd). (11) Continuous thawing apparatus of frozen tofu (by courtesy of Misuzu Tofu Co., Ltd). (capacity: 10,000 to 15,000 pieces per hour). (12) Yuba plant (by courtesy of Ohara Co., Ltd). (13) Natto mixed up by chopsticks. (14) Inside of fermentation room

for natto making (by courtesy of Suzuyo Kogyo Co., Ltd). (15) Two brands and varieties of miso, both in plastic bag and on dish. (16) Rotary cooker of soybean (by courtesy of Hinode Miso Co., Ltd). (capacity: 1 metric ton of soybeans). (17) Continuous rice cooker (by courtesy of Hinode Miso Co., Ltd). (capacity: 1.5 metric tons of rice per hour). (18) Rotary koji fermenter (by courtesy of Miyasaka Miso Co., Ltd). (capacity: 1.8 metric tons of rice in each fermenter). (19) Pasteurizer of miso (by courtesy of Nagata Machinery Co., Ltd). (capacity: 1 metric ton of miso per hour). (20) Fermentation tank of moromi [mash] (by courtesy of Kikkoman Shoyu Co., Ltd). (capacity: 1.5 metric tons of rice per hour). (21) Shoyu in large glass bottle and smaller plastic container. (22) Large-scale koji fermenter (by courtesy of Yamasa Shoyu Co., Ltd).

Concerning natto: The surface of each natto “soybean is covered with a viscous sticky substance, which has the property of forming long stringy threads when mixed up (Photo 13). The longer the strings, the better the quality of natto.” The texture of the cooked soybeans is softened by the enzymes of *Bacillus natto*. About 50,000 metric tons of soybeans are used each year to make natto. It is most popular in northeastern Japan (Tohoku region). Natto is fairly perishable, and excess ammonia will be produced by overfermentation. There are about 1,300 plants that make natto in Japan; the average plant consumes about 100 kg/day of soybeans. Recently, however, large, mechanized factories that consume 2-3 metric tons/day of soybeans have been constructed. From 10 kg of whole dry soybeans about 18 kg of natto can be made. One package of natto containing 100 gm costs 15-20 yen (about 4-6 cents U.S.).

Note: This is the earliest English-language document seen (Jan. 2012) that uses the word “sticky” to describe natto. Address: Food and Nutrition Div., Food Research Inst., Ministry of Agriculture & Forestry, Tokyo, Japan.

242. Centre de Documentation Internationale des Industries Utilisatrices de Produits Agricoles (CDIUPA). 1970--. IALINE (Industries Agro-Alimentaires en Ligne) base de données [IALINE (Food and Agricultural Industries On-Line) database]. 1, avenue des Olympiades-91300 Massy, France. [271542 ref. Fre]

• **Summary:** This is the world’s best database for French-language publications related to food and nutrition. It first became available for use in Jan. 1970, and that is also the date of the earliest record in the database. It is produced by the Center for International Documentation on Industrial Utilization of Agricultural Products (CDIUPA), founded in 1965 by the French Ministry of Agriculture. CDIUPA is administered by APRIA (*Association pour la Promotion Industrie Agricole*), which is a member of the International Commission of Agricultural and Food Industries.

The current contents of the database is published in a monthly journal titled “Industries Agro-Alimentaires:

Bibliographie Internationale,” which began under that title in Jan. 1983. It was preceded by *Bibliographie Internationale des Industries Agro-Alimentaires. Bulletin Bibliographique* (published from Jan. 1967 to Dec. 1982). In the monthly journal, the citations are grouped under 6 broad headings: 1. General (with 8 subcategories). 2. Agro-food industries (industries agroalimentaires; with 17 subcategories; Many documents on soyfoods are cited in subcategory N titled “*Protéines d’origine animale, végétale, microbiologique, algues et levures aliments*”). 3. Fermentation industries (with 6 subcategories). 4. Food microbiology. 5. Food toxicology. 6. Utilization and adding value to agricultural and food-industry by-products. Biotechnology. The journal contains 3 indexes: Subject index. Index of sources (periodicals [with journal names written out in full], acts of congress, books, theses). Author index.

Information related to soyfoods is likely to be found under the following headings in the subject index: *Aspergillus oryzae*; Farine de soja (incl. soy flour, and roasted soy flour or kinako); Huile de soja (soy oil); Koji; Lait de soja (soymilk); Miso; Nato (incl. natto); Produit à base de soja (incl. dawa-dawa, kinema, soy cheese [western style], fermented black soybeans / Hamanatto, soynuts, soy ice cream, soy yogurt, thua-nao, yuba), Protéine de soja (soy protein products); Protéine de soja, Produit extrudé (extruded soy products); Protéines d’origine animale, végétale; Sauce de soja (soy sauce); Soja (incl. green vegetable soybeans); Soja, germe (soy sprouts); Sufu (fermented tofu); Tempeh; Tofu. Address: Massy, France. Phone: (1) 69.20.97.38.

243. Claiborne, Craig. 1970. Dining out in setting of books. *New York Times*. Feb. 27. p. 60.

• **Summary:** In a review of Three Six Nine Restaurant at 12 Elizabeth St. in New York City’s Chinatown, the writer described “an excellent hot soup with fresh and cured pork plus bean curd skin [yuba] and bamboo shoots (Ningpo);... and a spiced chopped bean curd [tofu] dish with peas and hot pepper (Szechuan).”

244. Tanaka, Seiichi; Nakayama, Tokiko; Koda, Maki. 1970. *Chûgoku shokuhin jiten* [Encyclopedia of Chinese foods]. Tokyo: Shoseki Bunbutsu Ryutsukai. 438 p. [Jap]

• **Summary:** Gives nutritional analyses for the various types of Chinese tofu, yuba, and related products (p. 310-13). Address: Japan.

245. Chang, Wonona W.; Chang, Irving B.; Kutscher, Helene W.; Kutscher, Austin H. 1970. *An encyclopedia of Chinese food and cooking*. New York, NY: Crown Publishers, Inc. x + 534 p. Edited by Lillian G. Kutscher. Charlotte Adams, Consulting Editor. Illust. Index. 26 cm. International Cookbook Series edition. [52 ref]

• **Summary:** This comprehensive work, the result of at least 25 years of collaboration, contains over 1,000 recipes. The

4th printing (March 1977) proclaims prominently: “The first Completely Safe Chinese cookbook compiled in accordance with latest food research without MSG (monosodium glutamate).” Following introductory chapters titled “Chinese Cuisine: Background,” “Regional Chinese Cooking,” “Utensils for Cooking, Serving, and Eating,” “Cooking Preparations,” and “Cooking Techniques,” there is a detailed “Guide to Ingredients” (p. 22-57), which describes the following soy-related foods and gives Cantonese / Mandarin pronunciations / transliterations (see p. 22): beans, black (wu dow / wu do); beans–black salted fermented beans (dow si / do shih; used as a condiment or flavoring agent [seasoning]. Aroma: fragrant, appetizing); bean cake, fermented (fu yu / fu yu [fermented tofu]); bean curd (dow fu); bean curd, dried (dried bean curd [dried yuba], p. 25, 47–tiem jook or fu jook pei / t’ien ch’u or fu pi chi); bean curd cheese, red (nam yu / nan yu); bean filling, sweet (dow sa / do sa; made from red [azuki] beans or green / [mung] beans); bean sauce, brown or yellow (mien see jiong); bean sprouts (large, from soybeans) (wong dow gna / huang do ya); hoisin sauce (red seasoning sauce) (hoy sin jiong / hai hsien jiang); soy sauce (dark lo tsow / lao tsou; heavy–jiong yow / jiang yu [jiang you]; light–sang tsow / sheng tsou; table soy sauce–sin tsow / shien tsou) “Dark soy sauce has caramel added for coloring. Heavy soy sauce, which has a slightly sweet smell, is also known as black soy. Light soy sauce is the most delicately flavored and is light brown in color. Japanese soy sauce, somewhere between the Chinese light and heavy, is preferable to domestic brands but inferior to Chinese brands.”

Vegetable steak (mien gon / mein jing) “Meat substitute made from wheat gluten. Shape: 3-inch square or round patty ½ inch thick.” Brown, chewy, and firm. Sold in cans.

Photos (black and white, p. 47) show fermented black beans, fresh bean curd, pressed bean curd, bean curd sticks and bean curd sheets [both kinds of yuba, but “bean curd sheets” on p. 47 are called “bean curd, dried”], brown bean sauce, and large fresh bean sprouts.

Note 1. This is the earliest English-language document seen (Nov. 2008) that uses the word “dow fu” (or “dow-fu”) to refer to Chinese-style tofu.

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the term “bean curd sheets” or the term “fu jook” or the term “fu jook pei” or the term “fu pi chi” or the term “t’ien ch’u” to refer to yuba or to dried yuba sticks.

Pages 58-60 contain a “Shopping list for Chinese cupboard.” Foods are listed alphabetically in English, with the Cantonese term romanized and Chinese character forms. Next come the 1,000 Chinese recipes divided into chapters. One chapter is titled “Bean Curd” (p. 422-34), which includes Ma Po Dow Fu (p. 433); there are so many recipes for regular tofu (dow fu) in this book that we do not have room to list them all. The many other soy-related recipes are listed in the excellent index.

Recipes for “bean cake, fermented” [fermented tofu] are: Scrambled eggs with fermented bean cake (Fu yu don, Canton, p. 134). Duck with fermented bean cake (Fu yu ta, Adapted, p. 276). Steamed pork with fermented bean cake (Fu yu tsing ju yoke, Canton, p. 292). Stir-fried green beans with fermented bean cake (Fu yu tsang dow, Canton, p. 391). Lettuce and fermented bean cake (Fu yu sang tsoi, Canton, p. 392). Spinach and fermented bean cake (Dow fu bo tsai, General, p. 399). Watercress and fermented bean cake (Fu yu sai yong tsoi, Canton, p. 40).

Recipes for “black beans, salted” [fermented black soybeans] are: Pork with bitter melon and salted black beans (Fu gwa yoke si, Canton, p. 305). Shrimp with bitter melon and salted black beans (Fu gwa dow si har, Canton, p. 306). Steamed spareribs with salted black beans (Dow si pai gwut, Canton, p. 320). Beef with bitter melon and salted black beans (Fu gwa ngo yoke do si jiong, Canton, p. 340). Black bean sauce (Huk dow tsup, Canton, p. 436; with garlic and ginger. Note 3. This is the earliest separate recipe seen {Nov. 2008} for “Black bean sauce”).

Recipes for “bean curd, dried” [dried yuba] are: Pig’s feet with dried bean curd soup (Ju gyok tiem jook tong, Adapted, p. 113; with “10 sheets dried bean curd.” Soak sheets in hot water for 30 minutes. Drain, cut crosswise into pieces 1 inch wide, then add to soup). Spare ribs with dried bean curd soup (Pai gwut shiu tiem jook, Adapted, p. 321). Dried bean curd strips with soy sauce (Hung shu tiem jook, General, p. 424). Vegetarian ham dried bean curd (Sue ho twei dow fu, Shanghai, p. 429; with “20 sheets dried bean curd”).

Recipes for “bean curd skin” (or bean curd sheets) [yuba sheets, fresh or dried] are: Red-cooked carp with bean curd skin (Fu pi hung sao yu, Shanghai, p. 158; with “bean curd skin to cover” carp). Red-cooked carp with bean curd skin—Approved ulcer recipe (Hung sao li yu dow fu pi, General, p. 158; with “¼ lb. dried bean curd skin {about 20 pieces, 1½ by 5 inches}. Soak for 30 minutes in hot water. Drain. Cut into 2-inch squares).

Recipes for “frozen bean curd” [frozen tofu]: Frozen bean curd with soybean sprout soup (Dung dow fu dow ya tong, Adapted, p. 90; with “2 cakes frozen bean curd” and “½ lb. soy bean sprouts.” “Defrost frozen bean curd by covering with cold water, letting stand 2 to 4 hours before cooking. Then cut each piece into 10 to 12 thin slices”). Spareribs with frozen bean curd (Pai gwut shiu dung dow fu, Adapted, p. 320; with “4 cakes frozen bean curd”). Stir-fried frozen bean curd (Tsao dung dow fu, Peking, p. 422; with “6 cakes frozen bean curd. * Wrap 2 to 3 pieces fresh bean curd together in waxed paper, freeze until hard”).

Recipes for “pressed bean curd” [pressed tofu]: Pressed bean curd shrimp (Sha tze gahn si, Shanghai, p. 178, with “4 pieces pressed bean curd”). Golden strips with pressed bean curd (La jiao tsao san sih, Hupeh, p. 313). Pressed bean curd and celery with stir-fried beef (Dow fu gahn ching tsai ro

si, Shanghai, p. 357). Stir-fried pressed bean curd with pork (Dow fu gahn tsao ro si, Shanghai, p. 427). Stir-fried pressed bean curd with chicken (Dow fu gahn tsao gee si, Shanghai, p. 427).

Recipes for “soybean sprouts” [soy sprouts]: Spareribs soybean sprout soup (Pai gu dow ya tong, General, p. 112). Beef shank soybean sprout soup (Wu hwa niu ro hwang dow ya tong, General, p. 112). Braised soybean sprouts (Hung sao hwang do ya, Shanghai, p. 376).

Note 4. This is the earliest English-language document seen (Nov. 2008) that uses the term “hwang dow ya” or the term “hwang do ya” to refer to soybean sprouts. Address: USA.

246. Wu, Lawrence C. 1970. Lipid-protein films for human consumption. MS thesis, University of Florida, Gainesville, FL 32611. 210 leaves. Illust. 29 cm. *

• **Summary:** Note 1. This is the earliest English-language document seen (Oct. 2012) that uses the term “lipid-protein films” to refer to yuba. In subsequent publications, Wu used the term “protein-lipid films” or “soy protein-lipid films” instead.

Note 2. Lawrence C. Wu was born in 1929. Address: Univ. of Florida, Gainesville.

247. Dwan, Lois. 1971. Roundabout. *Los Angeles Times*. May 9. p. Q50.

• **Summary:** In a review of The Golden Dragon, a Cantonese restaurant, the writer enjoyed “fresh clams steamed in black bean sauce.” Chicken was “combined with pressed to fu [tofu] and tree fungus,”

The chef added “whole chestnuts, ginkgo nuts, bean-curd skin, and fun see (transparent noodles) to a meatless vegetable dish,…”

248. Brissenden, Rosemary L. 1971. Joys and subtleties: South East Asian cooking [1st American ed.]. New York, NY: Pantheon Books. A Div. of Random House. 262 p. Index. 19 cm.

• **Summary:** Contents: Acknowledgements. A note on this American edition. Weights and measures. 1. Introduction to South East Asian food. 2. Utensils, methods, ingredients, glossary. 3. Indonesia. 4. Malaysia and Singapore: Malay, Chinese, Indian, Miscellaneous Malaysian. 5. Thailand.

Ingredients include (p. 35-36): Monosodium glutamate (use sparingly), soya bean curd (incl. “dried bean curd [yuba], used only in Chinese cooking, comes in flat sheets or in twists”), soya sauce (the 3 types used in this book are light, dark {which is thicker and heavier}, and Javanese {which is sweet and very thick}). It is “sometimes available in bottles called Ketjab Manis [Ketjap Manis], or Ketjap Benteng, under the label of Conimex”). A recipe (p. 36) is given for “Javanese soya sauce” containing dark soya sauce, molasses, and brown sugar.

A table (p. 40) gives the name for 3 soyfoods in English, Indonesian, Malay, Chinese, and Thai, respectively. (1) Soya bean curd, tahu, tauhu, tow fu, taw hu. (2) Soya sauce (dark), ketjap, kichup or tauyu, see you, nam pla siiw. (3) Soy sauce (light), -, -, sung chow, nam pla siiw.

Note: This is the earliest English-language document seen (April 2012) that uses the term “See you” to refer to a type of soy sauce.

Soy related recipes include: Ikan semur djawa (Fish in soya sauce, with “2 tablespoons Javanese soya sauce,” p. 69). Ayam semur djawa (Chicken in soya sauce {Java}, with “dark soya sauce,” p. 76-77). Saté ayam (Chicken saté, with “dark soya sauce,” p. 77-78). Semur daging (Beef in soya sauce, with “2 tablespoons dark soya sauce,” p. 94). Tahu goreng ketjap (Fried bean curd with soya sauce, with “6 squares soya bean curd,” p. 105). Tahu pong (Bean curd omelette, with “3 cakes soya bean curd,” p. 111-13). Fried fish with soya beans (with “2 oz. yellow soya beans {available at Chinese groceries in cans}, p. 149-50.” Baked bean curd (with “8 squares soft bean curd,” p. 181). Steamed, dressed bean curd (with “1 lb. soft bean curd, roughly chopped and drained,” p. 181-82). Address: Melbourne, Australia.

249. Hopkins, Keith. ed. 1971. Hong Kong: the industrial colony. A political, social and economic survey. Hong Kong, London and New York: Oxford University Press. xvi + 422 p. See p. 247. Illust. Map. Index. 22 cm.

• **Summary:** Page 247: “Industries in which collective agreements have been signed include umbrella manufacturing, camphor-wood chest making, rattan ware, bamboo scaffolding, tailoring, dried bean-stick trade [trading dried yuba sticks], vermicelli and noodle manufacturing, the teahouse trade, and junk manufacturing.” Address: Inst. for Advanced Study, Princeton Univ., New Jersey.

250. Liang Shih-chiu [Shiqiu]. ed. 1971. Zui xin shi yong Han Yin ci dan A new practical Chinese-English dictionary. The Far East Book Co. Ltd. 1355 p. See p. 1037-38. 22 cm. [Eng; Chi]

• **Summary:** Gives the Chinese characters and their pronunciation for the following soy-related terms: Soybean cake; bean curd; a semi-transparent film formed on the surface of soybean milk; a store where bean curd is made for sale; spiced and dried bean curd; soybean cheese; legume; (said of girls) in teens; the pods of beans or peas; soybean milk; fermented beans in paste form; residue of soybeans in making bean curd; fermented and seasoned soybeans; pisolite [bean + stone]; legumin; bean sprouts as a vegetable; soybean oil. Address: Editor in Chief.

251. Ohsawa, Lima. 1971. Makurobiotiku ryôri: Shokuyô katei ryôri 700 shu [Macrobiotic cookery: Food-cure home cookery-700 recipes]. Tokyo: Nihon CI Kyokai. xix + 7 +

200 + 6 p. Illust. (many color plates). Index. 26 cm. [Jap]

• **Summary:** This macrobiotic classic contains many chapters and recipes related to soyfoods and other interesting Japanese foods: Azuki and bean cookery (p. 96-98). Tofu cookery (p. 99-104). Miso cookery (p. 104-08; tofu, miso, and shoyu recipes are also scattered throughout the book). The chapter titled “Other Vegetable Cookery” (p. 110-24) contains many recipes for *kôfû*, a term used to refer to fresh wheat gluten. There are recipes for Kofu cutlets and Kofu croquettes (#419, p. 112). Skewered kofu cutlets. Kofu fukume-ni. Kofu rolls (p. 113). Deep-fried kofu chunks (#423, p. 114; it states that kofu can be purchased at Chinese grocery stores). Interestingly, there is no mention of seitan. The same chapter contains 9 yuba recipes (p. 121-22). Recipes for sea vegetables are scattered throughout the book, especially in the chapter on wild vegetables (p. 135-37). Two recipes using amazake as a sweetener appear on p. 152, and homemade amazake beverage is found on p. 169

An extensively revised English-language translation of this book was published in 1974 under the title *The Art of Just Cooking* by Autumn Press. Address: Tokyo.

252. Tsuji, Kaichi. 1971. Kaiseki: Zen tastes in Japanese cooking. Tokyo and Palo Alto: Kodansha International Ltd. 207 p. With 96 color plates. Original woodcuts by Masakazu Kuwata. 29 cm.

• **Summary:** Contents: Foreword by Yasunari Kawabata (winner of the Nobel Prize for literature in 1968). Foreword: The tea ceremony and kaiseki by Sôshitsu Sen (head of the Urasenke School of Tea and the 15th generation descendent of Sen no Rikyu, founder of the school). Utensils and Kaiseki by Seizô Hayashiya (chief curator of the Ceramics Department at the Tokyo National Museum). The twelve months of kaiseki. The kaiseki courses (defines and describes each course, such as Mukôzuke, Misoshiru [pages 168-71 give a fine description of miso and miso soup], Wanmori, Yakimono, Azukebachi, Hassun, etc.). Postscript. Notes on utensils. List of recipes. Glossary: Includes descriptions of miso, natto (incl. *Daitokuji-nattô*, p. 66), shoyu, tofu, and yuba, plus azuki and Dainagon-azuki, many types of wheat gluten (fu), kuzu, mochi, sea vegetables (konbu, nori, wakame), fresh-water algae (Kamogawa-nori, Suizenji-nori [= Kotobuki-nori]), and umeboshi.

This is a magnificent, beautiful book, the finest work available on Japan’s highest form of haute cuisine, Tea Ceremony Cuisine, by a great Japanese Kaiseki chef. It was first published in Japanese by Tan-kôsha Inc. of Kyoto. Soyfoods are used throughout the book—especially miso, since one of the fixed courses in a kaiseki meal is miso soup (*misoshiru*). Many recipes use soy sauce, often the light colored type, usukuchi. Most recipes are shown in an accompanying full-color photo. The tea ceremony was developed at the court of the shogun in late Ashikaga times under such men as Soami, and his father and grandfather,

Geiami (1431-1485) and Naomi, who were painters, landscape gardeners, and poets in Kyoto. The greatest of the tea masters, under whom the tea ceremony (*chanoyu*) took final shape, was Sen no Rikyu (1521-1591). Zen preached the importance of the simple, uncluttered life. As a Zen priest and tea instructor, “Rikyu believed that amid the solitude of calm withdrawal from worldly cares sought by those who practice *chanoyu*, there should exist an element of creativity that leads to the serene enjoyment of beauty. The heart of this creativity, according to Rikyu’s Zen aesthetics, lies in the careful avoidance of the trite, the obvious, and the emphatic. Beauty has its most powerful effects when it arises from suggestion and restraint...”

“Centuries ago, it was a rule that Zen priests ate only two regular meals a day—morning and noon. But since the priests engaged in rather strenuous work, by evening they were often hungry, and to assuage this hunger they would eat a light meal, which was called *yakuseki* (‘hot stones’). This term came from the practice of putting heated stones inside their clothing, by which the priests staved off hunger and cold during long sessions of meditation. When the tea masters developed the custom of serving a meal during the tea ceremony, they called it *kaiseki* (‘breast stones’). By evoking the image used in the Zen term, they seasoned their specialty with religious connotations.”

Soy-related recipes include: Miso soup (with aonorifu, azuki beans, and mustard, p. 29, plate 1, at Opening, the first of the 12 *kaiseki* months). Miso soup (with sesame custard, ginkgo nuts, and mustard), and Mukôzuke (with yuba and bonito flakes, p. 41, plate 9, at Evening). Miso soup (with wakanafu, kampo [kanpyo], and mustard), and Azukebachi (hot dish, with sea cucumbers boiled in saké and mirin, boiled yuba, citron peel garnish, p. 53, plate 17 & 22, at New Year’s). Miso soup (with Sanshu miso, roasted mome bean curd [grilled tofu], and black [soy] beans), and Hassun (with natto wrapped in sea bream fillets, and miso-pickled chisha stems, p. 65-66, plate 25 & 31, at Spring).

Note. This is the earliest English-language document seen (May 2012) that contain the term “roasted mome bean curd;” it refers grilled tofu.

Miso soup (with icicle radish, temarifu, and mustard), and Azukebachi (hot dish, with octopus boiled in saké, and yuba, garnished with Japanese pepper, p. 77, plate 33 & 36, at Doll Festival). Miso soup (with yuba, warabi fern shoots, and mustard, p. 89, plate 41, at Flower Viewing). Miso soup (with walnut custard, trefoil, and mustard, p. 101, plate 49, at Brazier). Miso soup (with eggplants, bamboo shoots, and mustard) and Wanmori (abalone and bean curd custard, chisa leaves [a variety of lettuce], and grated ginger, p. 113, plate 57 & 59, at Off Season). Miso soup (with Sanshu miso, shiratamako, junsai) and Wanmori (with yuba and egg custard, asauri, and wasabi, p. 125, plate 65 & 68, at Morning). Miso soup (with Sendai and Sanshu-miso, koimo, and hojiso), and Yakimono (with deep-fried eggplant slices

coated with white miso and broiled), and Hassun (broiled burdock wrapped in yuba, and deep-fried green peppers, p. 137-38, plate 73 & 76, at All Soul’s Day). Miso soup (with namafu, shirouri, and mustard), and Azukebachi (hot dish, with deep-fried dumplings of bean curd and hamo {sea/conger eel}, and broiled eggplants), and Hassun (with abalone cooked in saké and miso, soy beans in the pod [green vegetable soybeans] p. 149-50, plate 81, 85 & 86, at Moon Viewing). Miso soup (with koimo, zuiki, and sesame seeds), and Mukôzuke (with abalone, bean curd, and sesame seeds), and Wanmori (with boiled pine mushrooms and bean curd, nori, citron peel, p. 161, plate 89 & 92, at Closing).

Interesting Glossary entries: (1) *Daitokuji-nattô*, a “variety to which extra salt has been added, from the Daitokuji temple in Kyoto where it was first made as a preserve to be eaten in times of famine.” (2) “*Fu* is the general name for a light cake made of wheat gluten. The two basic types of this cake are uncooked (*namafu*) and baked (*yakifu*). The names that precede the suffix refer to what has been added to the gluten, the shape of the cake, or the area famous for a certain kind of cake. *Aonorifu* is baked and contains *Aonokiro*. *Chôjifu* is made long (=cho-) and cut to fit the bowl. *Daitokujifu* is fried cake that originated from the Daitokuji temple in Kyoto. *Temarifu* is a cake in the shape of a child’s ball (=temari). *Wakanafu* contains several kinds of young greens (=wakana) that give it a fresh springlike color.”

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term *Daitokuji-nattô* (with a diacritical mark above the o -> ô, and hyphenated) to refer to this Japanese type of “fermented black soybeans.” Address: Kyoto, Japan.

253. Watanabe, Tokuji; Ebine, Hideo; Ohta, Teruo. eds. 1971. *Daizu shokuhin* [Soyfoods]. Tokyo: Korin Shoin. 271 p. Illust. Index. 22 cm. [134 ref. Jap; eng+]

• **Summary:** This is the best book published to date on soyfoods in Japan; however it is written in Japanese. Contents: 1. Classifications and varieties of soybeans (p. 1). 2. Physical characteristics of soybeans (p. 5). 3. Chemical characteristics of soybeans (p. 9). 4. Standards and methods of examining soybeans (p. 47). 5. Special characteristics and problems of using soybeans for food (p. 53).

6. Current status of the soybean industry in Japan (p. 63). 7. Soymilk and various types of tofu: Aburage (deep-fried tofu pouches), ganmodoki (deep-fried tofu burgers), kôri-dofu (dried frozen tofu), soymilk, and yuba (p. 75). 8. Fermented soyfoods: Natto (p. 123-40), shoyu (p. 141-67), miso (p. 168-95), fermented tofu (*rufu*) (p. 196-202). 9. Other soyfoods: Kinako (p. 203-04), soy sprouts or moyashi (p. 206-08), tempeh or tenpe (p. 209-17). 10. Quality and usage of defatted soybeans (*dasshi daizu*) (p. 219).

11. New food uses of soybeans and especially defatted soybeans (incl. 70% soy protein powder, soy protein curds,

soy protein isolate, surimi gel, spun soy protein fibers) (p. 229). 12. Advice regarding supplying protein from organizations such as the United Nations and FAO (p. 257).

A 47-page translation of portions of this book (parts of Chapter 6 and all of Chapter 7) by Akiko Aoyagi and Chapters 8.1 and 8.2 by Alfred Birnbaum are available at Soyfoods Center.

Tokuji Watanabe was born in 1917. Hideo Ebine was born in 1921. Teruo Ota was born in 1926. Address: National Food Research Inst., Tokyo.

254. Vancour, Edith. 1972. 'Free' Chinese cooking. *Washington Post, Times Herald*. Feb. 10. p. D1.

• **Summary:** Mrs. Gaylord Nelson (Tia, wife of the Democratic senator from Wisconsin) is an outstanding cook. Although she can cook "in any language," her specialty is Chinese—and this article is about cooking at Chinese New Year. One of the best known meatless dishes served at this time is called "Arhats Fast or Buddhist Saints ten varieties"; it contains ten ingredients, including "Gluten of flour or skin of bean curd [yuba], cut into 1-inch cubes. (Bean curd skin has to be boiled for ½ hour)" [sic, yuba needs only a few minutes of cooking].

Contains several recipes which call for soy sauce. A photo shows Mrs. Gaylord Nelson in the kitchen preparing a Chinese dinner.

Note: A condensed version of this article by the same author, titled "Specialty of house: Chinese cooking," appeared in the *Los Angeles Times* (Feb. 24, p. J25).

255. Huang, Su-Huei. ed. 1972. Chinese cuisine: Wei-Chuan cooking book. Taipei, Taiwan: School of Home Economics, Wei-Chuan Foods Corp. 181 p. Illust. No index. 22 cm. [Eng]

• **Summary:** On each page is one recipe and a half-page color photo of the prepared dish. The title of the recipe is written in English in large bold letters and is also given in (to the right) in small Chinese characters, just above the number of servings. Most of the recipes call for ¼ to ½ teaspoon of MSG; many call for soy sauce.

On unnumbered pages at the front of the book are (1) A two-page color photo, on a light blue background, of 39 special ingredients, each numbered, with the numbers and names across the bottom of the pages. These include: "9. nori. 24. pickled plum (*umeboshi*). 25. bean curd noodle [pressed tofu noodles]. 30. bean curd wrapper (*pronounced 'bai ye'*) [pressed tofu sheets]. 35. bean curd skin [yuba in large, semicircular thin sheets].

(2) Description of some other special ingredients: "Hot bean paste (*pronounced 'la jiao jiang'*). This is made with red peppers [and soy beans] and has a very hot taste." "Sweet bean paste (*'t'ien mien jiang'*). This is made with steamed, fermented bread (black color)." Note 1. Why is this called "Sweet bean paste"? What kind of beans are used to make it?

"Soy bean paste (*'do ban jiang'*). This is made with fermented soy beans (black color)." "Fermented black bean (*'do shr'*). This is black [soy] beans which are steamed, then marinated in soy sauce or salt." "Pickled bean curd [fermented tofu] (*'do fu ru'* or *'Chinese cheese'*). This is bean curd which is dried and then pickled; there are many different kinds with different seasonings."

(3) Helpful hints: "In all recipes you may substitute Worcestershire sauce for dark vinegar."

In Chapter 3, "Pork and beef," soy related recipes are: Shredded pork with sweet soy bean paste (with 1.3 tablespoons "sweet soy bean paste," p. 39). Note 2. This is the earliest document seen (Feb. 2009) that contains the term "sweet soy bean paste." See also p. 104 below.

Pork ribs with dried black fermented beans (p. 41). Pork in preserved bean sauce (p. 42).

In Chapter 4, "Sea Food," is a recipe for Steamed carp with fermented black beans (p. 64).

In Chapter 5, titled "Bean curd and eggs" (p. 102-15) are recipes for: Stewed bean curd (with "1½ squares bean curd"). Assorted dish with hot sauce (with "½ tablespoon hot soy bean paste, 1½ tablespoons sweet soy bean paste," p. 104). Bean curd stuffed with minced pork. Ma-Po's fried bean curd with pork. Bean curd leaf rolls with minced pork (With "bean curd wrappers"). Beancurd noodles with celery salad (with "4 oz. {store-bought} bean curd noodles"). Vegetarian chicken (with "16 bean curd sheets").

Also: Green peppers stuffed with chopped meat (p. 122, with "1 tablespoon fermented black beans, crushed"). Bitter melon stuffed with fermented black beans (p. 126, with "2 oz. fermented black beans"). Eggplant with bean curd skin (p. 133, with "1 sheet beancurd skin" and "1 sheet nori" [sea vegetable]). Bean curd in earthen pot (p. 142, with "3 squares bean curd"). Address: 19 West Nanking Road, Taipei, Taiwan.

256. Wu, Lawrence C.; Bates, R.P. 1972. Soy protein-lipid films. 1. Studies on the film formation phenomenon. *J. of Food Science* 37(1):36-39. Jan/Feb. [13 ref]

• **Summary:** A pioneering scientific study of yuba. Contents: Introduction. Experimental: preparation of soymilk, estimation of compositional changes during film processing, chemical analyses, study of film formation in the model system. Results and discussion: Composition of soymilk, composition of protein-lipid films, composition of the residual whey ("soymilk remaining after film formation ceased"), compositional changes of soymilk during film formation, study of film formation in model systems.

Tables: (1) Experimental design of 2-component model systems and chemical composition of films formed with these systems (total concentration maintained within 3.5 to 4.3%). (2) Chemical composition of soybean fractions in film formation (percent dry-basis). (3) Chemical composition of protein-lipid films obtained during time intervals indicated.

(4) Incorporation efficiencies of major components of soymilk into films (qt 85°C, for about 6 hours).

Figures (graphs): (1) Representative compositional changes in processed soymilk, SM-7, during film removal. As each yuba film is lifted off, the protein, fat, and sugar content of the remaining soymilk decreases. Therefore the first film has the highest content of protein, vegetable oil, and sugar. (2) Effect of sucrose, safflower oil, phospholipids and protein on the film yield at 85°C, 2-component systems and SPI alone.

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term “protein-lipid films” or the term “soy protein-lipid films” to refer to yuba. Address: Food Science Dep., Univ. of Florida, Gainesville, Florida.

257. Wu, Lawrence C.; Bates, R.P. 1972. Soy protein-lipid films. 2. Optimization of film formation. *J. of Food Science* 37(1):40-44. Jan/Feb. [16 ref]

• **Summary:** Wu and Bates (1972), in a previous study of yuba films, investigated the role of soymilk and the components of a model system on film formation. They “hypothesized that this phenomenon is an endothermic polymerization of protein or lipoprotein monomers on the liquid surface promoted by surface dehydration.”

In this study they investigate the optimum conditions for film formation and recovery.

Figures (graphs) show: (2) Effect of soaking temperature and holding time on the protein-lipid yield from soymilk. The ideal soaking temperature is about 25°C. (3) Film formation flow sheet and mass balance: traditional vs. optimal process, 1 kg basis. (4) Effect of temperature on film yield rate and time required for unit mass film formation (Surface area 3.8 square inches). (5) Yield rate and time required for unit mass film formation (TUM) related to soymilk concentration; pH 6.7 at 85°C (Surface area 5.6 square inches). (6) Effect of soymilk concentration on film yield, with and without adding 1% lecithin; pH 6.5 at 85°C. (7) Effect of soymilk pH and concentration on film yield at 85°C. A good temperature is 85°C. Address: Food Science Dept., Univ. of Florida, Gainesville, Florida 32601.

258. Leung, W-T.W.; Butrum, R.R.; Chang, F.H. 1972. Food composition table for use in East Asia. Atlanta, Georgia: Center for Disease Control, U.S. Dept. of Health, Education, and Welfare. xiii + 334 p. Dec. No index. 30 cm.

• **Summary:** Part I. Proximate composition, mineral and vitamin contents of East Asian foods, by Woot-Tsuen Wu Leung, Ph.D. (Nutrition Program, Center for Disease Control, Dep. of Health, Education and Welfare), and Ritva Rauanheimo Butrum, M.S., and Flora Huang Chang, B.S. (Federation of American Societies for Experimental Biology).

Part II. Amino acid, fatty acid, certain B-vitamin and trace mineral content of some Asian foods, by M. Narayana

Rao, Ph.D., and W. Polacchi (Food Policy and Nutrition Division, Food and Agriculture Organization of the United Nations).

In Part I, Food Group 3 titled “Grain legumes and legume products” (p. 16-22) gives the composition of the following (100 grams edible portion and as purchased): Adzuki beans (*Phaseolus angularis*; incl. “Azuki-an,” and boiled sweetened). Asparagus bean: See Cowpea, yardlong. Asparagus pea: See Goabean. Bambara groundnut or jugo bean (*Voandzeia subterranea*). Bengal gram: See Chickpea. Blackeyed pea: See Cowpea, catjang. Blackgram: See Mung bean. Broad bean or horse bean (*Vicia faba*; incl. “Fuki-mame” and “Otafuku mame”). Burma bean: See Lima bean. Butter bean: See Lima bean. Catjang pea: See Pigeonpea. Chickpea or Bengal gram (*Cicer arietinum*). Cowpea, all varieties (*Vigna species*). Cowpea, yardlong: See Cowpea, all varieties. Dhal: See Lentil. Dolichos, Australia pea (*Dolichos lignosus*). French bean: See Kidney bean. Goabean [goa bean], asparagus pea, or winged bean (*Psophocarpus tetragonolobus*). Golden gram: See Mung bean. Green gram: See Mung bean. Haricot bean: See Kidney bean. Hindu cowpea: See Cowpeas, all varieties. Horse grain or horse gram or Madras gram (*Dolichos uniflorus*; *D. biflorus*). Horsebean: See Broadbean. Note 1. This is the earliest English-language document seen (Jan. 2005) that uses the word “horsebean” or the word “broadbean” to refer to *Vicia faba*.

Horsegram: See Horse grain. Hyacinth bean or Indian butterbean (*Lablab niger*; *Dolichos lablab*). Indian bean: See Mung bean. Indian butterbean: See Hyacinth bean. Jackbean, common (*Canavalia ensiformis*). Jugo bean: See Bambara groundnut. Kidney bean, French bean, navy bean, pinto bean, snap bean, or string bean (*Phaseolus vulgaris*; incl. “Usura-mame”). Lentil or dhal (*Lens culinaris*; *Lens esculenta*; *Ervum lens*). Lima bean, butter bean, or Burma bean (*Phaseolus lunatus*; *Phaseolus limensis*).

Note 2. This is the earliest English-language document seen (May 2003) that uses the scientific name *Lens culinaris* to refer to lentils.

Note 3. This is the earliest English-language document seen (Jan. 2009) that uses the name “Burma bean” to refer to the lima bean.

Madras gram: See Horse grain. Mung bean, Indian bean, red bean, green gram, golden gram, or blackgram / black gram (*Phaseolus aureus*; *Vigna radiata*; incl. vermicelli, dried starch, starch jelly, instant powdered green or red products with sugar and flour added). Mung bean, black gram or urd (*Phaseolus mungo*; *Vigna mungo*). Navy bean: See Kidney bean. Peanut or groundnut (*Arachis hypogaea*; incl. raw, roasted, with or without shell, salted, parched, seasoned, fried, peanut flour, peanut butter, peanut milk, peanut cake—defatted, peanut cake—defatted and fermented [onchom]). Peas, garden or field (*Pisum species*; incl. parched—salted, “Uguisu-mame”). Pigeonpea, or catjang pea

(*Cajanus cajan*; *Cajanus indicus*). Pinto bean: See Kidney. Red bean: See Mung bean. Rice bean (*Phaseolus calcaratus*; *Vigna calcarata*). Soybean and soy products (*Glycine max*; *G. hispida*; *G. soja*; p. 19-21), incl: Whole mature seeds—dried (yellow, black), whole immature seeds dried, whole seeds—salted (black, green, green soaked, fried, fermented {natto}, pickled, roasted), flour of roasted soybeans, defatted soybeans—whole seeds. Soybean products: Curd—unpressed, curd—tofu—raw (plain, kinugoshi, fukuroiri), curd—tofu—fried (moist type, dried type—regular size, dried type—small size, canned, abura age), curd—roasted [grilled], curd—tofu—fermented (home-prepared, jarred), curd—tofu (dried—spongy square, preserved, dried—rope-like, commercial {fermented with chili pepper}—jarred), curd cheese, curd sheet (milk clot sheet {yuba}) (moist type, dried type, pickled in soysauce), curd—pressed—raw (plain, fermented, spiced, strips—semi-dry), miso (Japan) (plain, sweet {5.3% salt added}, salty—light {10.4% salt added}, salty—dark {11.7% salt added}, mame-miso {9.7% salt added}, powdered {18.5% salt added}), paste [jiang] (plain, fermented, red pepper added, sweet, malt), soybean milk (unenriched—unsweetened, “Kaset” {Thailand; canned—concentrated, fluid}, Saridele {a mixture of soybeans, sesame seeds or peanuts, with vitamins and calcium added—Indonesia}), soybean sauce (dark—thick, light—thin, unspecified), tempeh (fermented soybean product, Indonesia), “Budo-mame” (cooked—Japan), Soybean residue [okara] (liquid, powder). Urd: See Mungo bean. Velvetbean (*Mucuna utilis*; *Stizolobium utilis*; incl. dried or mold-treated {tempeh}). Winged bean: See Goabean, Indes.

Food Group 4 titled “Nuts and seeds (p. 23-29) includes: Almonds, hemp seeds—whole, perilla—common (*Perilla frutescens*), safflower seeds, sesame seeds, sunflower seeds (*Helianthus annuus*), watermelon seeds.

Food Group 5, titled “Vegetables and vegetable products” (p. 30-75) includes: Amaranth, mungbean sprouts, seaweeds (many types), soybeans—immature seeds [green vegetable soybeans], soybean sprouts (raw, cooked).

Note 4. This is the earliest English-language document seen (March 2004) that mentions silken tofu, which it calls (in a table): “Curd, tofu, raw: ‘Kinugoshi,’ Japanese preparation.”

Note 5. This is the earliest English-language document seen (Dec. 2005) that contains the term “flour of roasted soybeans.”

Note 6. This is the earliest English-language document seen (Oct. 2006) that uses the term “Blackeyed pea” to refer to the cow pea. Address: Dep. Health Education and Welfare.

259. Char, Alyce; Char, Theodore. 1972. The gourmet’s encyclopedia of Chinese-Hawaiian cooking. New York, NY: Exposition Press. An Exposition-Banner Book. 306 p. Plus 32 unnumbered pages of [color] plates. See p. 277. Illust. (some color). 24 cm.

• **Summary:** This book is a fusion of Cantonese Chinese and

Hawaiian cuisines. The names of Chinese foods is usually romanized in Cantonese. A surprisingly large number of the recipes are based on meat, poultry, fish or eggs.

In the chapter titled “The Chinese Kitchen” (p. 27-33) many soyfoods are described under “Spices, sauces and condiments.” These entries tend to be less detailed than those in the Glossary.

The chapter on “Food sources and substitutions” includes: “Bean curd skin (*Fu Pee Guin*): Use leaf fat.

The chapter titled “Chinese grocery store and supermarket items” includes these two entries: “Bean curd: Fresh; bottle or canned; in red sauce; dried in sheets or rolled.” This reference is apparently to fresh tofu, bottled or canned tofu, red fermented tofu, dried yuba sheets, and dried yuba sticks. The 2nd: “Tofu: Wet and dried.”

A sampling of soy-related recipes includes: Barbecued teriyaki beef (with homemade Teriyaki sauce, p. 73). Chicken with bean curd (with “4 cubes white bean curd, p. 99). Steamed spare ribs—Black beans (with “¼ cup black beans {*Dau See*}, p. 127). Bean curd spring roll with Szechuan cabbage (with 1 pkg. {½ lb.} bean curd sheets, p. 180). Note the ease with which the terms “Bean curd” and “bean curd sheets” are used interchangeably. Bean cake with bean sauce (with “2 blocks *tofu* or soybean cake, 4 inches square” and “¼ cup canned bean sauce {*Ngin see Jeong*}, p. 192).

On three unnumbered pages of black-and-white photos in the middle of the book (after p. 194) titled “Chinese ingredients” we see: (10) A box of “Dried bean curd, flat type” [folded sheets of yuba]. (6) “Bean cakes (cheese)” [a bottle of fermented tofu]. (8) “Red bean curd” [a can of fermented tofu]. (12) Brown bean sauce (*ngin see jeong*). (9) Thick red soy [sauce]. (15) Fried tofu. (20) Preserved black bean (*dau see*).

Celery cabbage with bean curd (with “2 tbsp. bean curd [fermented tofu], p. 198).

The Glossary (p. 277-91) contains many soy-related entries:

Aburage: “Japanese word for deep-fried tofu.

Beancurd flower, *dou fu fah* [curds made from soymilk]; very fine consistency, white in color, sold packaged in cellophane containers.

Beancurd sauce or cheese, *dau fu mui*; also called *fu yui*; squares of fermented beancurd [fermented tofu], salty and having a cheese-like consistency.

“Beancurd sticks or skins, *fu jook*; [dried yuba sticks] shiny cream-color brittle and wrinkled sticks or sheets; actually a by-product of beancurd made from second layer of puréed beancurd.”

Black beans, preserved. *dau see*; preserved black soybeans; they impart their strong flavor to foods they are cooked with.

Brown bean sauce, *ngin see jeong*; sold in either paste form or as a thick sauce; made from fermented yellow

soybeans, flour and salt. It can be purchased ready-made in bottles or cans, or made at home from salted, fermented black soybeans (see p. 29).

Cheese, Chinese: see beancurd sauce or red beancurd sauce.

“Hoisin sauce: thick brownish-red sauce, made from soybeans, chili, garlic, spices, flour and sugar.

“Miso paste: Japanese product made from seasoned, preserved, mashed soybeans; used in soups and stews.

Red beancurd sauce or cheese, *nahm yoi*: [red fermented tofu] red, pressed beancurd fermented in rice wine with salt and spices; used to season and flavor special dishes; sold in cans or jars.

“Soy sauce, *see yau*: also called *bahk yau*: thin sauce made from fermented soybeans, wheat, salt, water and yeast [sic]; first brew produces light colored thin sauce; allowed to set longer, becomes dark brown; light sauce, the first brew, premium and limited in quantity; used at table and in cooking.

“Soybean: both yellow or black used in stew dishes or stir fried.

Soybean cake, *dau fu*: [tofu] white custard cakes of pressed puréed soybeans; nutritious and used in lieu of milk in China for its protein value.

Soybean cake, deep fried, *yau dau fu*, [deep-fried tofu] yellow-brown and triangular or cube shaped.

Soybean paste, *jeong*: any sauce, such as *hoi sin sauce*.

Teriyaki: Japanese soy sauce marinade for beef, but also chicken, pork, or seafood.

Tofu, *dau fu*: Japanese word for products such as beancurd cake.

White beancurd cake or cheese [white fermented tofu]: see sauces or cheeses.

Also interesting in Glossary: Monosodium glutamate, *mee jing fun*; centuries old Chinese brand made from seaweed.

About the authors (inside rear dust jacket): Theodore Char, a native of Honolulu, graduated from the University of Illinois. In 1928 he became the first person of Chinese descent and the first Hawaiian to become a certified public accountant. He is a firm believer in physical culture and is an ardent hiker. Alyce Char is a graduate of the University of Hawaii. Throughout the Hawaiian “they are renowned for entertaining in their home and are frequently referred to as ‘the host and hostess with the mostest.’” Among the books many color photos, are four excellent ones of this harmonious- and happy-looking couple. Address: Honolulu, Hawaii.

260. Claiborne, Craig; Lee, Virginia. 1972. *The Chinese cookbook*. Philadelphia and New York, NY: J.B. Lippincott Co. xxi + 451 p. Color photos by Bill Adler. Drawings by Barbra and Roderick Wells. Illust. Index. 24 cm.

• **Summary:** Soy related recipes: Coriander and bean

curd with sesame sauce (with dried brown bean curd [soy-sauce pressed tofu] and light soy sauce, p. 34). Cold chrysanthemum leaves with sesame oil (with dried brown bean curd and light soy sauce, p. 35). Chicken with black beans and shallots (with fermented, salted black beans, light soy sauce and dark soy sauce, p. 58-59). Note 1. This is the earliest English-language document seen (Nov. 2011) that uses the term “fermented, salted black beans” to refer to Chinese-style fermented black soybeans. The headnote to this recipe states: “Fermented, salted black beans have an almost winy flavor, and they give an intriguing flavor to almost any dish in which they are cooked.” Yet nowhere in this book do the authors state that these black beans are actually black soybeans.

Soy sauce chicken (with light soy sauce and dark soy sauce, p. 59-60). Hoi sin sauce is mentioned (or a photo shown) as an ingredient on pages 65-66, 147, between pages 282 and 283, and on 4 other pages. Spicy pork and bean curd (with “6 pads fresh white bean curd,” p. 136). Note 2. This is the earliest English-language document seen (Oct. 2008) that uses the term “fresh white bean curd” to refer to fresh tofu, or that uses the word “pads” to as the counter for pieces or cakes of tofu. The headnote states: “Bean curd has as many uses in China as cottage cheese does in the Western world. It is one of those neutral dishes [ingredients] like potatoes and snails which adapt well to assertive flavors.”

Cantonese roast pork (with “2 tablespoons red bean curd sauce” [nam yue?] and “2 tablespoons bean sauce”). Chinese barbecued spareribs (with “2 tablespoons red bean curd sauce,” “2 tablespoons ground bean sauce,” and “3 tablespoons hoi sin sauce,” p. 147-48). Ginger beef and bean curd with hot pepper (with “5 pads fresh white bean curd,” p. 188). Steamed fish with bean sauce (with “¼ cup bean sauce,” p. 208). Stir-fry shrimps with bean curd (with “5 pads fresh white bean curd,” p. 231). Shrimps in black bean sauce with ginger and scallions (with “2 tablespoons fermented salted black beans and 2 tablespoons dry sherry or shao hsing wine.” “Combine the black beans with 1 tablespoon of the wine and crush lightly with a spoon.” Thus, “black bean sauce” can be easily and quickly made in the kitchen from fermented, salted black beans, p. 234-35).

Clams in black bean and oyster sauce (with fermented salted black beans that are quickly made into black bean sauce as above, p. 243-44). Frogs legs with black beans (with fermented salted black beans, p. 257). Mock Peking duck (with “6 sheets dried bean curd,” p. 302-03. “Bean curd comes in large, semicircular thin sheets [yuba] as well as squares [probably yuba; see below]. Because the sheets are notably fragile, they are frequently broken.” The headnote states: “This dish uses dried bean curd to produce an eminently edible creation that tastes remarkably like roast duck”).

Bean curd and beef ball soup (with “1 pad fresh white bean curd,” p. 318). Whiting and bean curd soup (p. 327-28).

Flowerly bean curd soup (p. 328-29). Bean curd casserole soup (p. 330-31). Tsa Chiang mien (Noodles with minced pork and bean sauce, incl. "½ cup bean sauce," p. 365-66).

One glossy color photo (between pages 282 and 283) and a numbered key shows many ingredients used in Chinese cooking, incl.: 5. Dark soy sauce. 6. Hoi sin sauce. 7. Bean sauce. 8. Light soy sauce (both in tall-neck bottles). 16. Fresh white bean curd. 28. Dried brown bean curd [soy sauce pressed tofu]. 31. Dried bean curd sheets [clearly yuba, since light yellowish brown, semi-transparent, subtly wrinkled surface, and very thin]. 32. Fermented salted black beans (small pile).

Chapter 11, titled "Chinese ingredients..." (p. 419-40) contains many interesting terms and definitions, with Chinese characters accompanying each. Soy related are: Dried bean curd sheets [yuba] ("These paper-thin, light brown half circles are very fragile and are often broken; they can be repaired by wetting and overlapping the broken edges. They are sold in packages of 10 and will keep for 3 to 4 months without refrigeration." Eventually they will turn rancid, since they have a high oil content"). Dried brown bean curd (3 Cc = Chinese characters given) [doufugan; soy sauce pressed tofu]. Dried red beans [azuki].

Fermented salted black beans (2 Cc) [douchi, dow see]: "An ingredient of Cantonese cooking but virtually unknown elsewhere in China, these black [soy] beans, sometimes simply called 'Salted Black Bean' are sold in 1-pound cans or in 8- and 16-ounce plastic bags. They will keep for months if stored in the refrigerator in a covered jar." Fresh white bean curd (2 Cc) (doufu). Ground bean sauce (3 Cc): Contains "the same ingredients as Bean Sauce, except the whole beans have been ground to a paste. It is sold in oblong 1-pound cans." Hoi Sin Sauce (3 Cc): "Made from pumpkin."

Red bean curd sauce (4 Cc): "A thick sauce made from soy beans, red rice, and salt water, this is available in 11-ounce oblong cans and also in 12-ounce round cans labeled 'bean curd.'"

Note 3. This is the earliest English-language document seen (March 2011) that uses the term "Red bean curd sauce" to refer to a commercial product made with red fermented tofu.

Sesame oil. Sesame paste. Sesame seeds. Shao Hsing Wine (made from rice). Soy sauce (2 Cc) [jiangyou]: Color ranges from light to very dark. The "difference lies more in the color than in the flavor." Sold in tall-neck bottles ranging for 12-21 ounces. "The soy sauce generally sold in American supermarkets is light soy sauce—it is most suitable used as a dip or in some stir-fry dishes but in general is too light to lend an appetizing color to a dish. Dark soy sauce, usually found only in Chinese markets, is sometimes labeled 'Black Soy.' Soy sauce will keep for months and sometimes years without refrigeration."

There follows a nationwide directory of sources for

Chinese ingredients.

Also mentions: Eight precious jewel pudding (with "1 cup dried red [azuki] beans," p. 406-07). Red sand rice roll (with "1½ cups dried red [azuki] beans," p. 408-09).

"Craig Claiborne was food editor of *The New York Times* from 1957 to 1971. During this period he was credited by the Chinese-American Restaurant Association of Greater New York with significantly raising the level of public interest in Chinese food, and thus the standard of Chinese restaurant fare." A large, excellent color photo on the rear dust jacket shows Craig Claiborne and Virginia Lee preparing a meal together in a kitchen. Address: East Hampton, Suffolk Co., New York (on the eastern tip of Long Island).

261. Food and Agriculture Organization of the United Nations (FAO). 1972. A selected bibliography of East-Asian foods and nutrition arranged according to subject matter and area. [Washington, DC]: Food and Agriculture Organization of the United Nations; U.S. Dept. of Health, Education, and Welfare. vii + 296 p. Dec. 27 cm. [1500* ref]

• **Summary:** This book has two title pages and can be cited in two ways. See Leung (1972). Address: Dep. of Health Education and Welfare.

262. Hosking, Richard. 1972. A dictionary of Japanese food: Ingredients & culture. Boston: Tuttle Publishing. 239 p. Illust. by Richard C. Parker. Index. 19 cm. *

• **Summary:** An excellent, accurate book. The basic entry for each word is given under its Japanese name (thus *daizu* rather than soybeans). Each entry includes the Japanese term in kana (usually hiragana) and (usually) kanji (Chinese characters). One hundred small illustrations are very helpful. Address: Prof. of Sociology and English, Hiroshima Shudo Univ., Japan.

263. Smith, A.K.; Circle, S.J. 1972. Protein products as food ingredients. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 339-88. Chap. 10. [180 ref]

• **Summary:** Contents: 1. Flavor: Taste panel results, flavor components, plastein formation and flavor, plastein formation and nutrition, some food uses tolerant of soy flavor. 2. Bread and pastries: Soy flour history, effect of soy flour on baking characteristics, soy protein isolate in bread, soy flour and flavor, enzyme active soy flour, soy flour in Britain, detecting of soy flour in wheat flour. 3. Other baked goods: General, doughnuts, snack products. 4. Breakfast cereals. 5. Macaroni products. 6. Dairy-type products: Imitation milk, soy milk, filled milk, soybean cheese, imitation cream cheese, coffee whiteners, whip toppings, and frozen desserts, yogurt type products. 7. Comminuted meat products and meat analogs: Comminuted meat products, meat analogs, spun fiber type meat analog, extrusion-cooked

type meat analog, heat-gelled type meat analog, meat fibers in heat-gelled protein matrix, assay of soy protein products in meat-type foods. 8. Gelling and aerating agents: Gelsoy as gelling agent, soy protein isolate as gelling agent, soy protein isolate as aerating agent, soy whey protein as aerating agent, enzyme modified isolates as aerating agent, foam-mat drying adjunct, foaming agent for soda water. 9. Miscellaneous food applications: Brew flakes, soups, gravies and sauces, confections, imitation nut meats, and [soy] nut butters, spray drying adjunct. 10. Nonfermented Oriental soybean foods: Introduction, Chinese soy milk, dried soybean whole and defatted milks, tofu (fresh tofu, bagged tofu, dried tofu, fried tofu), yuba, kinako, soybean sprouts (compositional changes).

Concerning Brew Flakes (p. 373): "Soy flakes, grits, and peptones have been used since about 1937 or earlier (Burnett 1951) as adjuncts in brewing beer. Grits and ground meal from screw press processing were the first products used in brewing but later they were replaced by solvent-extracted flakes. The best results are obtained with flakes or flour having a high NSI with a minimum of heat treatment in processing. Up to 0.75 lb. of flakes per barrel of beer has been recommended by Hayward (1941).

"The flakes may be used in the normal mashing operation to provide amino acids, peptides, minerals, and vitamins as nutrients for the yeast. It was reported by Wahl (1944) and Wahl and Wahl (1937) that addition of hydrolyzed soybean protein directly to the beer improves foam stability, flavor, and body of the beer." Address: NRRL, Peoria, Illinois.

264. Smith, Allan K.; Circle, Sidney J. eds. 1972. Soybeans: Chemistry and technology. Vol. 1. Proteins. Westport, Connecticut: AVI Publishing Co. xi + 470 p. Illust. Index. 24 cm. [500+ ref]

• **Summary:** One of the best and most comprehensive reviews on the subject, with extensive information on modern soy protein products. Each of the 12 chapters is written by an expert on the subject. Volume 2 was never published. Address: 1. PhD, Oilseeds protein consultant, New Orleans, Louisiana; 2. PhD, Director, Protein Research, W.L. Clayton Research Center, Anderson Clayton Foods, Richardson, Texas.

265. Smith, A.K.; Circle, S.J. 1972. Appendixes: Glossary of soybean terms: Terms used in conjunction with the processing of soybeans and the utilization of soy products. Official standards of The United States for soybeans. In: A.K. Smith and S.J. Circle, eds. 1972. Soybeans: Chemistry and Technology. Westport, CT: AVI Publishing Co. xiii + 470 p. See p. 438-56. Appendix. [4 ref]

• **Summary:** Glossary: Soybean(s), soybean processor, soybean processing (solvent extraction, mechanical processing, pre-press solvent processing), soybean oil,

crude soybean oil, edible crude soybean oil, refined soybean oil, edible refined soybean oil, hydrogenated soybean oil, degummed soybean oil, winterized oil, technical grade refined soybean oil, soybean fatty acids, soybean soapstock, acidulated soybean soapstock, soybean lecithin, break material, sludge.

Soybean products: Ground soybeans, ground soybean hay, soybean hulls, solvent extracted soybean feed, soybean meal, dehulled solvent extracted soybean meal, soybean mill feed, soybean mill run, heat processed soybeans, nitrogen free extract (N.F.E.).

Standard specifications: Soybean chips, soybean cake, 41% protein soybean meal, soybean flakes, 44% protein soybean meal, dehulled soybean flakes, 50% protein solvent extracted soybean meal.

Soybean proteins: Soy flour, soy grits, soybean meal, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, protein, isolated protein, toasting, textured protein products (TPP), meat analogs. Definitions: Soy grits and/or soy flour, isolated soy protein, soy protein concentrate.

Vegetable fats: Margarine, vegetable shortening.

Oriental foods: Soy sauce (shoyu), soy milk, miso, tofu, dried tofu, aburaage, kinako, namaage, ganmodoki, tempeh, natto, yuba, moyashi (soybean sprouts), vanaspati, ghee.

Official standards of the U.S. for soybeans. Soy flour standards. Analytical data range of commercial soy protein. Some U.S. companies marketing soy protein food ingredients. Nitrogen solubility index (NSI). Protein dispersibility index (PDI). Urease activity. Water absorption of soy flour. Address: 1. Oilseeds Protein Consultant, New Orleans, Louisiana; 2. Director, Protein Research, Anderson Clayton Foods, Richardson, Texas.

266. Tsuda, T.; Oshita, T.; Kobayashi, K.; Ito, S. 1972. Shōjin ryōri; Daitoku-ji ryōri, Tansen-ji ryōri, Eihei-ji ryōri, Sōji-ji ryōri [Zen vegetarian cookery: From Daitokuji, Tansenji, Eiheiji, and Sōjiji]. Tokyo: Fujokai Shuppansha. 242 p. Illust. 22 cm. [Jap; eng]

• **Summary:** Written by the head cooks at four of Japan's best known Buddhist monasteries. A second edition was published in 1976.

On pages 78-79 is a description of Daitokuji-natto, a unique type of fermented black soybeans. They have what has been called "the flavor of tea." They are a type of "miso natto" made from soybeans, barley (*omugi*) and salt. The method of production, originally transmitted from China, was inherited from the famous Zen master Ikkyū [Ikkyū Sōjun, lived 1394-1481], who became head priest of Daitokuji temple in Kyoto in 1474. Future generations of monks and craftspeople at his personal sub-temple, Ikkyū, inherited the method from him and have passed it down to the present as a secret transmission.

At first the flavor of these savory chunks seems quite

salty and a little sharp, but as you enjoy the flavor a little longer, overtones of subtle sweetness, tartness and spiciness emerge, creating a mysterious harmony.

Daitokuji fermented black soybeans are served in Japan in any of four ways: (1) Since long ago, tea masters and epicures have prized them for use in place of tea cakes (*chauke*) with thin whisked green tea or bancha tea. (2) In Ochazuke, they are sprinkled over hot rice in a small bowl, then doused with hot green tea. (3) Nowadays they are used as an hors d'oeuvre with sake or beer. (4) Occasionally they are pureed with dashi soup stock and used as an ingredient in refreshing summertime miso soups or simmered vegetable preparations (*nimono*).

The Ikkyu subtemple within Daitokuji is Japan's most traditional maker. The entire year's supply is made only during July and early August, in the heat of summer, when exposure to sunlight enables proper drying. After the earlier steps in the preparation, the beans are mashed, reshaped into small balls 3/4 inch in diameter, arranged in wooden trays each about 12 by 24 by 2 inches deep, and sun-dried. A photo shows the mashed, reshaped soybeans in wooden trays at Daitokuji, a major Rinzaï temple in Kyoto, Japan. Address: 1. Ikkyu, Daitokuji; 2. Head priest, Tanzenji, Kamakura (Rinzaï sect); 3. Eiheiji (Soto sect, Asst. head cook); 4. Sojiji (Asst. head cook).

267. Hansen, Barbara. 1973. Yue Sang—Fishy salad in the raw. *Los Angeles Times*. Feb. 1. p. K11.

• **Summary:** Yue Sang is a Cantonese raw fish salad. At a meeting of the Los Angeles Chinese Women's Club, Mrs. F. Chow Chan brought jai, a meatless dish, that ordinarily contains 18 ingredients including dried oysters, dried black and grass mushrooms, dried bean curd stick [dried yuba sticks], white lily petals, golden needles, cloud fungus and hair seaweed."

"To symbolize gold, there were tangerines and jin duey, a deep-fried Chinese pastry stuffed with sweet black bean paste." Recipes are given for Yue Sang, Lion's head, and Rock salt chicken. A photo shows five Chinese women, each nicely dressed, gathered around a wok, from which they pick morsels with long chopsticks.

Note: This is the earliest English-language document seen (Sept. 2008) that contains the term "sweet black bean paste." It can be made with either black soybeans or azuki beans.

268. *Mainichi Shinbun*. 1973. Zen no kokoro = ôtôfu [The heart of Zen = Tofu]. Feb. 20. [Jap]

• **Summary:** A large black-and-white photo shows William Shurtleff making tofu burgers at the tofu shop of Toshio Arai near Tokyo Japan. A processing / utilization chart drawn by Shurtleff shows how soybeans are transformed into thick soymilk (which is made into kinugoshi-dofu, or yuba), or thin soymilk (which is made into any of 7 types of

tofu: oboro-dofu, aburage, o-tofu [*momengoshi*], atsUAGE, ganmodoki, yaki-dofu, or koya-dofu). Bill Shurtleff, age 31, comes from America, the world's main soybean producing country. He is living with the Aoyagi family at 278-28 Higashi Oizumi, Nerima-ku, Tokyo. His Book of Tofu is scheduled for publication in Sept. 1973. The article describes his appearance, then notes that he is a vegetarian doing Zen practice in Japan, which he feels is a very materialistic society. He is writing a book on tofu in large part to try to do something about the world food crisis. He is studying tofu at Sangen-ya under Mr. Toshio Arai. Mr. Arai notes that he has not yet finished his internship since he cannot yet make aburage by himself, but he should be "done" in about 3 months. Bill does translation work for his father's company and earns 30,500 yen/month which he lives off of. Akiko is his language teacher, so his Japanese has a feminine touch. There follows a brief description of Bill's favorite recipes: Ganmo burgers, Kori-dofu cutlets, Onion soup with tofu, and strawberry tofu whip.

Note: This is the earliest document seen (July 2012) concerning the work of William Shurtleff and Akiko Aoyagi with soyfoods, in Japan. Address: Tokyo, Japan.

269. Harper, Anne. comp. 1973. Soybean processing and utilization: A partially annotated bibliography. Jakarta, Indonesia: Lembaga Ilmu Pengetahuan Indonesia (Indonesian Inst. of Sciences), Jl. Tjhih Ditiro 43, Jakarta. vi + 56 leaves. 30 cm. [440 ref. Eng]

• **Summary:** Contents: Preface (by Prof. Sarwono Prawirohardjo, Chairman, ASEAN Permanent Committee on Science and Technology). Introduction: The soybean (*Glycine max*), soybean meal and oil, food uses, industrial uses, scope of the bibliography ("excludes references to non-alimentary utilisation of soybeans" and to "references to alimentary utilisation where the harvested plant has not undergone processing by either fermentation or oil extraction"), terminology of soybean processing (soybean meal, soy flours and grits, solvent extraction, miscella, desolventizer-toaster, defatted soy flour, low-fat soy flour, high-fat soy flour, full-fat soy flour, lecithinated soy flour, soy protein concentrates, soy milk, Saridele, yuba, soybean curd [tofu], aburage, koritofu [kori-dofu, dried frozen tofu], soy protein isolate, protein fibre products {spun, spinnerettes}, extrusion-expansion products, fermentation products {ontjom, *Neurospora sitophila*, soysauce, shoyu, *Aspergillus oryzae*, koji, moromi, tamari, koikuchi, natto, miso, tempeh, *Rhizopus oligosporus*, soybean cheese, sufu, *Mucor sufu*}, *Zygosaccharomyces*).

General (p. 1). Fermentation products (p. 2-16). Soybean oil, meal, and protein (p. 17-42). Nutrition (p. 43-56). Note: 500 copies were printed. Address: Indonesia.

270. Ilany (Feigenbaum), J. 1973. Soybean food for today and tomorrow. *Gordian (Hamburg)* 73(10):390-91. Oct.;

73(11):428-30. Nov.; 73(12):464-65. Dec. [21 ref. Eng; ger]

• **Summary:** “This is a short review of what is chiefly known at present of this wonderful bean, which only a few years ago, constituted a strange and exotic food.” Contents: Introduction. Composition and nutritional value. Green soybeans. Sprouted soybeans. Soybean flours. Isolated proteins. Soy-food products of the Far East: Kinako, soymilk, yuba, “tofu or curd–soycheese,” aburage, natto, Hamanatto, tempeh, miso, shoyu or soy sauce. Soybean oil. Lecithin.

Concerning tofu: Tofu made in the regular way “is called ‘Fresh Tofu.’ It does not keep long, even under refrigeration, unless it is further processed. For this purpose it may be canned, frozen, fried, smoked, or fermented.”

Note: This is the earliest English-language document seen (Aug. 2011) that contains the term “soycheese”; it uses this term to refer to regular tofu.

271. Taira, Harue. 1973. Heat destruction of amino acids in soybean products. *JARQ (Japan Agricultural Research Quarterly)* 7(4):267-73. Oct. [11 ref]

• **Summary:** Traditional, processed soybean foods that are widely used in homes in Japan include “Shoyu (fermented soy sauce), Miso (fermented soybean paste), Natto (fermented soybeans), Tofu (bean curd), Aburage (fried bean curd), Kori-tofu (dried Tofu) and Kinako (roasted soybean flour).”

One of the steps in making each of these foods is heating, which denatures the protein (making it more digestible), eliminates the peculiar soybean flavor, and develops colored substances (which “can prevent oxidation of the unsaturated fatty acid contained abundantly in soybeans during the fermentation process of Miso as an example”). Heating also eliminates antinutritional factors.

“But overheating causes excessive denaturation of soybean protein and destruction of amino acids.”

Tables show: (1) Amino acid composition of 7 soybean products, including Mamemiso [soybean miso, such as Hatcho miso] and yuba. (2) Change of amino acid after three steps in the process of making Mame-miso: Soaking the soybeans, heating the soybeans, the final product. (3) Change of amino acid after two steps in the process of making natto: Heating the soybeans, final product. After heating at a rather high temperature for a short time (120°C for 30 minutes), there was no decrease in any amino acids except arginine, which decreased by 17.8%, and decreased by 29.1% in the final product. Some essential amino acids increased during the natto process. Methionine increased from 0.9 gm per 17 gm of nitrogen to 1.1 gm, an increase of 22.2%. Cystine remained unchanged at 1.0. (4) Change of amino acid after three steps in the process of making Tofu: Soaking the soybeans, heating the soybeans, the final product. No amino acids are reduced by heating, and some (such as methionine) increase. Of the 18 amino acids measured, 5 are unchanged,

10 increase, and 3 decrease slightly: Glutamic acid 19.6 > 19.3. Tryptophan 1.5 > 1.4. Serine 6.6 > 6.4.

One of the products which is heated by dry heat only (without soaking in water) is kinako. It is heated at 160°C for 10 minutes, then ground. This heating reduced lysine from 5.1 to 4.8.

Figures (graphs) show: (1) The heat destruction of lysine in defatted soybean flour at 4 different temperatures (from 100°C to 126°C) for 4 different times (from 30 minutes to 4 hours). The higher the temperature and the longer the time, the greater the destruction of lysine.

(2) The heat destruction of cystine in defatted soybean flour. Same 4 temperatures and times; roughly same results.

(3) The influence of water on the heat destruction of lysine in defatted soybean flour. Same 4 temperatures and times. Adding water reduces the destruction of lysine.

(4) The influence of water on the heat destruction of cystine in defatted soybean flour. Same 4 temperatures and times. Adding water reduces the destruction of cystine.

(5) Heat destruction of total and available lysine in defatted soybean flour. Same 4 temperatures and times.

(6) Enzyme treatment and total liberated amino acids. Address: Food Analysis and Nutrition Div., National Food Research Inst., Ministry of Agriculture & Forestry, Koto-ku, Tokyo.

272. Wu, Lawrence C.; Bates, R.P. 1973. Influence of ingredients upon edible protein-lipid film characteristics. *J. of Food Science* 38(5):783. Sept/Oct. [9 ref]

• **Summary:** Yuba films should be removed from the soymilk surface as soon as their mechanical strength permits. Any delay may enhance the film strength to a limited degree but will reduce the formation rate and, sometimes, the yield. “Thus systems producing the strongest films exhibit the highest formation rates.”

The starting soymilk should have a pH of 8 to 9.5, a protein concentration of 4-5%, and a total solids content (including carbohydrates and lipids) of less than 9%. The ratio of protein to lipids should be above 1.0. Address: Univ. of Florida, Gainesville, Florida.

273. Miller, Harry W., Jr. 1973. Observations from forty years of soy protein processing and engineering (Continued—Document part II). Cedar Falls, Iowa: Soypro International, Inc. 8 p. Undated. Unpublished manuscript.

• **Summary:** Continued: “Flavor was no problem as the public enjoyed the bean-like cereal flavor of soy. We calculated that, if we could produce a product of high keeping quality and automate the production, we could produce and sell soy milk for \$0.20 a quart in comparison to cow’s milk at \$1.00 per quart. To do this we used wide mouth bottles with a metal crown cap. By sterilizing these bottles in a pressure retort, we had a milk that kept indefinitely without refrigeration. This allowed us to divide

the city into four quarters, and by delivering a week's supply at a time we were able to provide house delivery with one fourth the equipment and personnel of our competitors. We had many customers living in other cities that bought a month's supply at a time and carried the empty bottles back to us.

"During our first month of operation, the cost was \$1.10 per bottle. The second month was \$0.40 per bottle, the third month \$0.19 per bottle and the fourth month \$0.12 per bottle, which allowed a reasonable profit. We were unable to proceed further as the Japanese blew up the plant on August 7, 1937.

"Realizing the nutritive value of soy and its possibilities, and no longer being able to continue in the Far East, we established the 'International Nutrition Laboratory' in Mt. Vernon, Ohio.

"At first our endeavor was to perfect manufacturing equipment so we could return to the Orient and develop foods for low-income population. As a result, we worked with soy flour manufacturers and oil meal developers. Although many experiments were conducted in testing baking and roasting the bean, we learned very early that moist heat was best for developing high assimilability of this rich protein source.

"I believe I built some 21 different types of moist heat processors from pressure steam cookers to blowing line steam jets through liquid falls of the extracted protein. One day my father remarked, 'Son, you have more equipment out on the scrap pile than you have in the plant.'

"As World War II progressed, we found ourselves producing high protein products for feeding of people that had been undernourished due to the enemies' confiscation of food materials. However, as the war drew to a close, we saw a need for a change of income source. So, with the assistance of Dr. Baxter of Ohio State University, Soylac was brought on the market. Although we had to overcome diarrhea and other feeding problems, it was found that, with proper moist heat treatment and a proper balance of various carbohydrates and vegetable oil, we produced an infant milk that was readily accepted by the pediatricians.

"As we had a greater amount of soy protein fiber [okara] than extracted protein, we at first dried this and sold it for livestock feed.

"It was felt that meat analogs could not be produced from this protein casein residue. Again special equipment had to be made to handle and process this product so that palatability and high food value would result. With specially designed heat processes and modified meat manufacturing equipment, bolognas and beef-like cutlets were produced at first with the addition of wheat protein, later with soy spun protein fibers. As discussed in the latter part of this dissertation, we were also able to produce very satisfactory meatlike products entirely from the residue.

"In the late summer of 1960, I received a call from my

father inviting me to a luncheon conference. Here I met Ronald Hill of UNICEF.

"After being introduced I was informed that UNICEF intended to install an infant formula plant in Indonesia under the direction of Dr. S.S. De of F.A.O.

"We were invited to be designers of the plant and I was to supervise the installation and training of the personnel to operate the installation.

"I was most fortunate to be assisted in the project by Dr. E.L. Rowe, a graduate Ph.D. from the University of Southern California. With his help at the Institute of Nutrition of Indonesia, and the assistance of the College of Medicine of the University of Indonesia we were able to determine the causes of diarrhea in infant feeding and correct it in our formula and processing methods.

"As in every country the natives of that locale must have a product that suits their individual organic reaction to nutrition in-take.

"It has not been possible to produce a product acceptable in all countries and cultures. Thus it has been necessary to adapt both production methods and formula to each area individually. In Indonesia we had a very delicate pH balance to maintain, and moisture quantities had to be regulated so the infant obtained a nutritious substance that its body could absorb without ill effects.

"Shortly after my return to the United States and during a periodic visit of my father, Dr. Perry Webber called upon us to assist Madison Foods to develop their soy products for greater market acceptance. They had some very commendable meat analogs using the combination of both soy and wheat derivatives. However, they wished to explore in the infant formula field which was creating a sizable market. Infasoy was originated at this time and a process was developed to increase the normal extracted quantity of protein from the traditional extraction method. This was done by the use of mechanical equipment and formulations. It was here, with a great quantity of wheat fiber in use, that we derived a method of using the soy residues [okara] to manufacture meat loaves, sausages, wieners, and bolognas entirely of soy except for seasoning materials and added fats. This greatly increased the nutritional value as well as the income derived from the sale of these products.

"As we were perfecting and developing equipment and products at Madison, a call came from Brazil for assistance in developing a soy and cow milk formula.

"As the Brazilian government felt that some animal product should be incorporated in this kind of formulation, processing experiments were carried out. As a result much was discovered in flavor control. It had long been determined that you could not mask the flavor of the soybeans. It was entirely a matter of using some of the flavors in the bean and eliminating the objectionable ones.

"While still at Madison I had a call to install a traditional soy milk plant in the Far East. Our technologies had

progressed to the point that we had difficulty at first to retain sufficient soy flavor to satisfy the palate of the local clients. However, this was accomplished to the satisfaction of the customers.

“The last three years have been used in developing sophisticated analogous types of meat and milk. This has been accomplished in the laboratory and we feel will soon be available for countries now pressed with shortage of milk. Should milk fall short in dairy farming countries, we know we can supplement this shortage with a vegetable source as acceptable as the product in shortage.

“In summary let me review:

“1. We are facing shortages in milk, which is produced with a ratio of 8 lbs. of feed to produce one gallon. We can produce a gallon of vegetable milk with a total of 1 lb. of fat, carbohydrate, and beans.

“2. A breakthrough in flavor control has been achieved, which eliminates the former taste objections.

“3. Breakthroughs have also been made in using the soy milk by-products for low cost meat analogues which are highly acceptable and nutritious.

“We have approached the time that the soybean protein will not only relieve food shortages but will also satisfy the most sophisticated taste.” Address: Cedar Falls, Iowa.

274. Miller, Harry W., Jr. 1973. Observations from forty years of soy protein processing and engineering. Cedar Falls, Iowa: Soypro International, Inc. 8 p. Undated. Unpublished manuscript.

• **Summary:** “It was a late summer morning 1922 in the State of Maryland that my father announced at the breakfast table that I would accompany him on a short trip to Frederick, Maryland to look at a stone burr mill he wished to purchase for some soy milk experiments he wanted to conduct.

“Protein had always been a high priority topic in our house as Dr. John Harvey Kellogg had made a deep impression on my father (Dr. Harry W. Miller, Sr.) during his student medical days at Battle Creek, Michigan.

“On the way to Frederick my father explained to me that the mill he wished to purchase was to be used to prepare soybeans so that a white milky fluid of suspensible protein could be extracted from the beans. Little did I realize that I was to be introduced to a research field that would dominate my work and studies the rest of my life.

“Having purchased the mill the next step was to find a proper location to conduct the experiment. One of Maryland’s larger dairy farms was chosen for this, and after transporting the mill to the farm, it was bolted to heavy timbers and one of the dairy’s tractors was used to turn the pulley on the mill.

“To a boy of ten it was more interesting than spectacular to see a white milky liquid run down out of the mill instead of seeing the milk being drawn from the udder of a cow. However, this experiment made a lasting impression on a ten

year old who was always experimenting and constructing contraptions of his own.

“No, the liquid from that mill did not replace the milk produced on the farm. However, at the present rate of population increase, and ever-increasing shortages of grazing area to produce milk, we may in the future be looking to the use of this mill and its complementary equipment to supplement the animal products in lands of large dairy production.

“Shortly after my introduction to the first experiments on that dairy farm, I traveled to the land of the soybeans. This country was to become my home and source of information as my parents had accepted a call to mission service in China.

“Having been raised a strict vegetarian, the foods made from vegetables and grain sources were always a challenge to my curiosity.

“Roaming the streets of Shanghai every portable food caterer, street sidewalk restaurant, as well as the more sophisticated Buddhist (vegetarian) restaurant held a new horizon of future products made from the soybean.

“It was indelibly inscribed on my young mind that each procedure in each shop had a very definite and end-resulting purpose behind it.

“The first visit I made to a shop which produced these foods, the owner would address me. ‘What is your honorable name,’ and my answer would be, ‘my humble name is “Show Me,”’ translated small rice.

“My childish curiosity either amused the shop keepers or my youth intrigued them. Regardless, I was soon known as ‘small rice.’ in all these shops and home processing establishments and was allowed to roam at will and have my questions answered frankly—so much so, that I was able to get answers and ingredient names that my elders were unable to secure.

“Basically, the first step in extracting protein was to hydrate the bean. I found that each shop had some variation in soaking the bean. Hot water was used in one place and cold in another. Some added chemicals to the soaking water and others varied by prewashing the bean before soaking while others washed the beans after soaking.

“Although I knew that all their variations were vital to the end product, it was to be several years before I would be using these various steps to achieve end results.

“During my earliest experience with processing, I learned that enzyme action is definitely affected by these variations in procedure.

“The Orientals extract soy protein to produce soy curd, in its various forms, and soy skin or film membrane. Note: This is the earliest English-language document seen (Oct. 2012) that uses the term “soy skin” or the term “film membrane” to refer to yuba.

“Soy curd is produced by coagulating the extracted, liquid-suspended protein. After being pressed from

the granular residue of the bean, a liquid white protein suspension is left. Each shop had a different heat to bring the liquid to before adding the coagulatory chemical.

“Each producer had a different product for the customer. One would have a large cake of rather coarse curd. This they cut into blocks according to the purchaser’s need. The buyer taking it would flavor and prepare it as he desired.

“Another shop would produce a firmer curd which was pressed into small cakes; some were flavored with sesame oil; some peanut oil in which they were deep fried; and others were boiled in soy sauce and sold in this form to the customers.

“They also had what I called the yogurt shop. This was a very exacting procedure of heat control and quantity of coagulant to produce a yogurt-like curd which was chilled in bowls and served with rice malt poured on top to flavor it.

“There was one shop that pressed a fine curd till it was rather dry. These cakes were cut into square pieces about 3/4 of an inch square, were stacked on bamboo mat trays and placed in a culture-inoculated, heat-controlled room for three days. After this period the mold-covered squares were put loosely in glass jars in a hot pickling juice with ginger, ground red peppers, rice wine, brown sugar, and salt, and were sealed so the sauce would preserve the curd and flavor it [to make fermented tofu]. This product is sent all over the world to delight the palates of the Orientals.

“Perhaps the most interesting to me was the film protein [yuba] produced by heating the liquid extract to a definite regulated temperature and allowing a film to form on the top of it. This is picked up with a long chopstick and hung on a wire line to dry.

“Here again, liquid flavored films were produced by temperature changes. One way of changing the thickness of the film was to allow the liquid to evaporate so that the last films to be produced from a pot of liquid would be thicker than the first. Also, the fuel used would change the flavor of the film as the smoke from coal, charcoal rice straw and wet saw dust, or bamboo splints each had a definite taste.

“Not being satisfied with seeing these products made, I was determined to see how they were used; so ‘Small Rice’ would go to the kitchen of the Buddhist Restaurant long before dawn to watch the cooks soak these film in various sauces, some to be rolled tightly into bologna-like rolls and broiled for hours in a soy sauce, ginger, and anise flavored juice. This roll, when sliced, had a beef-jerky like flavor. Another was to lay the films one after another on top of each other to be sprinkled (each one) with rice wine, sesame oil and monosodium glutamate. These films were folded into a half moon shape, placed in bamboo trays and steamed for several hours. They were then placed on a screen to dry the surface moisture, then fried in deep sesame oil or peanut oil whichever flavor was desired.

“When these foods with various seasonings were served you would have anything from fish to turkey or duck.

“It was the eating of these Buddhist meats that gave me the courage in later life to learn to eat animal tissue, as I had been raised a strict vegetarian.

“Had I not learned to eat and taste these various animal products, I am afraid I would be like the official in India: when describing to him how we could make meat analogs from soy milk residue he asked, ‘Well, what does chicken taste like?’

“This early experience in China was a challenge to make extensive study into each country’s dietary and food flavor habits before designing a product for them.

“In the early 1930’s with the encouragement of W.J. Morse and La Clara Reed of the U.S. Department of Agriculture, my father and I, using equipment supplied jointly by the Department and ourselves, produced a spray-dried soy milk formula which was granted a patent by the U.S. Patent Office, and which the American Medical Association accorded its own highly valued seal of acceptance for an infant formula.

“The first commercial plant was installed in Shanghai, China, during 1936 and 1937. Although we were using soy milk for feeding babies and institutional employees, due to the high price of pasteurized cow’s milk there was a challenge to install a soy dairy to produce a vegetable milk at a low price.” Continued. Address: Cedar Falls, Iowa.

275. Circle, Sidney J. 1974. Soy proteins in dairy-type foods, beverages, confections, dietary, and other foods. *J. of the American Oil Chemists’ Society* 51(1):198A-199A. Jan. Proceedings, World Soy Protein Conference, Munich, Germany, Nov. 11-14, 1973.

• **Summary:** Preparation and properties of the following soy-based product groups are given: Beverages: traditional unfermented soy milks, traditional fermented–yogurt-like milks, simulated milks based on soy protein isolate incl. fermented yogurt-like types, still non-carbonated beverages, carbonated beverages.

Simulated sweet creams. Sour cream. Margarine and spreads. Cheese-like foods: Tofu, sufu, simulated cream cheese, simulated cured and processed cheese, cheese spreads and dips. Frozen desserts (incl. ice cream and sherbet). Whipped toppings. Substitute nuts and fruits.

“Table vegetable, green soybeans, and [soy] bean sprouts. Available in canned form, also fresh in season in some areas. Dry beans can be sprouted in home.

“Soups. Protein fortification as thickener (soy flour, soy protein concentrate, or soy protein isolate) or in high protein noodles or croutons. Oriental use of yuba.” Address: Anderson Clayton Foods, Richardson, Texas.

276. Kushi, Michio. 1974. Natural agriculture and food processing. *Michio Kushi Seminar Report (Brookline, Massachusetts)* No. 3. Feb. 26 and 27. p. 5-30. Edited by Ane & Mark Riegel.

• **Summary:** On Feb. 26 Mr. Kushi, a macrobiotic teacher, lectured on: Tekka—"Tekka is used not only as a condiment, but also for medicinal use. Tekka is made from three different roots—carrots, burdock, and lotus roots." The "volume of miso is flexible... Homemade tekka is traditionally made in a cast iron frying pan." The Japanese word "tekka" derives from *tetsu* (which means iron) and *ka* (fire). "For medicinal use, yang miso is better."

Miso and miso manufacturing, including how to make malt (rice koji) (8 pages). Note: This section indicates that Mr. Kushi has some basic knowledge of the subject but there are many errors. 1. Koji is not malt (which refers to soaked, germinated cereal grains), but molded cereal grains or soybeans. 2. Koji kin is not malt bacteria, but koji molds. 3. One does not add enzymes to miso and enzymes do not grow. Even modern miso factories do not add enzymes when making miso. 4. The entire mixture is not stirred after 20-25 days to add oxygen. Kushi says you must keep miso for a least 6 months, but to cure sickness it must be kept for 2-5 years. Miso soup can compensate for the bad qualities of meat and eggs—so everyone should eat miso soup daily. Soup stocks and miso soup.

On Feb. 27 he discussed: General outline for making shoyu—soy sauce (4 p.), including discussions with Kikkoman on making natural shoyu starting with whole soybeans. In the early years after 1973, Kikkoman wanted to make natural shoyu and sent Kushi several samples, but he turned them all down, in large part because Kikkoman wanted to use defatted soybean meal instead of whole soybeans. Erewhon is buying shoyu from 3 companies in Japan. But Kushi says the quality is declining compared to five years ago [i.e., 1969], when it had powerful healing effects when taken with bancha or kuzu. He adds: "Around Boston or on our Ashburnham land, I really hope we can begin to make miso or soy sauce." Kushi says that now, after pasteurization, coloring and flavoring is added [not true, except in HVP soy sauce]. "Traditionally [in Japan] for this they used natural herbs. For a sweeter taste and darker color they traditionally used kanzō [kanrō?] or 'sweet grass = sweet herb.'"

"Formerly, until modern technological methods started to be applied, almost each village made their own shoyu like this, either as a joint community project, or someone with money made it and sold it to several villages."

Using bean and grain sprouts—moyashi (including soy sprouts). Other soybean products: Fried tofu (two methods for agé). Ganmodoki. Kori-tofu or koya-tofu (freeze-dried tofu). Soybean milk ("Soy milk is very yin." Note: Most Japanese and Japanese scientists consider soymilk to be an "alkaline" {*arukari-sei*} beverage, which therefore promotes good health). Yuba. In the discussion (p. 28), yogurt made by leaving soymilk unrefrigerated and "Chinese fermented tofu... fu nyu" are mentioned. The U.N. [United Nations] recommendations on food, using vegetable proteins.

Note: This is the earliest English-language document seen (May 2012) that uses the term "freeze-dried tofu" to refer to dried-frozen tofu. Address: Brookline, Massachusetts.

277. Gerner, Bob. 1974. Log of trip to Japan to study traditional natural foods, 28 Feb.–2 March 1974. Part I (Log—unpublished). Westbrae Natural Foods Inc., Berkeley, CA 94710. 26 p. Unpublished log. Handwritten. 20 x 8 cm.

• **Summary:** 1974 Feb. 28. Meet Bill Shurtleff and Mr. Masa Miyashita of Kikkoman export dept. (good man, speaks fluent English) at the Imperial Hotel (*Teikoku Hosteru*, built in the 1920s by Frank Lloyd Wright) in Tokyo. Talk for 4 hours. Westbrae hires Shurtleff as an interpreter and guide.

March 1. Dinner at Sasa-no-Yuki, beautiful old restaurant that specializes in tofu cuisine.

March 4, Monday. Visit Kikkoman in Noda with Shurtleff and Miyashita. Tour Plant #7, then Plant #4 (the Goyo-Gura), which produces the emperor's shoyu in the traditional, natural way. "Saw 5 batches of moromi mash from 1 month old to 12 months old, and tasted each one. Delicious. Great color change between the 1 month and the 12 month moromi. We saw all the traditional tools. The moromi vats were made of cedar and last approximately 200 years." See a movie on how shoyu is made. Lunch at a sushi shop. Visit two miso retail shops with Shurtleff near his home. One had 42-45 types of miso (mostly rice miso, with 1 each Hatcho, barley, and cooked miso), the other 32-35 types. Tasted many and learned the differences. I buy Saikyo sweet white miso and Hatcho miso.

March 5, Tues. Attend a cooking class at Lima Ohsawa's house, then have dinner with Lima and the class members. Sick for the next 2 days.

March 9, Sat. Call then meet Mr. Kazama of Mitoku. He represents Erewhon. We may import through Kikkoman's Pacific Trading. Plan trip to Sendai Miso-Shoyu. Sendai is interested in using organic soybeans to make shoyu but would like a contract stating that all of it will be purchased when done. Dinner at the natural foods restaurant, Hakumon run by a Frenchman named Pierre.

March 11, Mon. Meet Shurtleff early at Tokyo station. Take bullet train (Shinkansen) to visit two Hatcho miso plants (Hayakawa Kyuemon Shoten, and Ota Shoten in Okazaki city, Aichi prefecture). Both plants claim to be over 600 years old. They use modern steamers and koji rooms. They pile 4-6 tons of rocks atop each large vat of miso, age it for 2 summers. It becomes very mellow when fully aged. They also use about half of their Hatcho miso to make Akadashi miso. It also contains caramel coloring, barley syrup, MSG, shoyu, a white miso, and preservatives. They sell a lot of Akadashi but only a little Hatcho miso. Lunch at an udon noodle shop that hand makes and cuts the noodles. Lots of slurping. Then visit a plant that makes real tamari and shoyu. All the tamari is mixed with junk. Train to Kyoto;

stay at Friends World College. Note: This is the earliest English-language document seen (March 2012) that contains the term “real tamari.”

March 12, Tues. Visit a tofu maker, a yuba maker (*Yuba Han*), then the company that makes Saikyo sweet white miso. The owner lies to us initially about his miso aging and caramel coloring (which tastes and looks like tar). Then he reverses himself without batting an eye. Lunch at a 300 year old Zen vegetarian restaurant (*Okutan* near *Nanzenji* temple); so beautiful that I start crying. Fantastic place. Light snow falling by the pond. Enjoy Simmering Tofu (*Yu-dofu*) in a broth. Then we go to a 400-year old tofu restaurant (*Nakamura-ro*) at a shrine (*Gion*) for dessert of *amazake* and *Dengaku* (skewered and braised with sweet miso). On to a second miso factory. It is a bore and the owner does not seem sincere but he has a great reputation among macrobiotics. He makes both natural and sweet white miso. Shurtleff visited him last year. For white miso the soybeans are boiled; for red miso they are steamed. Some white miso contains sodium thiosulphate bleach. Visit another yuba shop. They use granite grinding stones to make soymilk, cast iron pot to cook it in and copper skimming tables. A very beautiful place. Meet Ty Smith at a soba shop. He is a chain smoker, just quit working for Muso, and promoting a cooperative effort between Janus, Chico-San, Erewhon, and The Well to import foods from Japan. Evening at Jittoku coffee house, owned by an American, in a large old Japanese treasury (*kura*). Back to Tokyo by train. Talk until 1:00 A.M.

March 14, Thurs. Meet Kazama and Shurtleff, and take express train to Sendai Miso-Shoyu. We are treated royally by Mr. Muro. Long introduction and discussion. Visit their 2 plants, one modern, one traditional, natural. They make only rice miso. Their production of natural miso is more than all that imported to America by Erewhon and Janus. They age their natural shoyu 18-24 months at the request of Michio Kushi and Erewhon. They have 9 aging vats for the first year, then it is switched to other tanks. They invite us to have a shoyu taste test among 3 products: Kikkoman regular shoyu, Sendai regular, Sendai natural. Both Bill and I choose Kikkoman as best; good aroma, color, and taste. They congratulate us on our good taste. Sendai regular had very strong salty taste. We both liked the Sendai natural least; good color, no aroma, very mild taste. Sendai people say only one year is needed to ferment shoyu naturally. We might sell them organic soybeans (we had purchased 12 truckloads from a farmer) and get shoyu back in 1 year. We meet the president (Sasaki?), born 1928. Elegant geisha-hosted tempura and sushi dinner with president, 2 vice presidents, production manager, and a consulting professor (Shibasaki sensei). After dinner to a traditional bar for *doburoku* (thick, unrefined sake with a low alcohol content [or was it *nigori-zake*?]), then a sushi house. Shurtleff leaves for Tokyo on night train.

March 16, Sat. Visit Shurtleff and Aoyagi's home for

lunch. We have dried-frozen tofu main dish, salad with creamy tofu dressing, strawberries with tofu whipped cream. Delicious. Then we learn how to make tofu at home. It's easy. I'll make it at home in California, then at our Westbrae Natural Foods retail store on Gilman Street (Note: This led to a long series of tofu classes by Gerner, Liz Horowitz, and later Shurtleff & Aoyagi; The retail store changed its name in late 1976 to Gilman Street Gourmet).

Note 1. This is the earliest document seen (April 2006) concerning Westbrae Natural Foods.

Note 2. This is the earliest English-language document seen (Jan. 2012) that contains the term “creamy tofu dressing” (or “dressings”) a term coined by Shurtleff and Aoyagi in *The Book of Tofu* (p. 108). Continued. Address: President & Chairman of the Board, Westbrae Natural Foods Inc., 1224 10th St., Berkeley, California 94710.

278. Gerner, Bob. 1974. Log of trip to Japan to study traditional natural foods, 28 Feb.–2 March 1974. Part II (Log–unpublished). Westbrae Natural Foods Inc., Berkeley, CA 94710. 26 p. Unpublished log. Handwritten. 20 x 8 cm. • **Summary:** Continued: March 19, Tues. Take bullet train to Kyoto to meet Steve Earle of Muso Shokuhin. We 3 go to Okayama to see Fuchu Miso, that makes mugi miso (the barley miso sold in our store) and sweet white miso. The president's wife is the epitome of Japanese woman. For lunch we have tofu burgers with Italian sauce and mushrooms in a bento made by Akiko. Delicious. Take a boat to Shodo-shima where Marushima Shoyu Co. is located. Island is also famous for toasted sesame oil. Arrive at a ryokan at 6:30 P.M. VIP treatment. Bath before dinner and served in private room by geisha. Too much fish! Note: This is the earliest English-language document seen (May 2012) that contains the term “tofu burgers.”

March 20, Wed. Miso soup for breakfast. Visit Marushima Shoyu where Muso gets its “natural” shoyu for export to America. They have the newest wheat roasters (they roast it with sand), biggest presses. We see cement aging tanks in a temperature-controlled room, then onto a large red building with 150 aging tanks. But we see no whole soybeans, only soybean meal (*dasshi daizu*). “I feel the owner is a liar and this is a bogus operation. The scene gets heavy and ugly. Bill is great and presses on with questions.” The owner claims that 40% of their shoyu is natural, aged for 3 years and made with whole soybeans; 60% made with soybean meal, temperature controlled for 7 months. Thus there should be about 120 vats of natural versus 60 regular. But where is the natural? Their faces turn red. We have caught them red handed. The owner take us to one musty, dirty old building with 25 vats, only 8 of which contain shoyu, some only half full. Lots of cockroaches. Looks like no one ever goes here. Still no sign of a single whole soybean. Uneasy departure. Steve Earle is embarrassed. We take a train to Tokyo. We present Earle/Muso with a list of

inconsistencies and ask for a written reply.

March 21, Thurs. Visit Mr. Kazama's miso factory (*Ikeda Kojiro Miso Shoten* in Kawaguchi-shi near Tokyo), that makes barley miso, the only brown rice miso in Japan, and shoyu. Call Ty Smith of Muso. He says Muso was very happy with our findings concerning the problems at Marushima, and that they have contacted a new source in Kyushu. Marushima said their president died a year or so ago and his son took over. They have lost the old feeling and tradition.

March 22, Fri. 6:00 A.M. Meet with Bill Shurtleff at his tofu master's tofu shop (*San-Gen-Ya*, run by Mr. Toshio Arai). We watch how he makes tofu. Beautiful place (12 feet square) attached to their home. Beautiful people; they don't speak English. Both make tofu starting early in the morning. He delivers in the afternoon and she sells out of the shop. He gave me hot rich soymilk (from *kinugoshi*) with wild mountain honey. Both incredible. So sweet and delicious. They also serve us freshly made agé, kinugoshi, and natto. Lunch at Shurtleff and Aoyagi's home: Noodles and tofu, Chinese fried tofu, tofu pudding, agé, kinugoshi, and mikan orange. We go over my notes from the miso factory. We copy all of his notes. Then I leave, very sad, but the friendship will remain. Akiko is a remarkable lady. Meet Mr. Kazama and go to Pacific Trading. Lousy meeting with Mr. Masaaki Miki (sales manager), and Masa Miyashita (export dept). Go to airport.

Results of the trip: (1) Westbrae started (about 9 months later) to import many varieties of miso, plus shoyu, and other products from Mr. Kazama in Japan. Bob Gerner was the founder, president, and chairman of the board of Westbrae; (2) Bob Gerner and Liz Horowitz taught "Tofu and Miso Cookery Classes" in Berkeley during 1976; (3) Westbrae published and distributed widely two brochures, *What is Miso?* (May 1976) and *What is Tofu?* (July 1976) written by Shurtleff and Aoyagi; (4) In 1976 Westbrae Natural Foods Inc. decided to sell its retail store at 1336 Gilman St. in order to focus on being a distributor and importer. The store had been losing money. Bob Gerner bought it in June 1976 for the low price offered by the highest bidder. He remodeled the store, renamed it Gilman Street Gourmet, and re-opened it in Sept. 1976. In the spring of 1977 Gerner added a deli to the store; there he made and sold Tofu Burgers, Tofu Treasure Balls, and Tofu Steaks Sauteed in Ginger Sauce. The same week that the deli opened, Gerner sold 3,000 to 4,000 of his new Tofu Burgers out of the Westbrae booth at the New Earth Exposition in San Francisco. Bob's nephew and sister (Margaret) made the tofu burgers. The burgers sold equally well at the same Expo in 1978 and 1979; (5) Shurtleff and Aoyagi wrote *The Book of Miso* and their New-age Foods Study Center moved toward becoming Soyfoods Center.

Note: In late November 1974 Mr. Kazama came to a meeting at Pajaro Dunes by Santa Cruz, sponsored by The Well. The idea was to set up a natural foods trade

association. Erewhon wanted to control all imports of Japanese natural foods from Japan. Janus and The Well both had to import through Erewhon. They said Westbrae must buy through them via The Well (Roger Hillyard/Pure & Simple), and pay a 5% commission. Kazama had to defer to them. Gerner refused and they backed off. Ty Smith, now head of Erewhon, was upset that Westbrae was not paying a commission. Gerner told him "Tough." So Westbrae ended up importing from Kazama. Address: President & Chairman of the Board, Westbrae Natural Foods Inc., 1224 10th St., Berkeley, California 94710.

279. *Japan in Pictures*. 1974. Bean curd, a subsidiary food as delicious as meat. Instant bean curd developed in Japan. 16(1):12-15. [1 ref. Eng]

• **Summary:** The first 2 pages of this article contain 6 color photos showing tofu in Japanese-style (Yu-dofu, Dengaku, Sukiyaki, and Clear Soup), and Chinese-style (Sheng Pan Tofu, Guo Tie Tofu) recipes. "A block of bean curd weighing 340 grams, measuring 7 x 10.5 x 3.5 centimeters and being sold for US\$0.20, contains as much as 21 grams of protein. To take this much protein, one must drink 3 bottles (or 600 cc) of cow's milk at the cost of US\$0.35.

The conventional (traditional) process for preparing bean curd is described. "In Japan as many as 38,000 bean curd makers are operating on a small scale. Under these circumstances the bean curd industry has been far from modernized."

The next two pages, titled "Modernization of bean curd making," compare the traditional process for making tofu (6 black-and-white photos show the Yuba Han yuba shop in Kyoto) with a modern process developed by House Food Industrial Company, and used to make "House Hontofu" at their new modern factory in the city of Sano, 100 km north of Tokyo. Two photos are given of the equipment in the plant and 6 of the package and how this instant bean curd [silken tofu] is prepared at home. At the modern plant, a mixture of ground soybeans and water "is applied to a centrifugal separator, which separates it into soymilk and refuse. The soymilk, which has been concentrated by being heated, is sprayed into a tank heated to 100°C, a process which dehydrates the milk to produce a bean curd base in powdered form [powdered soymilk]. A unit quantity of this powder is packed in an aluminum-foil bag containing nitrogen gas, which is put on the market accompanied by a small amount of coagulant.

"Process to prepare bean curd on the spot. Put a bag of 'Hontofu' in 600 cc of water, which is to be agitated [with a whisk]. Boil about 3 minutes. Mix the accompanying coagulant [glucono delta-lactone] immediately after the flame is put out. Transfer the substance into the container [a plastic box shaped like a cake of tofu]. Leave it for about 20 minutes and a block of bean curd is ready. Bean curd taken out of container [into a bowl of water]." Address: Japan.

280. Barr, Pat. 1974. Something for library or kitchen: *The Mandarin Way*, by Cecilia Sun Yun Chiang as told to Allan Carr. *Washington Post*. March 6. p. B4.

• **Summary:** A good review of a fine book by a great woman. Cecilia is now the “presiding genius” at The Mandarin restaurant in San Francisco, California. The reviewer recommends this book “most warmly to all who are willing to go in search of items such as bean-curd sheets and sea cucumbers...”

Note: This is the earliest document seen (Oct. 2012) in all major U.S. newspapers digitized by ProQuest that uses the term “bean-curd sheets,” which refers to yuba. The new term appears in 37 documents between 1974 and the present, including 5 in the 1970s, at least 24 in the 1980s.

281. Chiang, Cecilia Sun Yun; Carr, Allan. 1974. *The Mandarin way*. Boston, Massachusetts: Little, Brown and Co. xiv + 274 p. Index. 23 cm.

• **Summary:** This charming, interesting book (“as told to Allan Carr” by Cecilia) is combination biography and Chinese cookbook organized by months (moons)—so that it flows with the seasons and seasonal foods. For each of the twelve moons of the old lunar calendar, there is one chapter (e.g., First Moon) of Cecilia’s memories of growing up in China, as one of 13 children in a family of great wealth, followed by an “Interlude” chapter on a particular theme (e.g., “Of shopping and its pleasures”) with her favorite recipes for that time of year.

Soyfoods (including “soy” or “soy sauce,” “fresh bean curd,” and “preserved bean curd”) are mentioned throughout the book—for example: Freshwater “dancing shrimp” were “eaten raw after being dipped in a tangy sauce of preserved bean curd [fermented tofu], pepper, soy sauce, coriander and wine” (p. 8). The pork shoulder was “‘red-cooked’ in soy [sauce] and wine...”

Note: This is the earliest English-language document seen (Oct. 2010) that uses the term “preserved bean curd” to refer to a type of fermented tofu.

Some measure of success in reproducing authentic meals outside of China “can be achieved if the basic supplies are obtained either by purchasing them in Chinese shops or ordering them by mail (several sources, with addresses, are given...)” These include: “fresh ginger root, dried bean curd, dried bean curd [pressed tofu; doufu-gan], sheets [yuba], sesame seed paste, sesame seed oil,... soy sauce,... red bean paste [azuki, also called “1 can sweet red-bean paste” (p. 164)], hot bean sauce” (p. 21)).

Fish with hot spicy bean curd sauce (*Tou-pan la-yü*, with “1 tablespoon Szechwan hot bean curd paste,” p. 50). Five-spiced spareribs, Peking style (with “2 tablespoons pale soy sauce,” p. 71). Peking duck (with “hoisin (duck) sauce,” p. 96). Red-cooked chicken with chestnuts (with “4 tablespoons dark soy sauce, Japanese Kikkoman or imported,” p. 116).

Chopped spinach with shredded bean curd (*Po-ts’ai pan tou-fu kan*, with “dry pressed bean curd,” p. 138). Szechwan four season beans (with “1 heaping tablespoon hot soy bean paste,” p. 162).

In San Francisco’s Chinatown, where the shops are predominantly Cantonese, the “dry goods store provides me with pressed bean curd and bean curd sheets [yuba, doufu pi],...”

Talk with Cecilia Chiang. 2008. Nov. 15. She says that “bean curd sheets” refers to doufu pi or yuba; pressed bean curd to doufu-gan. “Hot bean sauce” is *la douban jiang*, which is *douban jiang* with hot chili peppers; both are made with soybeans. Red bean paste is the same as “sweet red bean paste,” made with azuki beans (*xiao hong dou*), and the same as Japanese *an*. Address: 1. Founder and owner, The Mandarin restaurant, Ghirardelli Square, San Francisco, California.

282. Lin, Florence. 1974. East is red & west is hot. *New York Times*. May 19. p. 86, 88. Supplement.

• **Summary:** In eastern China, the distinctive cooking style is known as “red cooking,” which has to do with soy sauce—not ideology. Shanghai is the gastronomic capital of the east, although some favor Yangchow. In western China, the food is spicy hot. Six recipes are given; most call for soy sauce (dark or regular). The first recipe, *Lo han chai* (Buddha’s delight) calls for “2 ounces er chu (dried soy bean milk skin) [yuba], optional,” and light soy sauce.

Note: This is the earliest English-language document seen (Oct. 2012) that uses the terms “er chu” or “soy bean milk skin” or “dried soy bean milk skin” to refer to yuba. Address: Cooking teacher (China Institute) and author.

283. Spira, Ruth Rodale. 1974. *Naturally Chinese*. Emmaus, Pennsylvania: Rodale Press, Inc. iii + 346 p. Illust. Index. 25 cm. [8 ref]

• **Summary:** Soy-related recipes include: Deep-fried bean curd with sesame sauce (p. 91, with “4 cakes bean curd,” each of which is cut into 9 pieces, dried on paper toweling, then deep fried at 375°F). Chicken and bean curd stick soup (p. 109, with “¼ pound bean curd stick” [dried yuba sticks]). Bean curd and greens soup (p. 115, with “1½ pieces fresh bean curd” [tofu]). Stir-fried eggs with soybean sprouts (p. 226). Stir-fried eggs with bean curd (p. 227, with “2 fresh bean curd cakes or 1/3 pound homemade bean curd”). Bean curd sautéed with eggs (p. 258, with “4 cakes fresh bean curd”). Stir-fried bean curd with black mushrooms (p. 259). Stir-fried bean curd with squash (p. 260). Homemade bean curd with soybeans (p. 261-62, curded with vinegar or gypsum / calcium sulfate. The residue [okara], which is called “Soybean pulp, may be added to ground beef up to a 1 to 2 ratio.” Step 8. “Remove curd from bag and mix with salt” is a new invention in making tofu—which ends up with a texture like cottage cheese and seasoned

with salt). Homemade bean curd with soybean powder (p. 262-63, curded with vinegar or gypsum). Celery cabbage creamed in soy milk (p. 269, with “4 heaping teaspoons soybean powder.” “2. Place soybean powder and water in a pint jar. Tighten lid and shake well. Add cornstarch and honey to soybean ‘milk’”). Soybean sprouts with celery (p. 273). Spinach in soy sauce (p. 276). Vegetarian dish of the Buddhists (p. 277-78, with “2 ounces dried bean curd” [probably dried yuba sticks] and “3 cakes fresh bean curd”).

“A guide to Chinese cooking ingredients” (p. 289-324) and “Glossary” (p. 325-26) describe: Bean curd (dow foo—tofu, incl. pressed curd {firmer}, canned bean curd {somewhat less creamy than the fresh}). Bean curd, dried (foo jook [dried yuba sticks]; tiem jook is sweeter than foo jook). Bean curd cheese (fooh yu [fermented tofu]). Bean paste, yellow (wong dow sa). Bean sauce, brown (min see jeung). Beans, black soy (kei tou). Beans, black fermented (dow see; these black soybeans are fermented, dried and salted). Hoisin sauce (hoy sin jeung. “A soybean-based sauce...”). Soybean sprouts (Da dow ngah).

Photos show: (1) Three squares (“pillows”) of pressed bean curd. (2) A box of “Dried bean curd” [foo jook] (p. 296). (3) Black soybeans (enlarged) (p. 299). (4) A bag full of “Salted black bean (spiced)” (fermented black beans). Made by Koon Chun Sauce Factory, Hong Kong. (p. 300). Note: As of Nov. 2011 the company (in the New Territories, Hong Kong, with a website) is named “Koon Chun Hing Kee Soy & Sauce Factory Ltd.”

284. Fu, P’ei-mei. 1974-1976. Peimei shi pu [Pei Mei’s Chinese cook book. 2 vols.]. Taipei, Taiwan. Illust. (color). No index. 22 cm. [Chi; Eng]*

• **Summary:** Volume 1 published April 1976, copyright 1969; vol. 2 published July 1974, copyright 1974. Chinese title also written *P’ei-mei shih p’u*. Address: Cooking teacher, Taipei, Taiwan.

285. Kobayashi, Keizô. 1974. Shôjin ryôri nyûmon [Entry gate to Zen vegetarian cookery]. Tokyo: Shibata Shoten. 230 p. Illust. 22 cm. [Jap]

• **Summary:** The author was born in 1930. Address: Formerly asst. head cook at Eihei-ji Zen Monastery. Now head priest, Rinsho-ji, Tateoka, Murayama-shi, Yamagata prefecture.

286. Lo, Kenneth H.C. 1974. Chinese vegetable and vegetarian cooking. London: Faber & Faber, Ltd. 172 p. Index. 21 cm.

• **Summary:** This original edition, published in London, is smaller in height, has no illustrations, and 13 fewer pages than the American edition published the same year. The recipes are the same, but on slightly different pages; For details, see the American edition (1974).

287. Lo, Kenneth H.C. 1974. Chinese vegetarian cooking. New York, NY: Pantheon Books (Div. of Random House). 185 p. Illust. by Tom Funk. Index. 22 cm.

• **Summary:** Originally published in 1974 in London, England, as “Chinese Vegetable and Vegetarian Cooking” by Faber & Faber, Ltd. However that book is smaller in height, has no illustrations, and 13 fewer pages than this American edition. The entire text has been lightly edited and re-set for American cooks and readers. The recipes are basically the same, but on slightly different pages, and with some titles slightly changed (e.g., from “sesame jam” to “sesame paste,” p. 133).

In the Introduction, under “Flavoring,” the following soybean products are listed: Soy sauce, black beans (salted), soybean paste (yellow and black), bean-curd cheese (red and yellow). Soy-related recipes include: Steamed bean curd with peanut butter sauce (p. 50). Hot-marinated bean-curd sticks [dried twisted yuba sticks] with quick-fried [mung] bean sprouts (with “yellow bean-curd cheese” [fermented tofu], p. 60-61). The Lo Han dish of the monks’ mixed vegetables (with tofu, and “red bean-curd cheese” [fermented tofu], p. 72-73). Hot assembly of shredded bamboo shoots and bean curd... (with tofu and “bean-curd cheese [fermented tofu], p. 74). Hot assembly of chestnuts, sliced lotus root, ginkgo nuts, peanuts, Chinese mushrooms, and bean curd (with tofu and “white bean-curd cheese” [fermented tofu], p. 75). Hot black bean and tomato sauce (Ratatouille Chinoise; with salted black beans and soybean paste, p. 82-83). Basic bean-curd soup (p. 105). Enriched bean-curd soup (p. 105). Soy eggs (with soy sauce, p. 125).

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the terms “yellow bean-curd cheese” or “red bean-curd cheese” or “white bean-curd cheese” to refer to fermented tofu.

There is an entire chapter titled “Bean Curd” (p. 135-48), with an introduction and the following recipes: Cold bean curd (with soy sauce and peanut oil). Cold bean curd with sesame paste or peanut butter (“Use 1½ tablespoons sesame paste,” p. 136). Hot-and-savory bean-curd pudding (with salted black beans). Hot-and-pungent bean-curd pudding. Red-cooked bean curd with bean-curd sticks [yuba] (with soybean paste and soy sauce; the sticks are about 20 inches long). Stir-fried bean curds. Bean curd stir fried with [mung] bean sprouts or spinach. Bean curd stir fried with green beans. Deep-fried bean curd stir fried with duck eggs and cucumber skins. Deep-fried bean curd stir fried with eggs, mushrooms, and wood ears. Stir-fried shredded bean curd with dried bamboo shoots, dried mushrooms, lily-bud stems, and seaweed. Clear-simmered bean curds. Clear-simmered bean curd with lettuce and cellophane noodles. Clear-simmered bean curd with [mung] bean sprouts, water chestnuts, and sliced cucumbers.

Note 2. This is the earliest English-language document seen (June 2003) that uses the term “sesame paste.”

288. Masuda, Koh. editor in chief 1974. Kenkyusha's new Japanese-English dictionary. 4th edition. Tokyo: Kenkyusha. xiii + 2111 p. 27 cm. [Eng; jap]

• **Summary:** The first edition of this superb dictionary was published in 1918, the second in 1931, and the third in 1954. The words are listed in alphabetical order. Some of the definitions of soy-related terms are quite poor. Examples:

Daitokuji natto: not listed.

edamame: "green soybeans." [Better: Green vegetable soybeans, or Edamamé].

Hamananatto: not listed.

Hamanatto: not listed.

hiryôzu: not listed.

kinugoshi [tofu]: fine-grained *tofu*.

kogori-dôfu = kôya-dôfu.

koikuchi shoyu: not listed.

kôji: "*koji*." Good.

miso: "*miso*." Good. Also defines: [ama-miso]: slightly-salted miso.

[miso-koshi]: a miso strainer.

[miso mame]: a soybean; a soya (bean).

[miso-shiru]: miso soup. And many more.

nattô: "fermented soybeans." [Better: Whole soybeans fermented with *Bacillus subtilis*]. Nattô-jiru: "Miso soup with minced fermented soybeans." Good.

nomame: not listed.

okara: bean-curd (*tofu*) refuse; lees of bean curd.

omiotsuke [Jap: Misoshiru] See miso [Miso soup; word used by women only].

otsuke [Jap: Misoshiru] Miso potage (soup).

saishikomi shoyu: not listed.

shitaji: soy. See shôyu.

shôyu: "soy (sauce)." Better: Soy sauce.

tamari: "(a kind of) soy; soy sauce; sauce from refined soy."

tôfu: "bean curd [cheese]; *tofu*."

[yaki-dofu]: "roasted bean curd."

[tofu itcho]: a piece (cake) of bean curd.

[tofu-ya]: "a tofu dealer (seller, maker)."

tônyû: "soybean (soya) milk." [Better: Soy milk, soya milk, or soybean milk].

tsurumame: not listed.

usukuchi shoyu: not listed.

yuba: "dried bean curds" [sic. Better: The protein-lipid film formed atop soymilk when it is heated].

289. Shinoda, Osamu. 1974. Chûgoku shokumotsu-shi [History of foods and diet in China]. Tokyo: Shibata Shoten. 389 p. Illust. Index. 21 cm. [Jap]

290. Tressler, Donald K.; Sultan, W.J. 1974. Food products formulary. Vol. 2. Cereals, baked goods, dairy and egg products. Westport, Connecticut: AVI Publishing Co., Inc.

348 p. See p. 170. Index. 27 cm. *

291. Wu, Lawrence C.; Bates, R.P. 1975. Protein-lipid films as meat substitutes. *J. of Food Science* 40(1):160-63. Jan/Feb. [21 ref]

• **Summary:** Starting with traditional yuba, texturization is achieved in two ways with rehydrated and flavored films: (1) The yuba sheets are soaked in appropriate flavoring solutions such as soy or meat broths, layered several sheets thick, rolled tightly, wrapped firmly in cloth, then tied to retain internal pressure. The rolls are then steamed for about one hour and consumed as a main dish.

(2) Layers of the moist, flavored films are packed into aluminum molds shaped like whole chicken or fish. "The center of the mold may be stuffed with film remnants or fitted with a wooden plug, thus providing a hollow space for subsequent stuffing ingredients. The mold is closed and screwed or clamped shut thereby applying manual pressure. Note: For best results the mold should be steamed.

These yuba products were found to be highly acceptable to due to a combination of pleasing texture and flavor characteristics.

The most influential variable affecting both the texture and appearance of the meat substitutes was the film moisture content. A moisture content of 50-75% was found to represent a good range for fabrication.

Contains 4 figures and 3 tables. Address: Food Science Dep., Univ. of Florida, IFAS, Gainesville, FL 32611.

292. Bates, R.P.; Wu, Lawrence C. 1975. Protein quality of soy protein-lipid films (yuba) and derived fractions: A research note. *J. of Food Science* 40(2):425-26. March/April. [11 ref]

• **Summary:** The writers know of no information regarding the nutritional quality of yuba. This study was undertaken to establish the protein quality of yuba and several soy fractions derived during the formation of yuba films.

Yuba was made from Bragg variety soybeans. "The recovered films were air dried at 50°C for 4-8 hours and the whey and residue [okara] were freeze dried at 70°C for 24 hours." Protein efficiency ratio [PER] was determined using 10 mile albino rats per diet.

Table 1 shows the PERs of yuba processing fractions. Yuba 1.44. Yuba + methionine 1.1 gm per 16 gm nitrogen = 2.08. Yuba + methionine 2.2 gm per 16 gm nitrogen = 2.85. Yuba whey 1.85. Residue 1.13 Casein ref 2.88.

Fig. 1 shows "Film formation flow scheme, dry mass and protein distribution. Dry mass (in grams) is underlined; Protein mass is in parentheses; and percentage of total protein is in brackets.

Conclusion: The protein quality of plain yuba is relatively low, but it responds dramatically to methionine supplementation. Address: Food Science Dep., Univ. of Florida, IFAS, Gainesville, Florida 32611.

293. Watanabe, Ken; Watanabe, Tomonori; Okamoto, Ssusmu. 1975. Yuba no makushitsu ni taisuru shishitsu no kanyo ni tsuite [On the contribution of lipid to the properties of yuba film]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Food Science and Technology)* 22(4):143-47. [9 ref. Jap]

• **Summary:** Early scientific study on yuba products. Address: Faculty of Agriculture, Tokyo Noko Univ., Fuchushi, Tokyo.

294. Jaynes, H.O.; Chou, W.N. 1975. New method to produce soy protein-lipid films. *Food Product Development* 9(4):86, 90. May. [8 ref]

• **Summary:** The formation of “soy milk skin” (yuba) has been characterized as a combination of heat denaturation of soy protein coupled with a polymerization involving protein-lipid interaction. The product is thought to stabilize on the surface because of easy water loss through the air / water interface.

This soy milk skin could be an interesting addition to the American diet because of its high protein content, bland flavor, desirable texture, and adaptability as an ingredient.

Since the traditional process does not lend itself to mechanization or large-scale production, research was conducted to develop an alternative process—using Hill variety soybeans and isoelectric precipitation of soy milk protein. The new method was named the “isolate method.” The slurry was spread evenly on a Teflon coated baking pan and oven dried for one hour at 100°C.

In terms of composition, yield and organoleptic acceptability, films made by the isolate method compared favorably with traditionally made films. Films made by either method showed excellent storage stability. Address: Dep. of Food Technology and Science, Univ. of Tennessee, Knoxville.

295. Watanabe, Ken; Okamoto, Ssusmu. 1975. Yuba himaku no soshiki to sono keisei ni tsuite [The texture yuba film and its formation process from soybean proteins]. *Nippon Shokuhin Kogyo Gakkaishi (J. of Food Science and Technology)* 22(7):325-30. [9 ref. Jap]*

• **Summary:** Early scientific study on yuba products. Address: Faculty of Agriculture, Tokyo Noko Univ., Fuchushi, Tokyo.

296. Tovar Galvez, Luis Raul. 1975. Productos derivados del frijol soya tecnologias tradicionales en el Lejano Oriente [Traditional technology soy products in the Far East]. In: American Soybean Assoc., ed. 1975. *Memorias: Primera Conferencia Latinoamericana Sobre la Proteina de Soya*. Mexico City. 232 p. See p. 185-93. [14 ref. Spa]

• **Summary:** Descriptions of and flow sheets for the production of the following basic soyfoods are given: Miso, shoyu (*salsa de soya*), natto, tempeh, sufu (fermented tofu),

and soy yogurt. A table shows the nutritional composition of each of these foods as well as yuba and kori-tôfu (dried-frozen tofu).

Note 1. This is the earliest Spanish-language document seen (Sept. 2011) that mentions tempeh, which it calls “tempeh.”

Note 2. This is the earliest Spanish-language document seen (Feb. 2004) that uses the term “kori-tôfu” to refer to dried-frozen tofu. Address: Facultad de Quimica, UNAM, Mexico.

297. Autumn Press, Inc. 1975. Imagine... (Ad for The Book of Tofu by Shurtleff and Aoyagi). *Macrobiotic (The) (Chico, California)* No. 111. p. 61. Dec. [1 ref]

• **Summary:** “Imagine... How strange it would seem if in the world’s greatest wheat-producing country most of the people had never tasted bread. Yet no less unusual is the present situation in America, the world’s greatest producer of soybeans, where the majority of people have not yet tasted, seen or even heard of tofu.”

The Book of Tofu is 8½ x 11. 336 pages and has over 300 illustrations, \$6.95.

“A family of foods developed over thousands of years in China and Japan, tofu is East Asia’s way of using soy protein to complement a diet low on the food chain. Now available commercially across America in over 10 different forms, tofu can also be made at home—for pennies! Quick-and-easy to use in almost every conceivable type of Western-style preparation ranging from dips to desserts, these time-tested natural foods open new vistas of creative, healthful menu-planning—while offering a revolutionary approach to meeting the world’s critical food requirements.

“*The Book of Tofu* contains: Over 500 recipes culled from East and West. Easy-to-follow instructions for making 7 varieties of tofu (plus soymilk, yuba and tempeh) at home and on a community scale. An illustrated description of the art of making tofu in a traditional Japanese shop. The most detailed glossary of Japanese foods ever compiled in English. And much, much more.”

Note: This is the earliest advertisement seen that mentions tofu. Address: P.O. Box 469, Soquel, California 95073.

298. Shurtleff, William; Aoyagi, Akiko. 1975. The book of tofu: Food for mankind. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]

• **Summary:** This pioneering work started the “tofu revolution” in America. Contents: Preface. Acknowledgements. Part I. Tofu: Food for mankind. 1. Protein East and West. 2. Tofu as a food: Introduction, rich in high quality protein (NPU, biological value, protein score, amino acid content), high protein complementarity (tofu contains an abundance of lysine, an essential amino

THE BOOK OF TOFU

FOOD FOR MANKIND



500 RECIPES

WILLIAM SHURTLEFF & AKIKO AOYAGI

acid that is deficient in many cereal grains; increase usable protein by combining tofu with wheat, rice, corn, etc.), easy to digest, an ideal diet food, low in saturated fats and free of cholesterol, rich in vitamins and minerals, a health-giving natural food, backbone of the meatless / vegetarian diet, free of chemical toxins, low in cost, easily made at home, quick & easy to use, versatile.

3. Getting started: Introduction, buying and storing tofu, basic ingredients (whole-wheat flour, miso {rice-, barley-, and soybean miso, special Japanese miso, Chinese chiang}, oil, brown rice, salt, shoyu {natural shoyu, shoyu, Chinese soy sauce, synthetic or chemical soy sauce}, sugar, vinegar, monosodium glutamate {MSG}), Japanese kitchen tools (each illustrated), preparatory techniques (salt rubbing, rinsing and pressing leeks and onions, soaking burdock root, reconstituting dried sea vegetables {dried hijiki, wakame, agar}, wheat gluten and kampyo [kanpyo], parboiling, cutting tofu and vegetables, using sesame seeds, toasting nori, preparing a steamer), basic recipes (soup stocks and broths {dashi}, basic shoyu dipping sauces {*tsuke-jiru*}, miso toppings {sweet simmered miso / *nerimiso*, miso sauté / *abura miso*, special miso toppings and dipping sauces, finger lickin' miso, and regular miso}, miso salad dressings, nut and seed butter toppings, spreads and dressings, basic sauces, rice, noodles and other basic preparations).

Our favorite tofu recipes (lists about 80 recipe names for each of the different types of tofu, plus soymilk, yuba, whole soybeans, gô, okara, and curds; very favorites that are also quick and easy to prepare are preceded by an asterisk).

Part II. Cooking with tofu: Recipes from East and West (500 recipes). 4. Soybeans: History of soybeans and "soybean foods," cooking with whole dry soybeans, roasted soybeans (*iri-mame*), fresh green soybeans (*edamame*, incl. a recipe for "Sweet emerald bean paste {*Jinda*})," kinako (roasted full-fat soy flour, incl. Japanese health food treats such as *kinako amé*, *gokabo*, *kokusen*, *kankanbo*, and *abekawa mochi*), soybean sprouts (*daizu no moyashi*), natto ("sticky fermented whole soybeans," with "gossamer threads"), tempeh (fermented soybean cakes), Hamanatto and Daitokuji natto (raisin-like natto), modern western soybean foods (natural soy flour [full-fat], soy granules, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun protein fibers, textured vegetable protein {TVP}, soy oil products). 5. Gô (a thick white puree of well-soaked uncooked soybeans). 6. Okara or Uohana. 7. Curds and whey. 8. Tofu (includes history, and preparatory techniques: Parboiling, draining, pressing {towel and fridge method, slanting press method, sliced tofu method}, squeezing, scrambling, reshaping, crumbling, grinding, homemade tofu (basic, from powdered soymilk, fermentation method related to soymilk yogurt), tofu quick and easy {incl. Chilled tofu-Hiya-yakko}, tofu dressings, spreads, dips and hors d'oeuvre {incl. Creamy tofu dressings and dips, Tofu mayonnaise dressing, Tofu tartare sauce, Tofu cream cheese,

Tofu sour cream, Tofu cottage cheese, Tofu guacamole}, tofu in salads {Western style and Japanese style salads incl. Shirae}, tofu with sandwiches and toast, tofu in soups {Western style and Japanese style soups, incl. miso soup}, tofu in sauces, tofu in breakfast egg dishes, tofu baked, tofu sautéed, stir-fried or topped with sauces {incl. Mabo-dofu [Ma Po doufu]}, deep-fried tofu, tofu with grains, tofu broiled {incl. Tofu dengaku}, tofu simmered in one-pot cookery and seasoned broths, tofu steamed, tofu desserts {incl. Tofu whipped cream or yogurt, Banana tofu milkshake, Tofu icing, Tofu ice cream, Tofu cheesecake, Tofu-peanut butter cookies}).

9. Deep-fried tofu: Thick agé or nama-agé (incl. *atsu-agé* meaning "thick deep-fried tofu," "three-cornered agé" {*sankaku-agé*} in Kyoto, agé cubes {*kaku-agé*}, "five-color agé" {*gomoku-agé*}), ganmo or ganmodoki (incl. *hiryozu / hiroso*, "Flying Dragon's Heads"), agé or aburagé (incl. *kiji*, "agé pouches," "crisp agé," *kanso aburagé*, "agé puffs," "fried soybean cakes," "hollow agé cubes," "Smoked tofu," p. 189-91, 197).

Note 1. This is the earliest English-language document seen (May 2012) that contains the following terms related to deep-fried tofu (p. 180-90): "Thick agé," *nama-agé*, *Hiryozu*, "Dragon," "Flying Dragon's Heads," "treasure balls," "Ganmo treasure balls." "fresh or raw deep-fried tofu," "three-cornered agé," *sankaku-agé*, "agé cubes," *kaku-agé*, *kiji*. "agé pouches," "crisp agé," *kanso aburagé*, "agé puffs," "fried soybean cakes," or "hollow agé cubes."

10. Soymilk. 11. Kinugoshi ("Kinu means 'silk'; *kosu* means 'to strain'; well named, kinugoshi tofu has a texture so smooth that it seems to have been strained through silk." It is made from concentrated soymilk). 12. Grilled tofu (incl. *sukiyaki*). 13. Frozen and dried-frozen tofu. 14. Yuba (incl. many meat alternatives such as Yuba mock broiled eels, Buddha's chicken, Buddha's ham, sausage). 15. Tofu and yuba in China, Taiwan, and Korea (incl. Savory tofu {*wu-hsiang kan*}; see p. 258 for illustrations of many meat alternatives, incl. Buddha's fish, chicken, drumsticks, and duck, plus vegetarian liver and tripe, molded pig's head, and molded ham). One type of Korean soybean miso is called *kotsu jang* [sic, *kochu jang*]. When tofu is served with miso [Korean-style, *Tenjang*] as the dominant seasoning, and with rice, "it becomes the popular *Tenjang Chige Pekpem*" (p. 262). 16. Special tofu.

Note 2. This is the earliest (and only) English-language document seen (March 2009) that uses the word "Tenjang" to refer to Korean-style soybean jang (miso).

Part III-Japanese farmhouse tofu: Making tofu for more and more people. 17. The quest. 18. Making community tofu. 19. The traditional craftsman. 20. Making tofu in the traditional way.

Appendices: A. Tofu restaurants in Japan; many are vegetarian: In Tokyo: Sasa-no-yuki / Sasanoyuki, Goemon, Hisago, Sanko-in, Shinoda-zushi, Dengaku (south of Tokyo

in Kamakura). In Kyoto: Nakamura-ro, Okutan, Takocho, Izusen, Junsei, Nishiki, Hakuun-an, Rengetsu, Sagano, Sorin-an. Tea ceremony cuisine (*Kaiseki ryori*), Zen temple cookery or Buddhist vegetarian cookery (*Shojin ryori*), Tea ceremony cookery from China (*Fucha ryori*), Wild gathered cookery (*Sansai ryori*). A directory of these and others, with addresses and phone numbers, is given (p. 312).

B. Tofu shops in the West (Directory of 43 shops in the USA, 3 in Europe, and 3-7 in Latin America {Mexico City, Rio de Janeiro and Sao Paulo, Brazil}). C. People and institutions connected with tofu. D. Table of equivalents. Bibliography. Glossary. Index. About the authors (autobiographical sketches; a photo shows Shurtleff and Aoyagi, and gives their address as New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerima-ku, Tokyo, Japan 177). Sending tofu in the four directions.

pudding recipes include: Rice pudding with gô and apple (p. 76, incl. 2 cups soymilk). Tofu chawan-mushi (p. 147; Steamed egg-vegetable custard with tofu). Tofu fruit whips (p. 148). Tofu rice pudding (p. 150, incl. 1 cup soymilk). Tofu custard pudding (p. 152). Soymilk custard pudding (p. 208). Brown rice pudding (p. 208, with 2 cups soymilk). Soymilk chawan-mushi (p. 209). Chawan-mushi with yuba (p. 249).

Dessert recipes include: Tofu whipped cream or yogurt (p. 148; resembles a pudding or parfait). Tofu ice cream (p. 149, with chilled tofu, honey, vanilla extract and salt). Banana-tofu milkshake (p. 149). Tofu cream cheese dessert balls (p. 149). Tofu icing (for cake, p. 149). Tofu cheesecake (p. 150). Tofu-pineapple sherbet (p. 151). Also: Soymilk yogurt (cultured, p. 205). Healthy banana milkshake (p. 206). On p. 160 is a recipe for “Mock tuna salad with deep fried tofu.”

Note 3. This is the earliest English-language document seen (March 2007) that uses the term “Tofu ice cream” to refer to soy ice cream or that contains a recipe for “Tofu ice cream.”

Note 4. This is the earliest English-language document seen (March 2000) that uses the term “Tofu Cheesecake” and the first to give a recipe for a tofu cheesecake.

Note 5. This is the earliest English-language document seen (May 2000) that uses the term “Tofu Sour Cream” (p. 109) or that contains a recipe for “Tofu Sour Cream.”

Note 6. This is the earliest English-language document seen (Dec. 2003) that uses the term “tofu milkshake” or that gives a recipe for a shake made with tofu.

Note 7. This is the earliest English-language document seen (Jan. 2012) that uses the term “sticky fermented” to refer to natto.

Note 8. This is the 2nd earliest English-language document seen (Nov. 2011) that uses the term “dried-frozen tofu.”

Note 9. This is the earliest English-language document seen (March 2004) that describes preparatory techniques for

tofu (p. 96-98).

Note 10. This is the earliest English-language document seen (March 2004) that contains the term “smoked tofu.”

Note 11. This is also the earliest English-language document seen (March 2004) that uses the term “kinugoshi tofu” to refer to silken tofu.

Note 12. As of March 2007, the various English-language editions of this book have sold more than 616,000 copies.

Note 13. This is the earliest English-language document seen (June 2011) that uses the term “tofu lees” to refer to okara (see p. 22, 77).

Note 14. This is the earliest English-language document seen (Aug. 2011) that contains the term “Modern Western soybean foods” (see p. 69), a term that Shurtleff would soon (by 1983) replace by the more accurate “Modern soy protein products.”

Note 15. This is the earliest published English-language document seen (Jan. 2012) that contains the term “creamy tofu dressings” (or “dressing”).

Note 16. This is the earliest English-language document seen (Sept. 2012) that contains the term “Soymilk yogurt.”

Note 17. This is the earliest document seen (Oct. 2012) that contains an adequate or detailed description of how to make yuba at home. Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

299. Shurtleff, William; Aoyagi, Akiko. 1975. Yuba [in Japan] (Document part). In: W. Shurtleff and A. Aoyagi. 1975. *The Book of Tofu*. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. See p. 238-49.

• **Summary:** On the front cover of *The Book of Tofu* is a color illustration of Yuba Han, a traditional yuba shop in Kyoto, by Akiko Aoyagi. The tofu forming boxes are not in the actual yuba shop.

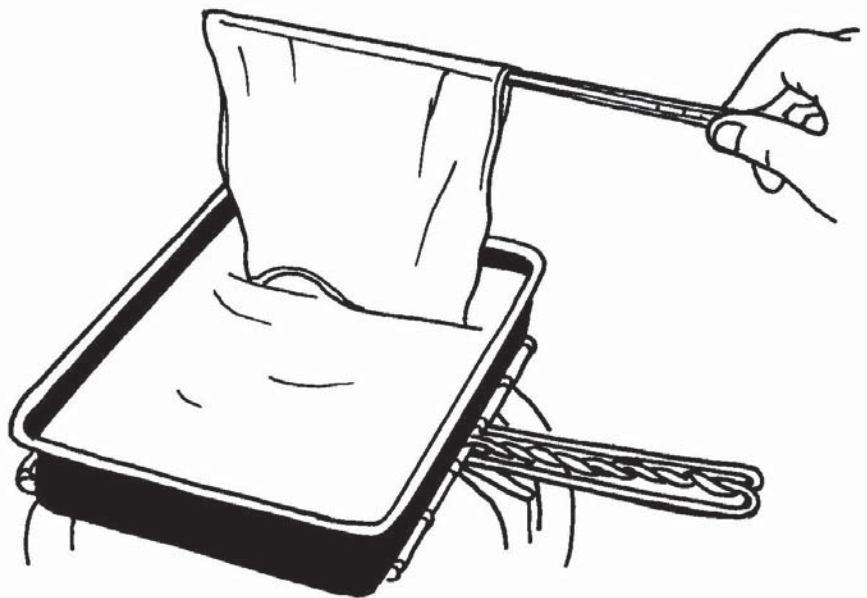
Contents: Introduction (What is yuba, how it is made in commercial shops, history, yuba shops in Japan). Types of yuba in Japan: Fresh yuba (*nama yuba*), half-dried yuba (*nama-gawaki* or *han-gawaki*), dried yuba (*kanso-* or *hoshi-yuba*). The varieties of yuba in Japan (with illustrations): Fresh yuba sheets (*nama-yuba*), flat yuba sheets (*hira-* or *taira-yuba*), fresh yuba rolls (*maki-yuba*), long yuba roll (*komaki*), small yuba rolls (*kiri-komaki*), tied yuba (*musubi-yuba*), large yuba spirals (*omaki-*, *futomaki-*, or *uzumaki-yuba*), ginkgo-leaf yuba, *Oharagi-yuba* (slightly flattened roll tied with a thin piece of kombu), sweet yuba (*amayuba* or *ama-yuba*), fresh yuba trimmings (*kirehashi*), yuba flakes (*kuzu-yuba* and *mimi*), trough-shaped yuba (*toyuba* or *to-yuba*). An illustration (line drawing) accompanies each variety.

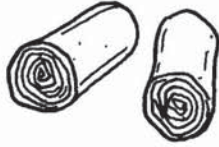
The chapter begins: “If you have ever simmered a pot of milk over very low heat or set a bowl of hot milk aside to cool, you have no doubt noticed the thin, delicate film that



Fig. 96. Steaming table in a yuba shop

Fig. 97. Lifting yuba away from soymilk





Fresh Yuba Rolls (*Maki-yuba*): A “long roll of fresh yuba” is about 16 inches long and 1 inch in diameter. It is made by folding a piece of fresh or sweet yuba lengthwise into halves, laying it lengthwise on a second sheet together with fresh yuba trimmings, and rolling the second sheet up lengthwise. “Small rolls of fresh yuba” are prepared by cutting this long roll into 1½-inch lengths.



Long Yuba Roll (*Komaki*): About 1 inch in diameter and 15 inches long, *komaki* are prepared by rolling fresh yuba trimmings in several fresh yuba sheets. After partial drying, the roll is wrapped in still another sheet of fresh yuba, dried again, and then trimmed at both ends.

Small Yuba Rolls (*Kiri-komaki*): Prepared by cutting a long yuba roll into 1½- to 2-inch lengths, these delicate rolls are used in thin soups, one-pot cookery, or with sautéed vegetables.



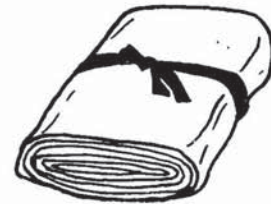
Tied Yuba (*Musubi-yuba*): Prepared from a piece of regular or yellow fresh yuba about ½ inch wide and 5 inches long, *musubi-yuba* is tied into a simple loop and used in thin soups.



Large Yuba Spirals (*Omaki*, *Futomaki*, or *Uzumaki-yuba*): To make yuba spirals, about 40 sheets of half-dried yuba are rolled up to form a long cylinder 1½ to 2 inches in diameter and 1½ feet long. This is wrapped in a single sheet of fresh yuba, dried until crisp, then cut crosswise into discs about ½-to 1-inch thick. They are used widely in thin soups, one-pot cookery, and seasoned broths.



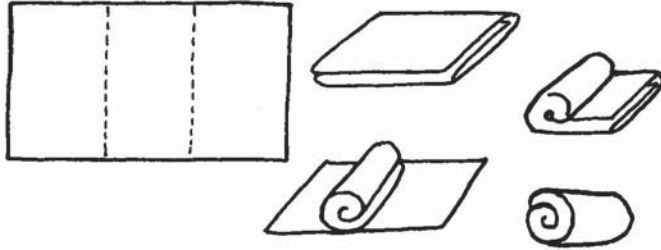
Ginkgo-leaf Yuba: Prepared by cutting fresh yellow or regular fresh yuba sheets with a cookie cutter, these dried pieces resemble 3-inch-diameter ginkgo leaves and are used as a garnish in thin soups and on top of sushi.



Oharagi Yuba: This slightly-flattened yuba roll, tied with a thin piece of *kombu*, is about 2½ inches long, 2 inches wide, and ¾ inch thick. It is prepared by loosely rolling one sheet of half-dried yuba inside a sheet of fresh yuba, tying the oval-shaped roll with 5 strips of *kombu*, then cutting the roll crosswise into fifths. (This variety derives its name from the large bundles of firewood tied around the center with a length of rope which the women of Ohara village near Kyoto are famous for carrying on their heads.)



Sweet Yuba (*Amayuba*): This is the last sheet of yuba lifted (and often partially scraped) from the bottom of the steaming tray. It has a sweet rich flavor and slightly reddish color. Thicker and less delicate than most yuba, its edges are often ragged and uneven. Eaten fresh and warm at the yuba shop, it is ambrosial. It is usually dried and sold in large pieces of various sizes in sealed cellophane bags. The least expensive of all types of yuba, sweet yuba is, in our opinion, the most delicious, especially when deep-fried, lightly salted, and served like potato chips. Dried pieces may be added to soups, egg dishes, or sautéed vegetable preparations.



yuba cylinder from one end with a (green) bamboo dengaku skewer (or two foodpicks) and deep-fry for about 1 minute until golden brown. Spread tops of rolls with the miso and top with a sprinkling of sesame seeds. Serve while crisp and hot.

The freshly deep-fried rolls –called *Agé-maki Yuba*– may also be served as is, sprinkled with a little shoyu. Simmered in Sweetened Shoyu Broth (p. 40), they make a tasty addition to soups and *nabe* dishes.

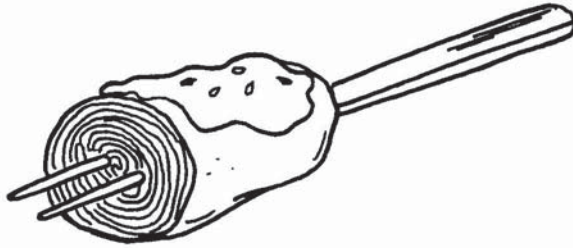
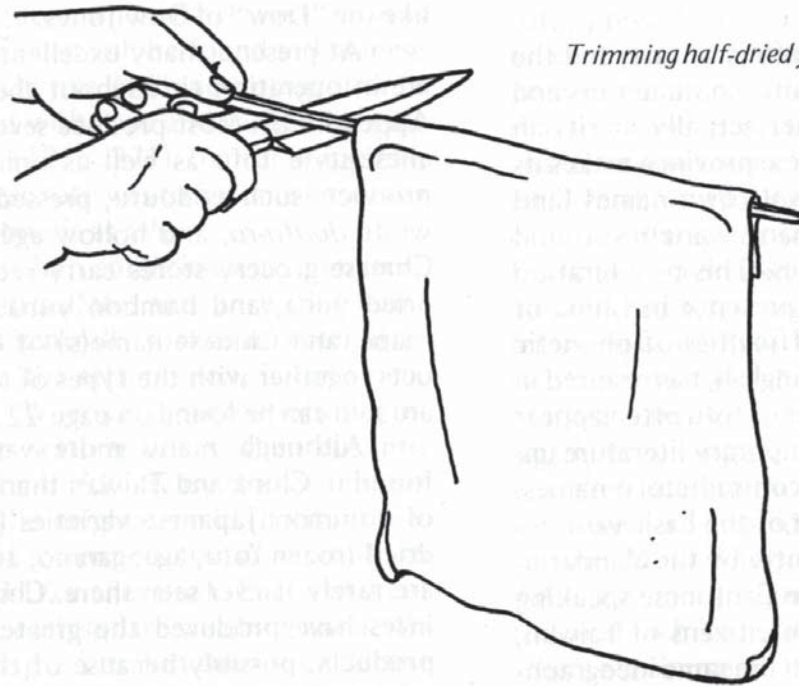


Fig. 100. Deep-fried Yuba Dengaku



Trimming half-dried yuba from a skewer

soon forms on the milk's surface. The longer it is allowed to set, the firmer and thicker it becomes. And if you have ever tried lifting this film off and tasting it, you may well have found it to be soft, warm, and delicious. In the same way, if fairly thick soymilk is gently heated, a thin film soon covers its surface. In Japan this film is called yuba, and since ancient times it has been considered a true delicacy. It is easily prepared at home, and since it is best when fresh and warm, yuba made in your own kitchen and served as an hors d'oeuvre or as part of a meal will have a tenderness and fragrant richness that can far surpass that of the yuba ordered from even the finest traditional shops."

Reconstituting dried yuba. Homemade fresh yuba—How to make fresh yuba at home: Variations—half-formed yuba (*tsumami-agé*), large sheets of fresh yuba, fresh yuba rolls (*maki-yuba*), dried yuba.

Yuba recipes: Yuba hors d'oeuvre (15 recipes, mostly Japanese-style). Chinese-style deep-fried yuba hors d'oeuvre: Yuba chicken (*ssu-chi* or *suji*), deep-fried Buddha's yuba, yuba nori roll, yuba drumstick (*Sso-tsai*), glutinous rice roll. Yuba in salads, soups, and sauces (2 recipes). Yuba in sandwiches, egg dishes, and oven cookery (one recipe). Yuba sautéed and deep-fried (5 recipes, including *Tamago yuba with ankake sauce*, *Kenchin maki*, *shinoda maki*, and *yuba harumaki*). Yuba with noodles or with rice and sushi. Yuba in one-pot cookery and seasoned broths (Incl. *Happosai*). Yuba steamed (Incl. *Chawan-mushi*, *Yuba kenchin-maki*, and *Yuba shinjo*). Chinese-style steamed yuba (Yuba-filled steamed buns, Pressed yuba with peanut sauce).

"Sweet yuba (*Amayuba*): This is the last sheet of yuba lifted (and often partially scraped) from the bottom of the steaming tray. It has a sweet rich flavor and slightly reddish color. Thicker and less delicate than most yuba, its edges are often ragged and uneven. Eaten fresh and warm at the yuba shop, it is ambrosial. It is usually dried and sold in large pieces of various sizes in sealed cellophane bags. The least expensive of all types of yuba, sweet yuba is, in our opinion, the most delicious, especially when deep-fried, lightly salted, and served like potato chips. Dried pieces may be added to soups, egg dishes, or sautéed vegetable preparations" (p. 241).

Note 1. A full-page illustration (p. 258) shows many types of Chinese yuba mock meats (meat alternatives).

Note 2. This is the earliest English-language document seen (Oct. 2012) that gives the Japanese names for many popular types and varieties of yuba, and suggests a useful English equivalent for each, for example: Fresh yuba (*nama yuba*), sweet yuba (*amayuba* or *ama-yuba*), etc. An illustration shows each of the many types and varieties.

Note 3. This is the earliest English-language document seen (Oct. 2012) that gives a variety of authentic Asian yuba recipes, including both Japanese and Chinese. Many of these recipes are illustrated.

The word "yuba" appears on 59 pages of this book;

pages 4, 8, 12, 21-25, 52, 70, 73, 117, 118, 120, 125, 128, 136, 147, 152, 177, 190, 203-205, 209, 236-250, 252, 257-59, 261, 262, 310-12, 316, 330-34, rear cover. Address: Lafayette, California.

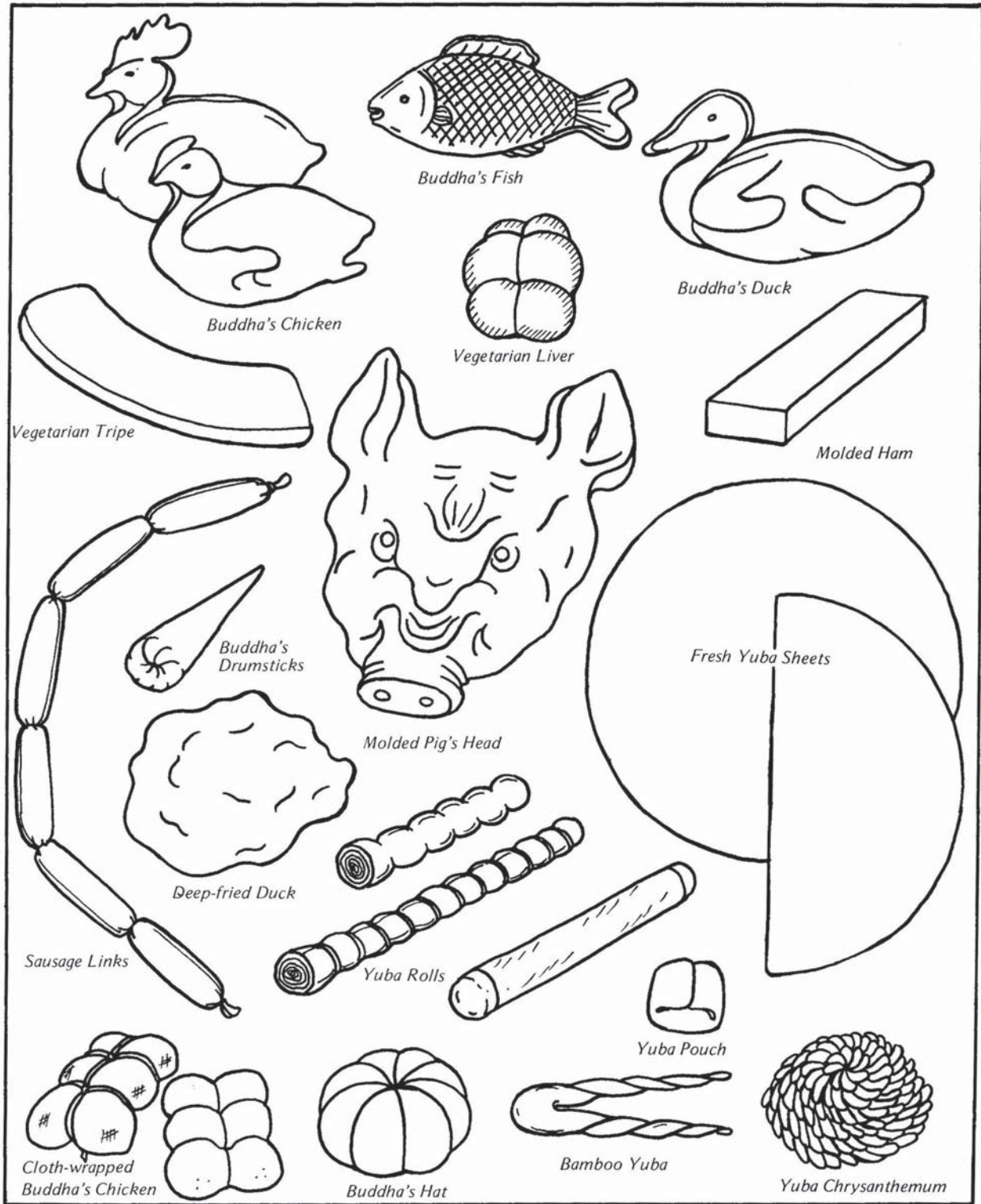
300. Shurtleff, William; Aoyagi, Akiko. 1975. Tofu and yuba in China, Taiwan, and Korea (Document part). In: W. Shurtleff and A. Aoyagi. 1975. *The Book of Tofu*. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. See p. 250-64.

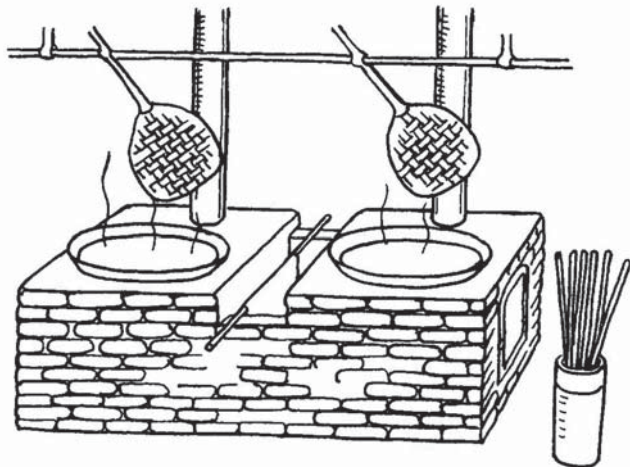
• **Summary:** Contents: Introduction. Three varieties of tofu. Doufu: Known as *tojo* or *tokua* in the Philippines, or as *tahu* in Indonesia. Pressed tofu (*doufu-kan*): Savory tofu (*wu-hsiang kan*), soy-sauce pressed tofu (*chiang-yu doufu-kan*), pressed tofu sheets (*pai-yeh*, incl. pressed tofu noodles or "beancurd shreds" {*doufu-ssu, kan-ssu*}, pressed tofu loops {*pai-yeh chieh*}, Buddha's Chicken {*su-chi*} or Buddha's Ham {*suhuo-t'ui*}, salted dry tofu {*doufu-kan*}). Chinese soft kinugoshi (*shui-doufu, sui-doufu, nen-doufu, nan-doufu, shin-kaou doufu*). Warm soymilk curds: Chinese smooth curds (*doufu-nao, dou-nao*; often served for breakfast by street vendors), curds-in-whey (*doufu-hua*). Deep-fried tofu (*yu-doufu, cha-doufu, doufu-kuo, kuo-lao doufu*). Frozen tofu (*tung-doufu, ping-doufu*).

Doufu-ru [fermented tofu]: white fermented tofu (*pai doufuru*, incl. 5 different types such as red pepper, sesame oil and red pepper, five-spice, etc.), red fermented tofu (*hung doufuru, nanru, nanyu*, made by adding Chinese red fermented rice [red rice koji] {*ang-tsao*} to the brining liquor to give it a deep red color, thick consistency, and distinctive flavor and aroma; soy sauce is generally used in place of rice wine; another variety is rose essence fermented tofu), stinky fermented tofu (*tsao-doufu, ch'ou doufu*, incl. green stinky fermented tofu), *chiang-doufu* (prepared by pickling firm cubes of tofu for several days in either Chinese-style miso {*chiang*} or soy sauce).

Soymilk (*doufu chiang, dou-chiang, dou-nai, dou-ru*): Widely enjoyed as a spicy hot breakfast soup (p. 204) or a warm, sweetened beverage (p. 207). Sometimes sold bottled by street vendors.

Yuba: Yuba is much more popular and much less expensive in China and Taiwan than it is in Japan. There are hundreds of yuba shops throughout Taiwan and probably thousands in China, and yuba plays an important role in the nutritional life of the people in home and restaurant cookery. Called bean curd "skin" or "sheets" in most Chinese cookbooks, yuba is known in Mandarin as *doufu-p'i* ("tofu skin") or *doufu-i* ("tofu robes"). Remarkable Chinese ingenuity and creativity in giving the semblance of meat. In the display case of attractive restaurants or marketplace yuba shops are perfect replicas of plucked hens, roosters, and ducks, light-brown fish (complete with fins, gills, eyes, and mouth), juicy hams, tripe, liver, rolled meats, red sausage links, deep-fried drumsticks, and a life-sized pig's head—all





made from yuba. Most of these imitation meat dishes are prepared by pressing fresh yuba into a hinged (wooden or aluminum) mold, clamping the mold closed, then steaming it until the yuba's shape is fixed. *Su-tsai* restaurants specialize in Buddhist vegetarian cookery. Names of prepared dishes: Buddha's Chicken (*suchi*), Buddha's Fish (*suyu*, *sushi*), Buddha's Duck (*suya*), Vegetarian Tripe (*taoto*) or Liver (*sukan*); Molded Pig's Head (*tutao*), Molded Ham (*suhuo*), Sausage Links (*enchan*), Buddha's Drumsticks (*sutsai tsui*), Deep-fried Duck (*suya*). A full-page illustration (p. 258) shows these products. Fresh yuba. Dried yuba (*kan doufu-p'i*, incl. sweet yuba and Bamboo yuba {*fuchu* [dried yuba sticks]}). Tofu and yuba in Chinese cookery: Mandarin cookery, congee (rice porridge), "red broiled" sauces (*hong-sao*), meatless days, vegetarian restaurants.

The Chinese tofu shop: Description of the process for making tofu. Tofu in Korea. Recipes: Fermented tofu dressings, spreads, dips, and hors d'oeuvre. Fermented tofu in sauces, egg dishes, and with grains.

Illustrations show: (102) A woman cutting doufu at the marketplace. (103) Making pressed tofu using a hand-turned screw press. (104) Pressed tofu noodles. Buddha's chicken. (105) Street vendor selling soymilk curds. (106) Pressing tofu in forming boxes using stone weights. (107) Deep-frying agé triangles in a wok. (108) Threaded thick-agé cubes. (109) Net-like thick agé. (110) A soymilk vendor carrying bottled soymilk using a shoulder pole. (111) Yuba mock meats. (112) Yuba steaming pots. (113) Steam-heated drum can cooker in Chinese tofu shop. Doufu-ru [fermented tofu] cubes on plate, in bottle, in can. Woman selling tofu, seated by the street side.

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word "doufu" to refer to Chinese-style tofu.

Note 2. This is the earliest English-language document seen (Oct. 2012) that uses the word *fuchu* or the word *suohuo* or the term *suohuo-t'ui* or the term "tofu robes" or the term "tofu skin" to refer to yuba. Address: Lafayette, California.

301. Shurtleff, William; Aoyagi, Akiko. 1975. *The book of tofu: Food for mankind* (Illustrations—line drawings). Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]

• **Summary:** Continued: Illustrations (line drawings, both numbered and unnumbered) show: A hearth in a traditional Japanese farmhouse with tofu dengaku roasting around a bed of coals in a sunken open-hearth fireplace. An old Japanese plum tree blossoming in winter. Three pieces of skewered tofu dengaku with a sansho leaf atop each in a special serving box. A sprig of sansho with berries. Stylized top of a soybean plant in a circle. Fig. (4) Tofu products available in the West (tofu, dofu, kinugoshi, thick agé triangles, cubes, and cake, agé and agé puffs, hollow agé cubes, soymilk, tofu pudding, doufu-ru {white and red}, ganmo {patties, small balls, and treasure balls}, grilled tofu, dried-frozen tofu, instant powdered tofu, okara, dried yuba, soymilk curds, pressed tofu, savory tofu). A wooden cutting board and Japanese broad-bladed vegetable knife (*nagiri-bôcho*) with vegetables and tofu on a woven bamboo tray.

Note: This is the earliest English-language document seen (May 2012) that contains the term "treasure balls." It refers to Chinese-style tofu mixed with various finely-chopped vegetables, rolled into balls, and deep-fried tofu. (8) A wooden keg of red miso and a plastic bag of barley miso. (9) Shoyu in a metal can, wooden keg, glass bottle, and table-top dispenser. Traditional Japanese kitchen tools: *Miso-koshi* (woven bamboo strainer used in making miso soup). cutting board, Japanese vegetable knife, wooden spatula, bamboo rice paddle (*shamoji*) and spoon, woven bamboo colander or tray (*zaru*), suribachi, Japanese grater (*oroshi-gané*), sudaré (bamboo mat), pressing sack for tofu or soymilk, serrated tofu-slicing knife, tawashi scrub-brush (made of natural palm fiber), wok with draining rack and wooden lid, stir-frying ladle and spatula, long cooking-chopsticks, mesh skimmer, deep-frying thermometer, Chinese bamboo steamer (*seiro*), charcoal brazier (*konro*, *shichirin*), broiling screen. Covered pot steamer. Small lidded pottery pot. More kitchen tools (p. 50-51). (10) A soybean measuring box (*isshô-bako*). (11) The soybean plant. Two views of a soybean seed with seed coat, hilum, and hypocotyl labeled. A bag full of soybeans. Roasted soybeans in a woven bamboo tray (*zaru*). Edamamé in the pods. Three shapes of kinako treats. Soybean sprouts. Natto on a bamboo mat (*sudare*). Natto wrapped in rice straw as it ferments. A hand holding chopsticks that lift natto up from a bowl of natto—connected by gossamer threads. Tempeh (round and square pieces). Wrapping a small packet of inoculated soybeans to make tempeh. (15) Two Japanese women in traditional clothing using hand-turned grinding stones (quern) to grind soaked soybeans when making tofu. (16) Push-pull grinding stones. (17) Motor-driven grinding stones. (18) Water-powered millstones. (19) Wind-powered

millstones. (20) Unohana. (21) A tofu maker sitting on a traditional lever press that presses soymilk from the okara in a pressing sack on a rack. A heavy iron skillet. (22) Folding okara omelet pouches. Okara doughnuts. (23) A bamboo colander. (24) A tofu maker weighting a colander with a brick so that whey will collect in it. (25) Ladling whey from curds; it foams! (27) A horse drinking whey from a wooden vat. Soymilk curds in a bamboo mat. (28) Ladling curds for Awayuki. (29) Fresh tofu in a plastic tub. (30) A tofu maker placing a weight on pressing lids as tofu is pressed in settling boxes (forming boxes). Transferring tofu-filled settling box to sink. Cutting a block of tofu into cakes under water. Eggplant halves in a yin-yang dance. Preparatory techniques used with tofu (slanting press, sliced tofu, squeezing, scrambling, reshaping, crumbling). (32) Utensils for making tofu at home. (33) Three designs for a homemade settling container. (34) Preparing homemade tofu (a-1). (35) Removing tofu from a farmhouse-style settling container (forming box). (36) Chilled tofu. Iceberg chilled tofu. A hot, moist, white towelette (*o-shibori*) is used to wipe the face and hands before (or occasionally after) a meal. Tofu salads in three Japanese pottery dishes. Japanese soups in three types of containers. (37) Chrysanthemum tofu. (38) Tofu poached egg. Tofu-stuffed green peppers. A wok. (39) Filling a wok with oil. (40) testing oil temperature in a wok. (41) Deep-frying tofu tempura—and (42) Serving it in a shallow bamboo basket. (43) Making *Kaki-agé*. (44) *Dengaku Hoshi* (from *Tofu Hyaku Chin*). (45) Skewered Tofu *dengaku*. Preparing Tofu *dengaku* in old Japan (from Hokusai's sketchbooks). (46) A variety of skewers. (47) Chinese firepots. (48) A Simmering Tofu wooden serving container heated by coals from within. (49) Miso oden. (50) Tofu wrapped in rice straw. (51) Nanzenji wrapped tofu. (52) *Gisei-dofu*. (53) Serving freshly deep-fried *agé*. (54) The deep-frying area of a traditional tofu shop. (55) Deep-frying tools. (56) Wooden bamboo tray with raised sides. Chinese cleaver. (57) *Nori*-wrapped sushi with *agé* (making and serving; six drawings). Eating noodles from old Japan (from Hokusai's sketchbook). (58) Preparing homemade noodles. (59) The Oden man on a winter's eve. A pottery bowl of Oden. Kombu rolls. (60) Making konnyaku twists. (61) *Nishime* in a multi-layered lacquerware box. (61) Pressing tofu for thick *agé* in a tofu shop. (62) Deep-frying tofu for thick *agé*. (63) A tofu maker with deep-fried thick *agé* triangles on screen trays.

Note 1. This is the earliest English-language document seen (May 2012) that contains the terms “deep-fried thick *agé* triangles” (p. 181) or “hollow *agé* cubes” (p. 23).

(64) Stuffing thick *agé*. (65) Thick *agé* stuffed with onions. (66) Pressing tofu for *ganmo*. (67) Adding seeds and vegetables. (68) Deep-frying *ganmo*. (69) A farmhouse open-hearth fireplace with nabe kettle. (70) Preparing homemade *ganmo*. *Ganmo* balls in a draining tray. *Ganmo* cheeseburger. (71) Cutting tofu to make *agé* slices (*kiji*). (72) Deep frying

agé. (73) Opening *agé* into pouches. *Agé* treasure pouches.

Note: This is the earliest English-language document seen (May 2012) that contains the term “treasure pouches” or the term “*Agé* treasure pouches.” (74) *Agé* pouches sealed with foodpicks. Inari shrine with Shinto torii. (75) *Kampyo*-tied pouches [*kanpyo*]. (76) Making rolled *agé* hors d'oeuvre. (77) Tofu maker ladling *gô* (fresh soy puree) into a cauldron. (78) Stirring down the *gô*. Pressing soymilk from okara with a hand-turned screw press. (79) Serving fresh soymilk in a tofu shop. Six Japanese commercial soymilk products. Little girl at The Farm (Summertown, Tennessee) seated on a small chair drinking a cup of soymilk. Chinese breakfast soymilk soup with deep-fried crullers (*Siento-chiang* with *yu-chiao tsao pi*). (80) Takigawa-dofu. (81) Tofu maker pouring the soymilk for kinugoshi tofu. (82) Adding solidifier. (83) Trimming kinugoshi from sides of box. (84) Modern lactone kinugoshi (with GDL). (85) Modern kinugoshi factory. (86) Sasa-no-Yuki's *Gisei-dofu* container. (87) Kinugoshi with *ankake* sauce. The entrance way to a traditional Japanese restaurant featuring tofu. Traditional metal skewer for making grilled tofu. (88) Traditional tofu maker grilling tofu over a charcoal brazier (*hibachi*). Grilling tofu in a traditional open hearth. (89) An early method of elaborate grilling. Pieces of tofu on different types of skewers. Farmhouse *sukiyaki* with grilled tofu. (90) Tying frozen tofu with rice straw. (91) Drying farmhouse frozen tofu. (92) Pressing frozen tofu at home. (93) Deep-fried frozen tofu with cheese. (94) Making deep-fried frozen tofu sandwiches (*Hakata-agé*). (95) Frozen tofu wrapped in kombu. (96) Steaming table in a yuba shop. Ten different types / shapes of yuba. (97) Lifting yuba away from soymilk. (98) Yuba sashimi. (99) Yuba envelopes. (100) Deep-fried yuba *dengaku*. (101) Folding yuba into bundles. Trimming half-dried yuba from a skewer. (102-113) Tofu and yuba in Taiwan, China, and Korea (see separate record). Sesame tofu in pottery bowl. (114) Traditional farmhouse tofu, tied into a package with rice straw rope. (115) Shirakawa-go farmhouses with water-powered rice-dehusker in foreground. (116) Making seawater tofu at Suwanose. Mortar and pestle for pounding mochi. Making community tofu: Western metal hand mill, hand-turned stone mill apparatus, faces of upper and lower stones, colander and cloth, two shapes of cooking pots, Japanese farmhouse earthen cooking stove, cooking pot set on cut-off oil drum, ladle, two wooden paddles, pressing rack, pressing okara, lever press, pressing sack, wooden settling [forming] container with cloths. (117) Making *nigari* with salt in bamboo colander, a traditional “salt boat” for refining salt of *nigari*. (119) Country farmhouse tofu (5 illust.). (121) Morning shopping at a tofu shop. (122) Diagram of a tofu-shop floor plan. (123) Modern pressure with hydraulic press. (124) Modern centrifuge with 3 soymilk barrels. Thirty-one unnumbered illustrations showing every step in making and selling tofu in a traditional Japanese shop (p. 299-306). (125) Cutting tofu for *Dengaku*

(from *Tofu Hyaku Chin*). (126) Ladies busy making dengaku (from *Tofu Hyaku Chin*). (127) Hearth at Nakamura-ro. (128) The garden at Okutan. Six types of Japanese sea vegetables: Hijiki, aonori, wakame, agar, nori, kombu. (129) Japanese vegetables (27 illustrations). Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

302. Shurtleff, William; Aoyagi, Akiko. 1975. *The book of tofu: Food for mankind (Recipes and food types with Japanese names)*. Hayama-shi, Kanagawa-ken, Japan: Autumn Press. 336 p. Illust. by Akiko Aoyagi. Index. Dec. 28 cm. Rev. ed. 1977 Autumn Press, Brookline, MA. [53 ref]
 • **Summary:** Teriyaki sauce (p. 48). Ankake sauce (p. 49). Sushi rice (Rice in vinegar dressing, p. 51). Gomashio (Sesame salt). Gari (Sweet vinegared gingerroot, p. 51). Budomame (Sweet soybeans, p. 62). Kombu mame, kuro mame, gomoku mame (p. 62). Iri-mame (Roasted soybeans, p. 63). Edamame (Fresh green soybeans, p. 63). Jinda (Sweet emerald bean paste [made with edamame], p. 64). Kinako (Roasted full-fat soy flour, p. 64). Abekawa mochi (with kinako, p. 65). Kinako amé or genkotsu amé (Kinako candy, p. 66). Daizu no moyashi (Soybean sprouts, p. 67). Natto (Sticky fermented whole soybeans, p. 67). Hamanatto and Daitokujinatto (also spelled Daitokuji-natto) (Raisin-like natto, p. 69). Gô (Fresh soy purée, p. 70+). Gôjiru (Thick miso soup with gô, p. 74). Bakudan agé (Deep-fried gô patties, p. 76). Okara or unohana (p. 77+).

Unohana-jiru (Chilled okara soup, p. 79). Unohana no iri-ni (Okara & vegetable sauté, p. 81). Unohana-iri (Unsweetened fried okara, p. 82). Unohana dango (fried okara patties, p. 82). Sushi okara chakin (Okara omelet pouches, p. 84). Oboro (curds, p. 87). Oboro-dofu (Warm soymilk curds, p. 90). Awayuki (homemade curd dumplings, p. 90). Karashi-dofu (Curd dumplings with mustard, p. 90). Gomoku-dofu (Five-color tofu, p. 105). Hiya-yakko (Chilled tofu, p. 105). Menoha-dofu, nameko-dofu (p. 106). Ryanbandoufu (Chinese-style chilled tofu, p. 107). Imokake-dofu (Chilled tofu with glutinous yam and egg, p. 107). Tofu no misozuke (Tofu pickled in miso, p. 110). Kanten-dofu (Jelled tofu, p. 114). Aemono and Shira-ae (“White salad,” p. 114+, 160). Arare no aemono (Hailstones salad, p. 115). Suimono (Clear soup, p. 119). Kikka-dofu (Clear soup with chrysanthemum tofu, p. 120). Kenchin-jiru (p. 120). Tamago-toji (Japanese-style tofu, eggs & onions). Nanjen-dofu or Iritsuke-dofu (Chinese-style egg tofu, p. 123). Kenchin-yaki (p. 126). Iridofu [Iri-dofu] (Crumbly scrambled tofu, p. 128). Mabo-dofu [Ma po doufu] (Chinese-style tofu with red pepper sauce, p. 128). Hao-yu doufu (Chinese style oyster sauce & tofu, p. 129). Fanchie-dofu (Chinese-style tofu & tomatoes, p. 129). Tofu no kara-agé (Crisp agé slices, p. 131). Unagi-dofu (Tofu mock eels, p. 132). Kaminari agé (Thunderbolt tofu, p. 132). Agédashi-dofu [Agedashi-dofu] (Deep-fried tofu in dipping sauce, p. 133). Tendon (Deep-

fried tofu with rice and broth, p. 133). Tofu furai (Breaded tofu cutlets, p. 134). Tempura (and batter and dipping sauce, p. 134). Zosui or Ojiya (Rice gruel, p. 138). Tofu dengaku (p. 139). Tofu teriyaki (p. 141). Yudofu or Tofu no mizutaki (Simmering tofu, p. 142). Nabeyaki-udon, Nabeyaki-soba, Udon-tsuki (p. 144). Yosenabe (p. 144). Miso oden (p. 145). Yukinabe (The snow pot, p. 148). Niyakko (p. 145). Tsuto-dofu or Komo-dofu (Simmered tofu wrapped in rice straw, p. 146). Tofu chawan-mushi (Steamed egg-vegetable custard, p. 147). Nanzen-ji no Tsusmi-dofu (Nanzen-ji wrapped tofu, p. 147). Yuzu-gama (Yuzu treasure pot, p. 147). Naruto-dofu (Tofu spiral in butterbur leaves, p. 147). Gisei-dofu (Tofu cheesecake-like dessert, p. 152). Datémake [Datemaki] (Tofu-egg roll, p. 153). Noppei-jiru (Noppei soup, p. 163). Kinpira (Agé with carrots and burdock root, p. 167). Yaki-soba (Fried buckwheat noodles with deep-fried tofu, p. 168). Chahan or yaki-meshi (sizzling rice with deep-fried tofu, p. 168). Soboro (p. 169). Norimaki-zushi (Nori-wrapped sushi with agé, p. 170). Kitsune domburi (Fox domburi, p. 172). Kitsune soba or udon (Fox noodles, p. 172). Yamakake soba (Buckwheat noodles with grated glutinous yam and agé, p. 172). Hiyashi-soba (Noodles & deep-fried tofu in chilled broth, p. 172). Nikomi udon (Ganmo simmered with homemade noodles and miso, p. 173). Kabayaki or Yaki-Shinoda (Agé mock broiled eels, p. 174). Oden (p. 175-78). Nishime (p. 178-79). Horoku-yaki (Thick agé stuffed with onions, p. 183). Hiryoza (Ganmo treasure balls, p. 188). Inari-zushi (Vinegared sushi rice in sweetened agé pouches, p. 194). Fuku-bukuro (Agé treasure pouches with crunchy vegetables, p. 195). Takara-zutsumi (Sacks of gold, p. 195). Shinoda-maki (Matchstick vegetables wrapped in agé pouches, p. 195). Kinchaku and takara-bukuro (Drawstring purses and treasure bags, p. 196).

Note: This is the earliest English-language document seen (May 2012) that contains the term “treasure bags.” It refers to a way of preparing deep-fried tofu pouches.

Hasami-age (Mashed potatoes deep-fried in agé pouches, p. 196). Shinoda-maki (Agé cabbage rolls, p. 197). Shinoda mushi (Steamed agé with tofu and vegetables). Soymilk chawan-mushi (p. 209). Yose-dofu (Jelled and molded soymilk dishes, p. 209). Takigawa-dofu (Swirling jelled soymilk, p. 210). Shikishi-dofu (Kinugoshi custard, p. 216). Kinugoshi dishes from Sasa-no-yuki (p. 217-19): Hiya-yakko, yuzumiso-dofu, gisei-dofu, ankake-dofu, kijoyu, chiri-meshi, kuya-dofu or kuya-mushi, iridofu. Yaki-dofu (p. 220). Sukiyaki (p. 224-25). Koya-dofu or kori-dofu (Dried-frozen tofu, p. 226+). Tamago-toji (Frozen tofu with eggs and onions, p. 231). Gyoza [Chinese jiaozi] (p. 232). Orandan (Deep-fried frozen tofu in lemon sauce, p. 234). Soboro (Grated frozen tofu rice topping, p. 234). Hakata-agé (Deep-fried frozen tofu sandwich, p. 235). Koya-dofu no kombu maki (Frozen tofu wrapped in kombu, p. 236). Sanshoku gohan (Three-color brown rice, p. 236). Fukuyose-ni (Frozen tofu simmered in sweetened broth, p. 236). Abekawa-dofu

(Frozen tofu rolled in sweetened kinako, p. 237). Yuba (p. 238-42). Nama-yuba (Fresh yuba). Nama-gawaki or han-gawaki yuba (Half-dried yuba). Kanso- or hoshi-yuba (Dried yuba). Hira- or taira-yuba (Flat yuba sheets). Maki-yuba (Fresh yuba rolls). Komaki (Long yuba rolls). Kiri-komaki (Small yuba rolls). Musubi-yuba (Tied yuba). Omaki-, futomaki- or Uzumaki-yuba (Large yuba spirals). Oharagi yuba (Slightly flattened yuba roll tied with a thin piece of kombu). Amayuba (Sweet yuba). Kirehashi (Fresh yuba trimmings). Kuzu-yuba or mimi (Yuba flakes). Toyuba (Trough-shaped yuba, p. 242). Kaori yuba (Sweet miso deep-fried in fresh yuba, p. 244). Yawata-maki (Yuba-burdock root roll, p. 245). Toji yuba (deep-fried yuba with ginkgo nuts and lily bulbs, p. 245). Yuba no kabayaki (Yuba mock broiled eels, p. 245). Maze-gohan or Gomoku-zushi (Five-color sushi rice with agé, p. 169). Suhuo-t'ui (Homemade Buddha's ham). Tamago-toji yuba (Raw eggs cooked over hot yuba, p. 247). Tamago yuba (Deep-fried yuba in ankake sauce, p. 248). Kenchin-maki (Large yuba rolls with tofu and vegetables). Yuba shinjo (Yuba steamed with eggs, p. 249). Address: c/o Aoyagi, 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan. Phone: (03) 925-4974.

303. Chen, Wen-liang; Wang, F.J.; Huang, F.M.; Wang, I.K.; Chu, S.H.; Wang, C.Y. 1975. Po mo chuang tan pai shih p'in, tou fu p'i, chih tsao fang fa chih yen chiu [A study on the process of protein-lipid film food manufacturing]. *Shih P'in Chia Kung (Food Processing)* No. 45. 16 p. [10 ref. Chi; eng]

• **Summary:** "An automatic continuous method for producing soybean protein-lipid film was developed successfully in a pilot plant scale experiment. Sodium alginate at the level of 0.6% by weight was added into soybean milk. After mixing thoroughly and deaeration, the mixture was extruded through a narrow slit into a flow channel of calcium chloride solution (5%), and coagulated to form a thin film immediately. This film was different in physical properties from the traditional product. Using this film some kinds of delicious Chinese foods, such as pan-fried protein-lipid film, egg rolls and vegetarian chicken meat could be prepared." Address: China.

304. Shurtleff, William. 1975. Famous and fine tofu restaurants in Japan. Higashi-Oizumi, Nerima-ku, Tokyo, Japan. Unpublished manuscript.

• **Summary:** Contains detailed descriptions (with address and recipe names based on visits) of Sasa-no-Yuki (Tokyo), Goemon (Tokyo), Hisago (Tokyo and Kamakura), Sanko-In (Tokyo), Shinoda-Zushi (Tokyo, Inari-Zushi), Tofuya (Tokyo), Otako (Tokyo, Oden), The Natural Food Center (Tokyo, Macrobiotic restaurant), Dengaku (Kamakura Dengaku Cuisine), Okutan and Junsei (Nanzenji, Kyoto, Simmering Tofu), Nakamura-Ro (Niken-jaya, Yasaka-Jinja, Kyoto, Kaiseki, chef Shigemitsu Tsuji), Rengetsu (Kyoto, Tofu cuisine), Izusen (Kyoto), Takacho (Kyoto, Oden),

Sorin-An (Kyoto, Yuba cuisine), Seizan Sodo (Arashiyama near Kyoto), Sagano (Arashiyama), Nishiki (Arashiyama), Ohara (Arashiyama, Simmering tofu and Kaiseki), Takemura (Arashiyama, simmering tofu and kaiseki), Haku-Un-An (Manpuku near Uji, Fucha-Ryori).

A condensed version of this was published in *The Book of Tofu*. Address: Tokyo, Japan.

305. Circle, S.J.; Smith, A.K. 1975. Soybeans: processing and products. In: N.W. Pirie, ed. 1975. *Food Protein Sources*. Cambridge, London, New York, Melbourne: Cambridge University Press. xx + 260 p. See p. 47-64. [88 ref]

• **Summary:** Contents: Introduction. Agronomy: Varieties, cultivation, yields. Soybean composition. Protein nutritional value. Traditional processing into nonfermented foods: Soybeans as a table vegetable (green soybeans), soy milk, tofu (soybean curd), yuba, kinako, salted soybeans, soybean sprouts. Traditional processing into fermented foods: Miso and shoyu, tempeh. Others (p. 55) include: natto, hamanatto, sufu (soy cheese), tao-tjo, kochu chang, ketjap, ontjom, and yogurt-like products.

Contemporary processing without defatting: 'Debittering' by aqueous treatment, whole bean processing, full-fat flour, soy milk and curd. Contemporary defatting processes: Defatting by aqueous processing, defatting with organic solvents, composite flour, soy flours, protein concentrates, protein isolates and textured soy products (recipes for using soy protein products in foods are available from several publications). Address: Anderson Clayton Foods, W.L. Clayton Research Center, 3333 Central Expressway, Richardson, Texas 75080.

306. Gin, Margaret; Castle, Alfred E. 1975. *Regional cooking of China*. San Francisco, California: 101 Productions. 192 p. Illust. Index. 21 x 21 cm.

• **Summary:** This book is filled with lovely woodcuts from the Horace Carpentier Collection, East Asiatic Library, University of California, Berkeley. Only 11% of China's land area is arable compared to 80% in the USA, yet today its population, mostly squeezed into the eastern third of the country, is four times that of the United States. The best soy sauce in China comes from Fukien [Fujian] and Amoy. The Classic of Mandarin cuisine reached its zenith around 1800, when Yuan Mei wrote volumes about food; these are still considered to be definitive studies of Chinese gourmet cooking in the Mandarin style. There is one entire chapter titled "Bean curd" (p. 57-63).

The book also contains recipes for: Fuzzy melon soup with bean curd (p. 37). Seaweed soup with bean curd (p. 41). Bean curd soup (p. 42). Ma Po bean curd (Szechwan, p. 59). Stir-fried vegetables with black bean sauce (with "2 tablespoons fermented black beans, rinsed and mashed, 1 slice ginger root, minced, 1 garlic clove, minced,..." p. 90). Stir-fried vegetables with fermented bean cake (fermented

tofu, p. 91). Braised soybean sprouts (Shanghai, p. 96). Clams with black bean sauce (with fermented black beans, rinsed and mashed, and slices of ginger root, minced, p. 109). Braised fish with fried bean curd (p. 115).

The glossary (p. 178-84) defines: Bean cake, fermented, and fresh (2-inch squares, 1 inch thick). Bean curd cheese, red (nam gooe). Bean-curd cake, deep fried. Bean-curd sheets or sticks, dried [yuba] (“Creamy beige-colored thin sheets. Used for vegetarian (Buddhist) dishes congee or as substitute for egg roll skins. Stick form is used mainly for soup... Always soak in warm water to make pliable before proceeding with recipe”). Bean curd, sweet (“Comes in dried, flat sheets, about 6 inches by 1½ inches. Mocha in color; no sweet taste”). Bean paste, hot. Black beans, fermented (= Fermented black beans. “Small black beans preserved in salt. Very pungent and moist. Almost always used with garlic and ginger in sauces. Rinse with warm water and mash before using. Purchased in plastic bags by weight in Oriental markets”). Brown bean sauce (“Also known as yellow bean sauce and ground bean sauce”). Fish soy. Hoisin sauce (“Thick, smooth, dark reddish brown sauce made from soybeans, spices, sugar, chili and garlic. Mildly sweet in flavor”). Soy sauce (light vs. dark with caramel added). Address: San Francisco, California.

307. Silverstein, Alvin; Silverstein, Virginia B. 1975. *Beans: All about them*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 86 p. Illust. by Shirley Chan. Index. 22 cm. Summarized in *Soybean Digest*, Sept. 1975, p. 43. [7 ref]
• Summary: This excellent book for children discusses beans in legend and history, how to grow them, and their future as a low-cost protein supplement. Includes experiments, bean recipes, and games.

Contents: Beans. The story of beans. The history of beans. Beans in legend and lore. The life story of the bean. Kinds of beans. Beans in the garden and the marketplace. Beans for the future. Fun with beans. Beans for good eating.

Page 2: “Kuan Yu, a great war god in Chinese folktales, was a bean curd [tofu] seller in his youth.”

Pages 12-13, a brief (and partially accurate) history of the soybean, begin: “Soybeans are native to eastern Asia. The oldest written records of them date back to 2838 B.C. [sic], when Emperor Shen Nung of China wrote a description of the plant.” Also mentions: The five sacred grains, soybean “milk,” tofu, yuba, [soy] sauces, soybean paste, soybean sprouts, soybean oil, Engelbert Kaempfer, first introduced “to the United States around 1800 when a ship brought some to Philadelphia [Pennsylvania], Commodore Perry (1854), USDA tested about 10,000 different kinds. Now soybeans are the number one U.S. cash crop, accounting for more than 75% of the world’s soybean supply. Soybeans are used as foods for humans (in the form of oil, flour, soy sauce, “milk substitutes, and meat substitutes and ‘extenders’”) and feeds for animals. They are also used in the manufacture of

more than 250 industrial products, including paints, soaps, lubricants, adhesives, and fertilizer.

Page 16: “In China, beans were a good luck symbol. A person who wore a string of soybeans hidden around his neck was believed to possess magic powers to do amazing feats. Three dark soybeans soaked in sesame oil for three days were used to foretell the future.”

The chapter “The life story of the bean” (p. 18-29) gives (with illustrations) a simple and accurate description of the bean seed and how it grows, discussing the hilum or seed scar, the micropyle or tiny hole at one end of the hilum, the seed coat, the two cotyledons in which food for the young growing plant are stored, the embryo nestled (a plant in miniature) between the cotyledons, with its two tiny leaves (the plumule), a little root (the radicle), and a stemlike part connecting them (the hypocotyl). When the seed is planted, and it germinates or sprouts, the “embryo root pokes its tip out through the micropyle and grows out into the soil. Tiny root hairs form along the growing root. They take in moisture and dissolved minerals from the soil.” The hypocotyl grows until it “suddenly pushes up out of the soil—the first part of the seedling to emerge. It is bent over, for the cotyledons are still buried in the soil.” The hypocotyl continues to grow. In a day or so the seed coat splits, then the top of the plant pops up out of the soil. “The empty seed coat is left behind, buried beneath the surface.” Now the young bean seedling is growing straight up. The two seed leaves at the top unfold and grow quickly. Below them on the stem are the two cotyledons. As sun shines on the growing plant, its leaves, cotyledons, and stem begin to turn green—a turning point in the life of the plant.

For a while, the growing plant takes the food it needs from the reserves stored in the two cotyledons. But as these reserves are used up, they shrivel and finally fall off. Now the young plant must create its own food using chlorophyll and photosynthesis.

Chlorophyll traps energy from the sun. When examined under a magnifying glass, one can see that the surface of a plant leaf contains many tiny openings called stomates, which are usually open during the day and closed at night. “When the stomates are open, gases from the air pass freely in and out.” Air is about 80% nitrogen, 20% oxygen, plus smaller amounts of carbon dioxide, water vapors, and others gases. In the leaves, “carbon dioxide and water are combined, using the sunlight energy trapped by chlorophyll, into sugar, starches, and other complicated chemicals. Scientists call this process photosynthesis (photo means light, and synthesis means a putting together).” The by-product, oxygen, passes out into the air through the stomates; it is the gas that humans and other mammals need to breathe.

Describes the underground activities related to plant growth, nodules, bacteria that live symbiotically in the roots and fix ammonia and nitrogen. Also describes the bean flower, its parts, self-pollination, the key role of bees, and

how the seeds are formed from the flower.

The chapter “The soybean–Number one” (p. 36-39) describes the current status of the soybean in the USA. The chapter “Beans for the future” discusses modern developments such as CSM, soyfoods such as sufu, tempeh, miso, spun soy protein fibers, soybean meat analogs, textured vegetable protein (TVP).

When a bean seed sprouts, how does it know which way is “up”? “Could you ever get a seedling with its roots pointing up in the air and its shoot poking down into the soil?” Supposing you cut off all sunlight? No, plants have a built-in gravity sense which scientists call “geotropism.” A plant hormone called an auxin causes the plant to bend upward—and toward the light (heliotropism). In 1888, the symbiotic partnership between legumes and nitrogen fixing bacteria was first discovered by Hellriegel and Wilfarth. There are short-day plants, long-day plants, and day-neutral plants; flowering will not begin until the length of days and nights is just right (p. 54-59). Bean recipes (p. 70-75). Address: 1. Prof. of Biology, Staten Island Community College, New York City; 2. Translator of Russian scientific materials.

308. Autumn Press, Inc. 1976. Imagine... (Ad for *The Book of Tofu* by Shurtleff and Aoyagi). *Mother Earth News* No. 37. Jan. p. 153. [1 ref]

• **Summary:** This exact same ad first appeared in Dec. 1975 in *Macrobiotic* (The) (Chico, California), No. 111. p. 61. Address: P.O. Box 469, Soquel, California 95073.

309. Norinsho. 1976. *Nihon shokuhin hyôjun seibunhyô* [Food composition tables for Japan. 2nd ed]. Tokyo: Ishiyaku Shuppan K.K. 180 p. March 25. Index. 15 x 21 cm. [Jap]

• **Summary:** The first edition of this book was published on 15 Jan. 1964. The first revised edition (130th printing) was published on 25 Jan. 1969. This is the second revised edition (265th printing), published on 25 March 1976. Also published by Joshi Eiyo Daigaku Shuppan-bu.

For soybeans and soyfoods, see pages 33-35, 69, and 74 (basic nutritional composition), and 111-12 (amino acid composition).

Page 88, No. 812: Amazake. Per 100 gm. Calories 101, moisture 74.0 gm, protein 2.4 gm, fat 0.1 gm, carbohydrates (sugars 22.7 gm, fiber 0.6 gm), ash 0.2 gm, calcium 74 mg, phosphorus 25 mg, iron 0.4 mg, vitamin A 0 mg, vitamin B-1 0.08 mg, vitamin B-2 0.06 mg, nicotinic acid 0.06 mg, vitamin C 0 mg.

A later edition (after 1976), containing at least 298 pages, gives details on the following soy-related foods (p. 76-80): Japanese-grown whole soybeans (dry, or boiled). Whole dry USA-grown soybeans. Whole dry Chinese-grown soybeans. Green immature soybeans (edamame; raw, or boiled). Soybean sprouts (raw, or boiled). Defatted soybeans (whole, or dehulled). Kinako (soybeans roasted and ground).

Budô-mame (soybeans boiled with shoyu). Momen tofu (regular). Kinugoshi tofu (silken). Soft tofu. Packed tofu. Okinawa tofu. Yaki-tofu (grilled). Nama-age. Abura-age. Ganmodoki. Kôri-dofu. Tofu-chikuwa (steamed type, or roasted type). Natto (fermented soybeans): Itohiki-natto, Goto natto, or tera-natto.

Miso: Rice-koji miso (sweet type, light yellow type, dark yellow type). Barley-koji miso. Soybean-koji miso. Dried miso. Kinzanji miso. Hishio-miso.

Other: Okara. Soymilk (regular, reconstituted, or soft drinks). Yuba (wet, or dried).

Page 254 gives the amino acid composition of soybeans and various soyfoods. Page 298 gives the protein scores, amino acid values, and chemical scores of selected foods. Page 8 gives the energy conversion factor for tofu, agé, and yuba.

310. Colchie, Elizabeth. 1976. The sensual soybean: Eating well at bargain-basement prices. *House and Garden* 148:133, 144, 146. April. [1 ref]

• **Summary:** A brief introduction to soy flour, sprouts, whole dry soybeans, roasted soybeans, bean curd cakes [tofu], fermented curd, bean curd skin [yuba], dried bean curd sticks, bean paste, miso, black beans [fermented black soybeans]. With illustrations from *The Book of Tofu* by Shurtleff & Aoyagi.

311. Okamoto, Susumu. 1976. Yuba [Yuba]. *Shoku no Kagaku* (*Food Science Journal*) No. 29. p. 128-32. April. [Jap]

Address: Tokyo Nôkô Daigaku Kyôju [Prof., Tokyo Univ. of Agriculture and Industry].

312. *Shoku no Kagaku* (*Food Science Journal*). 1976. Daizu tanpaku shokuhin [Soy protein foods]. No. 29. 132 p. April. [Jap]

• **Summary:** Each of the 21 articles in this issue is cited separately.

313. Watanabe, K.; Okamoto, S. 1976. Yuba-jô himaku no seisei to bussei [Formation of yuba-like films and their physical properties]. *Nyu Fudo Indasutori* (*New Food Industry, Tokyo*) 18(4):65-77. April. [27 ref. Jap; eng]

• **Summary:** Second Japanese study on yuba production. Address: Tokyo Noko Daigaku, Nôgaku-bu.

314. Huang, Su-hei (Miss). ed. 1976. Chinese cuisine: Wei-Chuan cooking book. Taipei, Taiwan: Wei-Chuan Publishing Co. 221 p. May. Illust. Index (at front). 27 cm. [Chi; Eng]

• **Summary:** This attractive book of Chinese cooking from the Wei-Chuan Cooking School is a bilingual Chinese / English edition. On each page is one recipe and a 1/3-page color photo of the prepared dish. The title of the recipe is written in Chinese in large bold characters and is also given

(to the right) in smaller bold letters in English. Above the number of servings is the province or region of China from which the recipe comes (e.g., Szechuan, Cantonese, Peking, Hunan, etc.) Most of the recipes call for ¼ to ½ teaspoon of MSG; many call for soy sauce.

The introduction (p. 2-17) contains: (1) Seasonings for Chinese cooking, incl. soy sauce. (2) Instruments [utensils] for Chinese cooking. (3) Culinary idioms (basic techniques, such as cleaning, cutting, heating the pan, stir frying, etc.). (4) Arrangement of seating order at feast. (5) Arrangement of the dinner sets at a feast. (6) Arrangement of food and menu. (7) Basic principles of arranging the menu. (8) Sample menus for banquets or ordinary meals. (9) Commonly used vegetables (2-page color photo, incl. "9. yellow soybean sprouts").

(10) Commonly used dry materials and canned foods (2-page color photo, incl. "6. fried gluten balls { 'mien jin pau' })." 13. pickled plums ('umeboshi'). 18. agar-agar. 33. nori (purple laver sheet). 35. bean curd skin [yuba, tofu p' i]. 36. bean curd roll. 37. Pressed bean curd cake [dofugan]. 39. kau fu. 40. bean curd wrapper (bai yeh; pressed tofu sheets). 41. vegetarian gluten roll (mien jin). 42. dried bean curd noodles [kan-ssu]. 43. Fermented black beans [fermented black soybeans]. 44. bean curd stick [dried yuba stick] ('fu dzu'). 47. Soy sauce. These two pages also show Wei-Chuan Foods Corp. is a manufacturer of many Chinese-style foods.

(11) Description of some other special ingredients. "1. Hot bean paste (pronounced 'la jiao jiang'). A thick spicy paste made from ground hot red peppers and soy beans." "2. Sweet bean paste ('t'ien mien jiang'). Made 'from ground, fermented steamed bread and spices'" [soy is not mentioned]. "3. Soy bean paste ('do ban jiang'). A thick black paste similar in taste to sweet bean paste, but made from fermented soybeans." "8. Fermented black beans: Small black [soy] beans which have been marinated in soy sauce and salt and are used to flavor steamed fish and meat or in stir-fried dishes." "10. Pickled bean curd or Chinese cheese [fermented tofu] ('do fu ru'). Bean curd cubes which are first dried and then mixed with wine, spices and salt and allowed to ferment. It is used to season braised pork and duckling." "21. You tiau. A deep-fried crispy Chinese cruller..." * "Kau fu: A spongy type of vegetarian ingredient made from wheat gluten" (see p. 151). "Fried gluten ball ('mien jin pau'): A type of light, round, deep-fried ball made from wheat gluten and water." "Su tsang: A type of long thin roll made of wheat gluten and water."

Interesting soy related recipes: Bean curd noodle and celery salad (with "4 oz. bean curd noodles," Szechuan, p. 23). Steamed spareribs with fermented black beans (with "3 T. [tablespoons] fermented black beans," garlic, ginger root, rice wine, and soy sauce, Cantonese, p. 60). Steamed pork in preserved bean sauce (with "2 squares fermented bean curd" ('do fu ru'), Cantonese, p. 74). Steamed carp with fermented

black beans, Hunan, p. 88. Braised carp with hot bean paste (with "1½ T. [tablespoons] hot bean paste" ('la do ban jiang'), Szechuan, p. 100). Stir-fried oysters with fermented black beans (Taiwanese, p. 132).

One section of the book titled "Bean curd & eggs" (p. 140-49) contains various tofu and yuba recipes, including: Ma-Po's bean curd (Szechuan, p. 140). Vegetarian chicken loaves (with "16 sheets bean curd skin" [yuba], Shanghai, p. 147). Eggplant rolls with chopped pork (with "1 sheet bean curd skin, Taiwanese, p. 148). Stuffed bean curd rolls (with "8 bean curd sheets (bai ye), Shanghai, p. 149). Bean curd is counted in squares. Address: Taiwan.

315. Farnum, C.; Stanley, D.W.; Gray, J.I. 1976. Protein-lipid interactions in soy films. *Canadian Institute of Food Science and Technology Journal* 9(4):201-06. Oct. [17 ref. Eng; fre] • **Summary:** Microscopic studies show that yuba films consist of a protein matrix in which lipid droplets are dispersed. On a dry weight bases, soybeans contain 20.25% lipids, 36.5% proteins, and 4.7% ash. Soymilk contains 17.8% lipids, 41.85% proteins, and 6.8% ash. Yuba contains 18.0% lipids, 46.3% proteins, and 3.9% ash. Comparing the fatty acid composition of the oil in soybeans with the oil in yuba, the percentage of palmitic acid increases by 6%, stearic acid decreases by 69.7%, oleic acid increases by 2%, linoleic acid increases by 6%, and palmitic acid decreases by 19.8%. Address: Dep. of Food Science, Univ. of Guelph, Guelph, Ontario.

316. Bhumiratana, Amara. 1976. Small-scale processing of soybeans for food in Thailand. *INTSOY Series No. 10*. p. 143-46. R.M. Goodman, ed. Expanding the Use of Soybeans (College of Agric., Univ. of Illinois at Urbana-Champaign). • **Summary:** Contents: Introduction. Fermented soybeans. Soymilk. Yuba. Yoghert [Soy yogurt, inoculated with *Lactobacillus bulgaricus* and *L. acidophilus* and incubated at 37°C for 16-20 hours]. Chinese soya bean dessert (Taow Huey). Tofu (white or yellow). Sufu. Soybean snack (protein crisp; deep-fried sufu). Tempeh. Thai dessert. Kanom ping kaset. Baby food. Kaset noodle. Kaset protein. Note: There is a flowchart and photo of each product.

"The Institute of Food Research and Product Development, Kasetsart University, initiated several soybean utilization pilot projects five or six years ago. Using soybeans alone or combined with other ingredients, we have developed a range of products, such as baby foods, kaset protein, and snacks. Tests indicate that these foods are highly acceptable, being both palatable and nutritious. Some of these products are soon to be manufactured commercially by small-scale industries. This paper is a description of the soy food processing methods developed by the Institute." Address: Inst. of Food Research and Product Development, Kasetsart Univ., Bangkok, Thailand.

317. Okamoto, Susumu. 1976. Yubamaku no seisei to riyô [Formation of yuba films and their utilization]. *Chori Kagaku (Cookery Science)* 9(3):17. [Jap]*

318. Chiang, Jung-feng; Schrecker, Ellen. 1976. Mrs. Chiang's Szechwan cookbook. New York, Hagerstown, San Francisco, London: Harper & Row, Publishers. xxi + 359 p. Illust. Index. 24 cm.

• **Summary:** The Preface begins: "I met Chiang Jung-feng in 1969 in Taipei, Taiwan, where my husband, John, and I had gone to pursue John's Chinese language studies and our love of Chinese food. She began as our cook and housekeeper; she soon became a friend and teacher and eventually co-author of this cookbook. Jung-feng was born and raised on a farm on the outskirts of Chengtu, the culinary heart of the province of Szechwan."

The romanization is in pinyin. Chapter 12, titled "Bean curd" (p. 218-32) is exceptional; the introduction is one of the best seen to date. The chapter contains four tofu recipes, including Pock-marked ma's bean curd (*mapo doufu*). The chapter begins: "Every culture has its children's food—things that everybody eats but children dote on. In this country [USA] it might be hot dogs or pizza; in Szechwan it was bean curd. Older people loved rich meat dishes, but children had less developed palates and adored the clear, fresh taste and soft texture of bean curd. Mrs. Chiang's own favorite food when she was a child, the bean curd she ate was particularly delicious because it was homemade..."

"My mother would grind fresh soybeans very fine, then combine them with water to make a kind of soybean 'milk.' When she added a certain chemical (probably gypsum) to this, it coagulated instantly. Then she hung the mixture to drain in a cloth bag for several days; at the end there was a mild, creamy bean curd with a texture as smooth as silk. We ate it several times a week..."

"There are many types of bean curd. Fresh bean curd is the commonest. It comes in soft, white cakes about 1 inch thick and 3 to 4 inches square. It has the consistency of hard custard, and, though fragile and perishable, it can be kept for a week in the refrigerator if you store it in an uncovered bowl of water and change the water every other day."

"Bean curd comes in many other, less common forms. Dry bean curd, or *doufugan*, isn't dry at all. It is just regular bean curd that has been aged [sic] and pressed until it becomes brown on the outside. It is especially delicious boiled with soy sauce and spices and then sliced and served cold.

"Fried bean curd balls, or *youdoufu* are really dry—light, porous balls that, when soaked, become spongy. Their strange texture and mild taste make them greatly prized in vegetarian *haute cuisine*.

"Bean curd skin [yuba], another form, comes in thin, shiny brittle sheets."

"There is also [in Taiwan] 'stinking bean curd' [stinky

tofu], which the process of fermentation has transformed into a substance strikingly similar to some of the stronger cheeses.

"Finally, there is pickled bean curd [fermented tofu], or *doufu lu*. It was popular in Szechwan and was what Mrs. Chiang's family often ate with rice for breakfast. Chinese groceries occasionally carry jars of the highly spiced Szechwanese version of the stuff. Eaten on top of some plain white rice, it is an amazing gastronomic experience, though not one recommended for the weak in palate. Mrs. Chiang claims that the pickled bean curd her mother made was both hotter and more fragrant." One other bean curd recipe is given on pages 98-103.

One yuba recipe is: Bean curd skin soup (*fuzhu tang*, with "4 sheets dried bean curd skin," p. 267-68).

Note 1. This is the earliest English-language document seen (June 2012) that uses the word *fuzhu* to refer to dried yuba sticks.

One recipe using fermented black soybeans is: Black beans, green peppers, and pork shreds (*heidouchi qingjiao chao rousi*, with "3/4 cup dried salted black beans," p. 108-10. "Dried, salted black beans entered Szechwan from the outside, probably either from Canton or Hunan. Because they were not indigenous, Mrs. Chiang's mother rarely cooked with them, though when she did the results were always delicious. She used them mainly in simple stir-fried dishes, for the black beans have such a strong and complicated flavor that they [can] dominate any dish to which they are added").

Chapter 16, "Pickles, appetizers, and garnishes" contains a recipe titled simply "Soybeans" (*tangcu douz*, with "1½ cups dried soybeans," p. 338-40. "Whenever Mr. Chiang's father invited a group of cronies or relatives over, her mother would make up a large batch of soybeans to serve with the wine. These crunchy, spicy beans are the traditional accompaniment of a Szechwanese drinking session, just as salted peanuts are in America." After being rinsed, the soybeans are dry roasted in a wok for about 10 minutes, or until slightly brown).

Note 2. The author is given as Chiang Jung-feng, with Ellen Schrecker and John Schrecker. The section on "Ingredients" includes: Bean curd (*doufu*). Chinese red beans (*dousha*).

"Dried, salted black beans (*douchi*): These dried, salted black beans impart such a delightfully pungent, sour, and salty taste to dishes that, even though they are not Szechwanese in origin, Mrs. Chiang likes to cook with them. They are small, about the size of a pea, black, and partially dried. They come in plastic bags or tins and are available at Chinese markets."

Dried seaweed (*zicai*). Hoisin sauce (*haixian jiang*): Very similar to *tianmian jiang*. Monosodium glutamate (*and why we don't use it*). Soy sauce (*jiangyou*). "Soy sauce was such an important condiment in the large and busy peasant

household where Mrs. Chiang grew up that the family made it own." It "was aged in huge earthenware vats." "Both light and dark soy sauces were produced, as well as a rather unusual sweet variety." Mrs. Chiang "finds Kikkoman soy sauce particularly good." The difference between light and dark soy sauces is "a question of color," not of taste or texture. "Mrs. Chiang, then, uses Kikkoman soy sauce in all her cooking."

Page 203: John "found that the word 'ketchup' originally came into English from a Chinese word in the Fukienese dialect, *ke-tsiap*, which could well mean 'tomato paste.'"

319. Hitomi, Hitsudai; Shimada, Isao. 1976. *Honchô shokkan* [A mirror of food in this dynasty. 5 vols.]. Tokyo: Heibonsha. 18 cm. Translation from the 1697 Chinese-language edition by Isao Shimada of the *Pen chao shih chien*. [Jap]*

• **Summary:** See Hitomi 1695. He died in 1701.

320. Jordan, Julie. 1976. *Wings of life: Vegetarian cookery*. Trumansburg, New York: The Crossing Press. 255 p. Illust. by Joanne Leary. Index. 23 cm. A Crossing Cookbook. Excerpted in *Mother Earth News*, March 1978.

• **Summary:** This is the favorite vegetarian cookbook of the Bloodroot Collective. Page 16 recommends soy flour as a fortifier for bread. Pages 83-84 describe whole soybeans. The section titled "Additions to stir-fried vegetables" includes tamari and soy sauce, soybean skins [yuba], and tofu. Soy-related recipes include: Charlotte's master sauce (featuring tamari, p. 216). Homemade tofu (p. 241, curded with Epsom salts). Address: New York.

321. Lee, Calvin B.T.; Lee, Audrey Evans. 1976. *The gourmet Chinese regional cookbook*. Secaucus, New Jersey: Castle Books, a division of Book Sales Inc. 322 p. Illust. Map. General index. Recipe index. 24 cm.

• **Summary:** This book divides China into four regions (East, north, west and south). A detailed description of the food of each region is given. The recipes are placed in the appropriate region. Thereafter, there are chapters on: Chinese cooking at home. Ingredients for Chinese cooking. Chinese groceries that accept mail orders.

East China (characterized by Shanghai): Soy sauces are widely used (p. 33). "The Hakkas, or 'guest people,' who migrated to Fukien centuries ago from Honan in the north... Not surprisingly more than one hundred languages and dialects may be found in Fukien alone." "Although Fukien is known for its fine soy sauces, very little is used in any one dish.

Soy-related dishes: Red-cooked chicken (with 1¼ cups light soy sauce" and "1 cup dark soy sauce," p. 35). Braised pork and bean curd (with "3 bean curds," p. 51). Ningpo fried fish roll with bean curd sheets (the sheets "are dried, thin, and fragile. When deep-fried, as in this recipe, they

become very flaky and crisp." With 2 sheets dried bean curd [yuba], p. 59). Crab meat, watercress, and bean curd soup (with "2 bean curds," p. 77). Shanghai spring rolls (with "2 pressed bean curds," p. 81). Red wine sediment paste (with 1½ tablespoons red bean paste," p. 83).

North China (Kansu, Shensi, Shansi, Honan, Hopeh, Shantung; this is China's ancient heartland). Recipes: Peking fried bean curd (with "2 bean curds," p. 115). Lamb soup with dried bean curd (with "2 ounces dried bean curd {sliced type}," p. 118).

West China (Szechwan, Yunnan, Kweichow, Hunan, Hupeh; this is a world unto itself), Recipes: Spicy ground pork and bean curd (p. 147). Chunking beef with black bean sauce ("Like the Cantonese, the western Chinese appreciate the salty pungency of fermented black beans" With "2 tablespoons black [soy] beans," p. 153). Yunnan lamb with curry and black beans [fermented black soybeans], p. 156. Yunnan steamed fish, with curry and black bean sauce (with "2 tablespoons [fermented] black beans," p. 162). Scallops with black bean sauce, p. 166. Ma Po bean curd (also called "Grandmother Pockmark's bean curd," with "4 bean curds," p. 170).

South China (Kwangtung and Kwangsi; Canton has long been a city of trade, starting in about AD 300 when the first Arab merchants arrived). Recipes: Pork with black beans and broccoli (with "2 tablespoons black beans," p. 199). Steamed spareribs with black beans sauce, p. 206. Beef with asparagus and black beans (with "2 tablespoons black beans," p. 209). Beef with bean curd and oyster sauce, p. 214. Fried fish with bean curd, p. 223. Steamed stuffed bean curd (with "6 bean curds," p. 235). Bean curd soup, p. 240.

The section titled "Ingredients for Chinese cooking" (p. 281-305) includes: Bean curd (dow foo). Black beans (dow see, they have a strong affinity for garlic. Sometimes called "fermented black beans). Dried bean curd (tiem jook [sweet dried yuba sticks]. "This dried soy milk sediment comes in thick, shiny sheets"). Dried bean curd sheets (these fragile semicircles come packaged in a large envelope). Hoisin sauce (Hoi sin jeung). Ketchup ("Curiously enough, the word 'ketchup' is derived from the Chinese words meaning 'brine of pickled fish'). Monosodium glutamate (Mee jing). Peanut butter: See sesame paste. Peanut oil (Far sung yow. Lard is the principal cooking fat or oil in China. "It has the advantage of giving a clear color and a rich flavor to whatever is cooked in it. It unfortunately has disadvantages as well... Peanut oil, on the other hand, tastes very much the same as the best Chinese lards and has none of lard's disadvantages). Pressed bean curd (dow foo gon [doufugan]). Red bean curd (nom yu [fermented tofu]). Roasted peanuts. Sesame oil (Ma you; add small quantities just after the dish is removed from the heat). Sesame paste (Jee ma jeung). Sesame seeds (Jee ma; white or black). Soy sauces ("Soy sauce is certainly the most frequently used ingredient in Chinese cooking It is also one of the most variable,

ranging from light to dark, from thin to rich, from salty to almost sweet.” Light soy sauce is Sang chau, and dark soy sauce is See au, sometimes called black soy sauce).

Calvin Lee was born and raised in New York City. His entry into the world of gastronomy occurred at age 17, as a result of his father’s death, leaving him as the general manager of Lee’s Restaurant, at that time New York’s oldest Chinese restaurant. Address: 1. Chancellor, Univ. of Maryland, Baltimore.

322. Leung, Mai. 1976. *The classic Chinese cook book*. New York, NY: Harper’s Magazine Press. xv + 363 p. Illust. (line drawings by Claude Martinot). Map. Index. 24 cm.

• **Summary:** A remarkable book by a excellent cook and writer with much experience in China (where she was born and raised), Hong Kong (with outstanding chefs), and New York (with more fine chefs). An interesting map of China shows the major culinary regions. The illustrations contribute greatly to the book.

Each recipe is accompanied by its Chinese characters but with no romanization / transliteration. MSG is an optional ingredient in many recipes. Soy related recipes: Chicken with walnuts in hot bean sauce (the sauce mixture includes “6 teaspoons ground bean sauce, 4 teaspoons hoisin sauce, 4 teaspoons black soy sauce,” p. 56-57). Soy sauce chicken (with “½ cup black soy sauce,” p. 66). Chicken in hoisin sauce (the sauce mixture includes “6 tablespoons hoisin sauce, 2 tablespoons black soy sauce,” p. 67). Egg yolk fish cakes with soy vinegar dip (p. 87-88).

The chapter titled “Duck” (p. 91-93) describes how Peking ducks are a different breed from other ducks, how they are raised and force-fed in Hong Kong before being killed. The recipe for Peking duck (p. 109-11) describes the origin of Peking duck in about 1855 in Peking. “Pen Yee Inn, a restaurant specializing in chicken and duck dishes, created the method that made Peking duck a star. The dish was purely for the very rich, and the primary interest was the crisp skin.” Traditionally it required “three months of training just to learn to kill and dress the duck correctly.” This recipe calls for either Hoisin sauce dip or Bean sauce dip. The next recipe is Red-cooked duckling with lettuce in soy sauce (p. 111-12).

The recipe titled “Childbirth ginger” explains: “In Kwantung Province, after a woman gave birth to a child, it was the duty of the mother-in-law to prepare a big pot of this ginger for her daughter-in-law to regain her strength.” Rich in calcium, the supply had to last for a month.

More soy related recipes: Beef with baby corn and Chinese mushrooms in black bean sauce (with “2 tablespoons salted black beans: rinse in hot water, drain, and mash into paste,” p. 158-59). Fish slices in garlic and black bean sauce (p. 183-84). Fried mock plums (“For this dish, shrimp paste is rolled up in bean curd skin to form a long cylinder.” With “2 pieces dried bean curd skin, each 5 by 10

inches,” p. 184-85). Soft shell crabs in black bean and chili sauce (p. 202-03).

The chapter titled “Vegetables and bean curd (p. 205-31) begins: “I do not understand why so many Westerners cook their vegetables as if they were cooking potatoes.” They are “cooked so much that they all taste the same, like cooked potatoes—dull, mushy, and lifeless.” “Fresh bean curd is made of soybeans... [sold in] cakes 1 inch thick and 2 to 4 inches square. Smooth, fragile, custardlike, and ivory colored, bean curd itself is bland in taste, but it quickly absorbs flavor from other ingredients with which it is cooked. As it is inexpensive and high in protein, bean curd serves the purpose of meat and milk for many Chinese in addition to being used as a vegetable. Bean curd is a nutritious and well-loved food. My grandmother used to say, ‘Eat bean curd every day and your eyes will shine like the autumn moon, your skin will be smooth, and your hair soft and black.’ Generally available in Oriental grocery stores, bean curd is carried in relatively few supermarkets. The canned variety is not acceptable as a substitute for fresh bean curd. Store in a jar, cover with water, and change water daily. It will keep for a week or more.” In recipes that call for bean sprouts, Chinese prefer mung bean sprouts that are fresh, white, firm, and dry—not brownish, limp and watery. Never, never used canned bean sprouts.

Buddhist delight (vegetarian, with “4 fried bean curd puffs: cut each into 4 pieces,” p. 225-26).

Note: This is the earliest English-language document seen (May 2012) that contains the term “fried bean curd puffs.” Pockmarked woman’s spiced bean curd [Mapo doufu] (“It is said that the wife of a cook named Chan, who lived in Szechwan [Sichuan] more than a century ago, created this bean curd recipe. Mrs. Chan’s face was pockmarked.” With “1 pound fresh bean curd: rinse in cold water, cut into ½-inch cubes,” p. 228-29). Hakka stuffed bean curd (“Hakka cooking is well known for its bean curd dishes. This stuffed bean curd is one of the most popular and well-loved among Chinese.” With “3 pieces fresh bean curd, each about 3 inches square: pat dry with paper towels, cut each square into 4 triangles, slice some bean curd out of the middle of one side of triangle to make pocket for stuffing,” p. 229-30). Stir-fried bean curd with pork shreds (p. 231).

The chapter titled “Sauces and dips” includes: Bean sauce dip (with “4 tablespoons Szechwan sweet bean sauce or ground bean sauce,” p. 305). Fresh chili-soy dip (with “6 tablespoons black soy sauce,” p. 308). Hoisin sauce dip (p. 309). Soy-chili dip. Soy-sesame dip. Oil-oyster sauce dip (with “6 tablespoons oyster-flavored sauce,” p. 310). Soy-vinegar dip (with “4 tablespoons thin soy sauce,” p. 311).

The chapter titled “Chinese cooking ingredients with information on storing” is an expanded glossary. Each entry is accompanied by its Chinese characters but no romanization. It includes: Bean curd (fresh). Bean curd cheese (red) (“Labeled as red bean cheese, 2 inches square

and about 1 inch thick"). Bean curd puffs (fried) ("Golden color, fluffy and spongy, cushionlike square cakes"). Bean curd skins [yuba] (plain, dried) ("Shiny, light yellow, approximately 6 by 10 inch paper-thin skin, dried and brittle. It is the rich cream that floats atop the" soybean milk made from yellow soybeans). Bean paste (sweet red) [azuki *an*] ("Made from puréeing Chinese red beans, sugar and shortening").

Bean sauces: (1) Ground bean sauce "Also known as brown bean sauce or brown bean paste. Brown, thick, puréed sauce made from yellow soybeans, flour, salt, and water; salty and pungent. Sold in cans." (2) Szechwan chili bean sauce. (3) Szechwan sweet bean sauce. "Labeled as sweet bean paste sometimes. Not sweet, but salty and pungent."

Black beans (salted) ("Black [soy] beans preserved in ginger, garlic, salt, and spices; used as seasoning"). Hoisin sauce ("Means 'seafood sauce' in Chinese. Made from soybeans, water, garlic, chili, flour, and spices"). MSG ("Monosodium glutamate, which the Chinese call 'taste powder.' The Chinese extracted it from soybean protein and have been using it for at least a century... It should be used sparingly. Sold under the brand name Accent"). Oil (Chinese prefer to use peanut oil. "But I find corn oil equally good in the United States"). Oyster-flavored sauce (No mention of soy as an ingredient). Sesame seed oil ("Savory, aromatic, topaz-colored [brown] oil made from roasted white sesame seeds"). Sesame seed paste (Since most imported products have lost their taste, "it is much better to use peanut butter. In China, peanut butter and sesame seed paste are used interchangeably in cooking"). Soy sauces ("The most important seasoning in Chinese cooking. Varieties and grades are many... Knowing their differences and using the right kind is the key to good-tasting dishes." The following two types are most frequently used): (1) Black soy sauce ("Also known as dark soy sauce; extract from fermented soybeans, caramel, flour, salt and water; darker and heavier than thin soy sauce, salty but with a slightly sweet taste. Do not buy one labeled 'double dark soy sauce.' It is too salty"). Thin soy sauce ("Also known as light soy sauce; liquid extract from soybeans, flour, salt, and water after slow fermentation under the sun. The first extraction, which is commonly sold in the States, is the best").

The "Shopping list" chapter (p. 343-48) contains an expanded alphabetical list of the English names of Chinese ingredients followed by the name in Chinese characters. Address: Madison, New Jersey.

323. Lin, Florence. 1976. Florence Lin's Chinese vegetarian cookbook. New York, NY: Hawthorn Books. xix + 236 p. Illust. by Nai Gi. 24 cm.

• **Summary:** Contains a great deal of information on and recipes using soyfoods. Chinese food expert Barbara Tropp says this book has the best glossary available, and has very creative and interesting but drab recipes.

Hoisin sauce is a ground bean sauce to which sugar, garlic, and other flavorings have been added. It is the most popular commercially prepared flavored bean sauce.

Civilized Chinese patterns of eating were established by Confucius. The second great influence was Taoism, which advocated a simple diet, natural foods, and the basic belief that proper eating leads to good health. The third great influence was Buddhism, which was opposed to killing, so advocated a vegetarian diet. The art of vegetarian cookery was initially developed mainly in Buddhist monasteries; later it spread to private homes and restaurants.

To make good meatless broths use soybeans, soy sprouts, tough or wilted vegetables, mushrooms, and / or bamboo shoots. To make soy sprouts, it is best to use new-crop soybeans, which have the highest germination rate. This book contains many recipes that call for sea vegetables. Soy sauce is widely used in Chinese vegetarian recipes.

Chapter 3, titled "Soybeans, soybean products, and other legumes" contains much useful information and recipes. A diagram titled "Chart of soybean products" (p. 53) shows the complex relationships, includes Chinese characters for each product, and shows a few soy products that are not in the Glossary: Fermented soybean curd (*Fu ju*), comes in white (*pai*), red (*hung*) and spiced (*la*). The many interesting recipes, each with a Chinese name (with Chinese characters) and an English name include: *Su huo t'ui* and *su chi* (Mock ham), *Su ya* (mock pressed duck), and *Wu hsiang tou fu kan* (Seasoned pressed bean curd).

Glossary (soybeans, soybean products, and legumes, p. 208-13; Chinese characters are given): "Fresh young soybeans—*Mao tou*:" Delicious. They are in season in the early fall. "They come in dark fuzzy pods and are sold by weight. Young soybeans are like corn and should be eaten as soon as they are picked from the plant. They may be cooked with or without the pods."

"Dried soybeans—*Huang tou*:" Yellow soybeans.

"Soybean sprouts—*Huang tou ya*:" Sold by weight. Best when made in cooler weather. "When bought fresh, they will keep in the refrigerator for 2-3 days, or longer if kept in a brown paper bag inside a plastic bag."

"Soybean milk—*Tou chiang*:... usually served hot as a beverage with breakfast."

"Soybean milk skin—Called by many names [*Fu yi*, *fu p'i*; see p. 53]. Each region has a different name for it, as does each food processor, and the thickness shape and wrapping may be different." Four kinds are readily available in Chinese food stores" (1) *Erh chu* is "cut into rectangles 1½ x 4 inches and 1/8 inch thick. The pieces some stacked and wrapped in paper, in half- or one-pound packages." (2) *Yüan chu* comes in sticks [dried yuba sticks]. When reconstituted, its thickness is about the same as *erh chu*. (3) *San pien fu chu* is half-moon shaped. When still soft, it is folded into 6 x 10-inch rectangles then dried. It is thinner than *erh chu*. (4) *Fu yi* "is the thinnest of the bean milk skins."

It is paper thin and almost transparent. When dried it is very brittle, and must be handled very gently. It is used mainly to wrap fillings. It comes in stacks of 8-10 sheets..."

"Soybean milk residue—*Tou fu cha*;" [okara]. Can be a delicious ingredient in cooking. "What is not used for food is made into a feed for animals or put into the ground as fertilizer."

"Curdled soybean milk—*Tou fu hua*:" *Hua* means "flowers." These very tender curds are "eaten hot with soy sauce or cold with syrup as a snack." It is "sold only in bean curd factories by the pint."

"Bean curd coagulant—*Shou shih kao*" [calcium sulfate]: A "white substance which comes in powdered form. It is used to coagulate soybean milk to make *tou fu* (bean curd)."

"Tender soybean curd—*Nen tou fu*: When some water is removed from the curdled bean milk, it is known as fresh tender bean curd. It is cut into squares 4 x 4 by 1½ inches.

"Firm soybean curd—*Lao tou fu*: When a coagulant is added to the boiled bean milk of a different concentration and some of the water is removed, the milk becomes firm bean curd. It is firmer than the tender bean curd and is cut into 3 x 3 x ¾-inch squares.

"Pressed bean curd sheet—*Pai yeh*: Fresh bean curd sheet looks almost like a sheet of unbleached muslin. When it is frozen, the color turns darker, to a light brown. It is made into square sheets of various sizes. It is used to wrap fillings and it is also sometimes cut into short strips and cooked in dishes along with seasoning vegetables. Pressed bean curd sheet is best eaten fresh..."

"Pressed soybean curd—*Tou fu kan*—plain: When even more water is pressed out of firm bean curd, it becomes pressed bean curd... it is almost like a firm cheese." It may be bought either plain (*Pai tou fu kan*) or seasoned (*Wu hsiang tou fu kan*). "The seasoned curd is cooked in soy sauce and star anise [*pa chiao*], giving it a brown color." "The white pressed bean curd should be soaked in salt water (made of 1 tablespoon salt to 4 cups water) in a covered container. The seasoned pressed bean curd should be soaked in salt water and soy sauce. If stored in the coldest part of the refrigerator, they will keep for several weeks."

"Fried soybean curd—*Yu tou fu*:... The bean curd is cut into 1½ inch cubes and deep fried in oil until a golden crust forms outside, which the inside... remains soft." It "is sold by weight, usually in half- or one-pound bags."

"Wheat gluten—*Mien ching*:" (p. 217). "Deep-fried gluten—*Yu mien ching*:" "Fresh or dried wheat gluten—*K'ao fu*:"

Glossary (condiments and seasonings, p. 219-23): "Soy sauce—*Chiang yu*:" The "most important seasoning liquid in Chinese cooking. Comes in light or dark, thick or thin. Dark or thick is *Lao ch'ou*. Light or thin is *Sheng ch'ou*. Soy sauce also comes in different "flavors, such as mushroom soy sauce and, for nonvegetarians, shrimp roe soy sauce. Flavored soy sauces are used mainly for dips and for special flavors in

salads, noodles, and as a final touch to a dish."

Note: This is the earliest document seen (April 2012) that uses the term "mushroom soy" or the term "mushroom soy sauce" to refer to a type of dark soy sauce flavored with mushrooms, or that uses the term "Lao ch'ou" to refer to dark or thick Chinese soy sauce.

"Salted black beans—*Tou shih*:" These beans [fermented black soybeans] are "used to flavor bland foods, such as eggplant or bean curd." They are never eaten alone.

"Brown bean sauce—*Yüan shai shih*:" Made from "fermented soybeans and wheat flour mixed with salt and water. The beans in the sauce may be either ground (to make ground brown bean sauce—*Mo yüen shih*), or left whole. To this basic beans sauce, spice and other seasonings are added [in different proportions], creating many varieties" in "different regions of China. In Szechuan, large amounts of hot peppers and crush Szechuan peppercorns are added; in the northern provinces, garlic and scallions are used;..."

"Hoisin sauce—*Hai hsien chiang*:" A "ground bean sauce to which sugar, garlic, and other flavorings have been added. It is the most popular commercially prepared flavored bean sauce. It is used for cooking, or very often as a dip for deep-fried batter-dipped vegetables."

"Sesame paste—*Chih ma chiang*:" "Sesame oil—*Ma yu*:"

324. Liu, Christine Y.C. 1976. Nutrition and diet with Chinese cooking. [Ann Arbor, Michigan?]. [ix] + 319 p. Illust. (by Jacqueline Sharp). Recipe index. General index. 23 x 19 cm. Reprinted in 1977. [26 ref]

• **Summary:** Contents: Acknowledgment. 1. Introduction. 2. Is Chinese food nutritious?: The protein facts, other advantages. 3. About monosodium glutamate (MSG) (many recipes contain 1/8 teaspoon MSG—optional). 4. Custom, chopsticks and tea. 5. Method of preparation and cooking. 6. Cooking utensils. 7. Menu planning. 8. Recipes: Soup, meat, poultry, seafood, vegetables, bean curd (to fu), rice, noodles and Chinese steamed bread, eggs, desserts and snacks.

9. Chinese ingredients and seasonings. 10. Tables and charts: Measurements and abbreviations. sources of important nutrients, desirable weight for selected heights (for men and women, small, medium or large frame. Source: Metropolitan Life Insurance Co.), minimum daily requirement of calories, certain vitamins and minerals, calories, protein, fat and carbohydrate value of foods used.

11. Recipe index. 12. References. General index. Order forms.

The chapter on "Bean curd "(to fu)" (p. 191-217) contains 22 recipes, each with the English name in bold characters, and the Chinese name both romanized in pinyin and written in Chinese characters. The first of these is a recipe for homemade tofu made from 1 cup soy beans and a choice of five different coagulants. The 2nd recipe in this chapter is "Fried bean curd (to fu), plain fried (*You dou fu*).

Note: This is the earliest English-language document

seen (May 2012) that contains the term *You dou fu* (regardless of hyphenation).

For each recipe, the calories, protein, carbohydrates, and fat are calculated. Most recipes call for either “fresh bean curd” or “dry bean curd” (*dou fu gan*). A typical ingredient listing would be “1 lb bean curd, diced.”

Other recipes include: Those calling for soy bean sprouts (p. 40, 73, 185 {home grown}). Steamed fish with black beans (*Dou chi zheng yu*, with “3 T black beans {about one ounce}, p. 141). Lobster Cantonese style (with “1½ T black beans, minced,” p. 154). Wheat gluten (vegetable steaks) (*mian jing*, p. 186). Vegetarian’s delight (*Su shi jin*, with “2 oz. dried bean curd sticks [dried yuba sticks], soaked and cooked.” “Soak the dried bean curd sticks with 1 t [teaspoon] soda in hot water for 1 hour; drain. Add fresh cold water and bring to a boil. Drain and cut into 1 inch long pieces”) (p. 189-90). Red bean paste (*dou sha*) (p. 269). Many recipes are seasoned with soy sauce.

The section on “Chinese ingredients and seasonings” [glossary] includes: Bean curd or to fu, bean sprouts (the sprouts of mung beans or soy beans), black beans (“Fermented and highly seasoned black soy beans”), calcium sulfate, ginger root, hoisin sauce, monosodium glutamate, mushroom soy sauce (“A newly imported soy sauce from the People’s Republic of China... The flavor is excellent...”), oyster sauce (can be used like soy sauce but oyster sauce is saltier), sea weeds, sesame oil, soy sauce.

“About the author: Born and raised in Shanghai, Mainland China, Mrs. Liu completed her education at the National Taiwan University. It was there she met and married her husband, Stephen Liu, presently professor of Microbiology at Eastern Michigan University.

“After the birth of their eldest son, the Lius lived awhile in the United States, then moved to San Paulo, Brazil, where they remained for some years. The Chinese community in Sao Paulo was sizeable and affluent and their cuisine was quite popular. It was during this time that Mrs. Liu kindled her latent interest in cooking which ultimately led to the writing of this book.

“In 1965 the Lius returned to the United States and settled in the Ypsilanti-Ann Arbor area. Mrs. Liu further developed an interest in and took up the study of nutrition at the University of Michigan. She received her Masters degree of Nutrition in the School of Public Health in 1971.

“For some eight years Christine Liu has contributed her cooking and teaching talent to the Ann Arbor community by teaching Creative Chinese Cooking and Nutrition & Diet at the Continuing Education Department of Ann Arbor Public Schools...” The Lius have four children: Ted, Paul, Becky, and Peter. A photo shows Christine Liu. Address: M.P.H., P.O. Box 1332, Ann Arbor, Michigan 48104.

325. Okamoto, Susumu; Watanabe, Ken. 1976. Yuba [Yuba]. Tokyo: Tokyo Noho Daigaku Shokuhin Kagaku

Kenkyushitsu Dosokai. 159 p. [Jap]*

Address: Tokyo Nôkô Daigaku Kyôju [Prof., Tokyo Univ. of Agriculture and Industry].

326. Ortiz, Elisabeth Lambert; Endo, Mitsuko. 1976.

The complete book of Japanese cooking. Philadelphia, Pennsylvania: M. Evans and Co., Inc.; Dist. by Lippincott. viii + 250 p. Illust. by Marion Krupp. Index. 24 cm.

• **Summary:** A very interesting, well researched, and accurate Japanese cookbook. The illustrations are excellent. Each recipe has its Japanese name in large bold letters and a translation directly below in smaller letters. A hallmark of her writing is that she prefers to use the native language words and terms (e.g., *shôyu*) rather before giving her translation of them (e.g., soy sauce). This is helpful, since many of her translations have not withstood the test of time. In some cases, however, she fails to catch nuances or chooses to ignore them; e.g., *momen tôfu* should actually be *momen-dôfu*, and *kinugoshi tôfu* should actually be *kinugoshi-dôfu*. Unfortunately, she uses the term “bean paste” to refer to two very different foods: miso and *azuki-an* (see p. 214, 242). A large number of recipes call for various types of *tôfu* (“bean curd”) or *miso* (“bean paste”).

Seaweeds (p. 4): “The one single thing that distinguishes Japanese cooking is the use of seaweeds.” Kombu is used to make dashi. Nori and wakame are use in many ways.

“The soy bean plays a dominant role in the Japanese kitchen. It comes in the form of *shôyu* (soy sauce), *usukuchi shôyu* (light soy sauce), *momen tôfu* (bean curd), *kinugoshi tôfu* (silky bean curd), *yakidôfu* (broiled bean curd), *koyadôfu* (freeze-dried bean curd), red and white *miso* (bean paste), and so on. Despite their common origin, the products of this versatile bean manage to be very different.

Note: This is the earliest document seen (May 2012) that uses the word “silky” or the term “silky bean curd” to refer to *kinugoshi tôfu*.

Soy-related recipes include: Asparagus with malted bean paste (with “moromi miso” and “usukuchi shoyu,” p. 27). Dengaku (Bean curd with bean paste, p. 28). Stuffed lotus root (with white miso and mustard, p. 30). Noppei-jiru (vegetable and fried bean curd soup, with “1 *namaage* {type of fried bean curd}” or “2 pieces *aburaage* {fried bean curd}, p. 35). Kenchin-jiru (vegetable soup, with “1 *momen tôfu* {bean curd} weighing about 8 ounces,” and “4 tablespoons *miso* {bean paste}, p. 36). Clear soup (*suimono*) with okra and bean curd (p. 38). Clear soup with bean curd and wakame (p. 38). Satsuma-jiru (Miso soup with mixed vegetables, incl. red and white miso, p. 45). Miso soup with tofu and shungiku (p. 46). Miso soup with wakame (incl. red and white miso, p. 46). Miso soup with oysters and bean curd (p. 47). Sekihan (pink rice with azuki beans, p. 57). Miso udon (p. 63). Kitsune udon (noodles with *aburaage*, p. 67). Inari-zushi (fried bean curd stuffed with vinegared rice, p. 79). Sole with bean curd and mushrooms (p. 88).

Salmon steamed with bean curd (p. 90-91). Mackerel with red miso (p. 95). Fish marinated in miso (p. 102). Clams in miso, mustard, and vinegar sauce (p. 105). Oysters in vinegared miso sauce (p. 106). Satsuma-agé (with mackerel and bean curd cakes, p. 116-17). Oden (with “4 *ganmodoki* {fried bean curd balls}” and “1 *yakidôfu* {broiled bean curd}”, about 7 ounces drained weight,” p. 120-21). Kaki no dotenabe (oysters with bean paste, p. 124-25). Yudofu (simmered bean curd, p. 130). Sukiyaki (Sautéed beef and vegetables, with “2 *yakidôfu* {broiled bean curd}”, 134-35). Grilled beef with bean paste (p. 146). Nikumiso (chicken and vegetables pickled in bean paste, p. 159). Eggplant with bean paste (p. 163). Green beans with bean paste (p. 168). Daikon with fried tofu (p. 171). Turnips with bean paste (p. 173). Cucumber and soy bean sprouts with sesame seeds (p. 183). Spinach salad with tofu (p. 186).

A short section titled “Bean curd dishes” (p. 187) notes that “the soy bean is the youngest of the bean family, going back only to about 3500 B.C.” Beans in the Middle East go back to 7000 B.C. and in Mexico they go back to 5000 B.C. But the soy bean “makes up in versatility what it lacks in age.”

Recipes Fried bean curd with hijiki (with “2 pieces *aburaage* {fried bean curd},” p. 187). Sole with bean curd (188-89). Deep-fried bean curd with bonito flakes (p. 190). Dried bean curd with vegetables (with “4 *kôyadôfu* {dried bean curd}” and “2 teaspoons *usukuchi shôyu* {light soy sauce}, p. 191). Kûya-mushi (bean curd, chicken, and vegetable custard, p. 192-93). Simmered bean curd and chicken (p. 193). Takara bukuro (treasure bags with *aburaage*, p. 194). Tofu no shirô-ae (p. 195). Hiya-yakko (garnished cold bean curd, p. 196; *Kinugoshi tôfu* {silky bean curd} may be used). Chrysanthemum flower bean curd (p. 197). Nabeyaki Denraku [Dengaku?] (bean curd with white and red bean paste, p. 198). Pork with bean curd (p. 198-99). Ni-yakko (bean curd with dried bonito flakes, p. 199). Sokuseki misozuke (instant pickled vegetables with bean paste, p. 210). Koshi-an (red bean paste, with “1½ red *azuki* {adzuki} beans,” p. 213-15). New year dishes: Kuromame (black soy beans simmered in soy sauce and sugar, p. 220).

Glossary (excellent, p. 228-36)–Soy-related terms: *Aburaage*, *azuki* bean, *fu* (wheat gluten cake), *ganmodoki*, *kinako*, *kinugoshi tôfu*, *kôji*, *koshi-an* (powdered *azuki* paste), *kôyadôfu*, *kôridôfu*, *kuzuko*, *mirin*, *miso*, *misozuke*, *mochi*, *momen tôfu*, *moromi miso*, *namaage*, *nattô*, *shôyu*, *teriyaki* (“a technique of glazing foods in a soy sauce and *mirin* mixture either in a skillet or on a grill”), *tôfu* (“soy bean curd, usually refers to *momen tôfu*”), *umeboshi*, *usukuchi shôyu*, *yakidôfu*, *yuba*. Address: Both: New York.

327. Wang, H.L.; Mustakas, G.C.; Wolf, W.J.; Wang, L.C.; Hesseltine, C.W.; Bagley, E.B. 1976. An inventory of information on the utilization of unprocessed and simply processed soybeans as human food. Peoria, Illinois: USDA

Northern Regional Research Center, Interdepartmental Report. AID AG/TAB-225-12-76. 197 p. AID contract report. Undated. No index. 27 cm. Spiral bound. [65 ref]

• **Summary:** Contents: Introduction. Home and village traditional soybean foods by country. 1. Soybean food uses and production in Asia. Soaking dry soybeans. In China: *Tou chiang* (soybean milk; preparation, ways of serving), *tou fu* (soybean curd; *yen-lu* is the Chinese name for *nigari*), *tou fu nao* (soft curd), *tou fu kan* (dry / firm bean curd), *chien chang* (pressed tofu sheets), *yu tou fu* (fried *tou fu*), *tung tou fu* (frozen *tou fu*), *tou fu pi* (protein-lipid film; *yuba*), *huang tou ya* (yellow bean sprout or soybean sprout), *mao tou* (hairy bean, green soybean, or immature soybean), dry soybeans (roasting and frying, stewing and boiling), roasted soybean flour. Fermented soybean foods. Production and consumption of soybeans (China and Taiwan).

Japan: *Tofu* (soybean curd), *kinugoshi tofu*, processed *tofu* products (*aburage* or *age*, *nama-age* and *ganmo*), *kori tofu* (dried-frozen *tofu*), *yaki tofu* (grill *tofu*), *yuba* (protein-lipid film), soybean milk, *gô* (ground soybean mash), *daizu no moyashi* (soybean sprouts), *edamame* (green vegetable soybeans), whole soybeans, *kinako*. Fermented soybean foods: Production and consumption.

Korea: *Tubu* (soybean curd), soybean sprouts, whole soybeans (green soybeans, parched or roasted soybeans, boiled soybeans), soybean flour, soysauce, bean paste [Korean soybean miso], *natto* (no Korean name is given), production and consumption of soybeans.

Indonesia: *Tahu* or *tahoo* (soybean curd), *bubuk kedele* (soybean powder), *tempe kedele*, *tempe gembus* [the name in Central and East Java for *okara tempeh*], *oncom tahu* [the name in West Java for *okara onchom*], other soybean products (soybean sprouts, green soybeans, roasted and boiled soybeans, *kecap* or soysauce, *tauco* or bean paste [miso]), food mixtures (*Saridele*, *Tempe-fish-rice* or *TFR*, *Soy-rice baby food*, soybean residue [*okara*]-fish-rice), production and consumption of soybeans.

Thailand. Philippines: Soybean sprouts, soybean coffee, soybean cake (made from equal amounts of soybean flour and wheat flour), soybean milk, *tou fu* and processed *tou fu* products, production and consumption. Burma. India. Malaysia. Nepal. Singapore. Sri Lanka (Ceylon). Vietnam. West Asia [Middle East; Iran and Turkey]. References–Soybean food uses in Asia.

2. Soybean food uses and production in Africa. Ethiopia: *Injera*, *wots* and *allichas*, *kitta*, *dabbo*, *dabokolo*, porridge. Kenya. Morocco. Nigeria: Whole soybeans, soybean paste, corn-soy mixtures (soy-ogi). Tanzania. Uganda. Production. References–Soybean food uses in Africa.

3. Soybean food uses and production in Europe [both Eastern and Western]. 4. Soybean food uses and production in Latin America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guyana. Paraguay. Peru. Uruguay. Venezuela (fried *arepas* with textured soy). Mexico: New

village process, commercial developments of soy-based food products, Gilford Harrison, Ruth Orellana, Seguras Social. Honduras. Costa Rica. Panama. Dominican Republic. Jamaica. Haiti. Trinidad. References—Soybean food uses in Latin America.

5. Soybean food uses and production in North America. United States: Oriental populations, vegetarian communes, The Farm in Tennessee. Canada. References—Soybean food uses in North America. 6. Soybean food uses in Oceania. Australia. New Zealand. 7. Summary of soybean food uses. Traditional soybean foods: Soybean milk, soybean curd and processed soybean curd products, protein-lipid film, soybean sprouts, tempe (tempeh), green soybeans, boiled soybeans, roasted soybeans, soybean flour, soysauce, fermented soybean paste, fermented whole soybeans [Toushih, hamanatto], natto, fermented soybean curd. Experimental soybean foods: Whole soybean foods, soybean paste, soy flour, soy beverage. Production and consumption.

8. Recent simple soybean processes, other than traditional. Simple village process for processing whole soybeans: Equipment, process, sanitation requirements, quality of product, evaluation of product in formulas and procedures for family and institutional use in developing countries. NRRC village process. Foods from whole soybeans developed at the University of Illinois (drum dried flakes, canned and homecooked soybeans, soy beverages and beverage products, spreads, snacks).

Ways of cooking and serving soybeans in the American diet. 9. Industrial processes. Industrial production and selling prices of edible soybean protein products. 10. Barriers to acceptability and utilization of soybeans in food and research recommendations: Availability. Cultural and social factors. Texture. Flavor. Nutrition and food safety. Technology development. Technology transfer. Research recommendations [concerning each of the above barriers].

Concerning Morocco: Cereal-soy blends have been used extensively in Morocco; in fiscal year 1974 some 14.7 million lb were shipped to Morocco. Mmbaga (1975) reported that soy flour is being used in making porridge, with 1 part soy flour to 3 parts maize / corn flour.

Tables show: (1) Soybean production and imports in Taiwan, 1962-1975 (tonnes = metric tons, p. 33). Production rose from a 53,000 tonnes in 1962 to a peak of 75,200 tonnes in 1967, then fell to 61,900 tonnes in 1975. Imports skyrocketed from 62,400 tonnes in 1962 to a record 827,300 tonnes in 1975. (2) Consumption of soybean foods in Taiwan, 1964-1974 (kg/capita/year, p. 34). Total soybean foods not including tofu rose from 1.08 kg in 1964 to a peak of 2.61 kg in 1972 then fell to 1.99 kg in 1974. Consumption of tofu (80% water) rose from 18.75 kg in 1964 to a peak of 33.89 kg in 1972, then fell to 32.04 kg in 1974. (3) Supply and disposition of soybeans in Japan, 1971-1974 (p. 49). Total supply is beginning stocks, plus domestic production, and imports. Total disposition is crushing, plus traditional

foods and feed. In 1974 imports accounted for 87.5% of the supply, and crushing accounted for 71.0% of the disposition. (4) Whole soybeans used in the production of traditional foods in Japan, 1970-74 (tonnes / metric tons, p. 50). Tofu and others rose from 508,000 in 1970 to 539,000 in 1974. Miso rose from 177,000 in 1970 to 192,000 in 1974. Shoyu rose from 13,000 in 1970 to 14,000 in 1974. (5) Defatted soybean meal used in the production of traditional foods in Japan, 1970-74 (tonnes / metric tons, p. 51). Shoyu rose from 163,000 in 1970 to 176,000 in 1974. Tofu and others was constant at 130,000 from 1971 to 1973. Miso decreased from 4,000 in 1970 to 2,000 in 1974. (6) Production of traditional soybean foods in Japan, 1970-74 (tonnes / metric tons, p. 52). Tofu and others rose from 1,867,800 in 1970 to 2,264,900 in 1973. Shoyu rose from 1,334,1000 in 1970 to 1,455,800 in 1974. Miso rose from 552,200 in 1970 to 587,200 in 1974. (7) Production and food use of beans [various types] and consumption of some soybean products in Korea, 1964-1967 (p. 56-57). In 1967 consumption (in tonnes / metric tons) was: Bean curd 290,000. Bean sprouts 270,000. Bean sauce 69,700. Bean paste 27,700. Total: 11.6 kg per capita per year. (8) Soybean production in Indonesia, 1960-1974 (p. 65). It rose from 442,862 tons in 1960 to 550,000 tons in 1974. (9) Consumption of soybeans in various parts of Indonesia in 1970 (p. 66). (10) Production of soybean foods in the province of Central Java, 1968-1972 (tons, p. 67). Kecap rose from 914,695 in 1968 to 1,524,000 in 1972. Tahu decreased from 18,570 in 1978 to 17,000 in 1972. Tempe rose from 506 in 1968 to 39,000 in 1972. (11) Area planted to soybeans and total soybean production in Thailand, 1964-1974 (p. 70). Area rose from 213,000 rais (6.25 rais = 1 ha) in 1964 to 1,016,000 rais in 1974. Production (in metric tons) rose from 31,300 in 1964 to 252,400 in 1974. (12) Utilization of soybeans by soybean-consuming countries, 1964-66 (based on FAO 1971 Food Balance Sheets, 1964-66 average, p. 150). The countries leading in per capita consumption (kg/person/year) are: China (PRC) 6.7. Japan 5.1. Korea(s) 5.0. Singapore 4.3. Indonesia 2.8. Malaysia 2.6. Taiwan (ROC) 1.1. (13) Amounts of cereal-soy blends distributed under Title II, Public Law 480 in fiscal year 1974 (p. 152-155). (14) U.S. exports of full-fat soy flour, 1974-75 (p. 156).

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word “tubu” to refer to Korean-style tofu. Address: Northern Regional Research Center, Agricultural Research Service, Department of Agriculture, Peoria, Illinois 61604.

328. Winarno, F.G.; Hardjo, S.; Rumawas, F. 1976. The present status of soybean in Indonesia. Bogor, Indonesia: FATEMETA, Bogor Agriculture University. xxiii + 128 p. 29 cm. [7 ref]

• **Summary:** The best and most comprehensive survey up to this time on the subject, it was done as part of the 1974

Industrial Census of the Central Bureau of Statistics. Full of valuable statistics and tables. Contents. Preface. Summary. List of tables. List of figures. I. Introduction. II. Objectives and survey methods: A. Objectives. B. Survey methods. III. Cultivation, product handling and protection: A. Botany of the soybean. B. Varieties. C. Growth requirements. D. Agronomy of soybean. E. Crop Management. F. Harvesting and product handling.

IV. Production: A. Harvested acreage, production and average soybean yield in Indonesia. B. Center production areas. C. Harvested acreage of soybean versus other food crops. D. Factors affecting soybean production. V. Farm management and soybean marketing in Indonesia: A. Farm management. B. Marketing of soybean.

VI. Soybean utilization (p. 52): A. Soybean products: Introduction, yuba, sere (from Bali: cooked whole soybeans, mixed with onions, hot pepper, turmeric, salt, and coconut presscake; molded into patties, sun dried, then deep fried), soybean milk, tofu (coagulated with *biang* or *sioko* {calcium sulphate}), soybean sprouts (*tauge*), soybean powder (soybeans that have been cooked, dried, dehulled, and pounded), soybean mixtures, kecap (Indonesian soy sauce), oncom (fermented soybean product, red or black), tauco (Indonesian-style miso), tempe. B. Soybean utilization: Utilization by farmer (in each of 6 provinces and total), utilization by processor (tempe, tofu, kecap, miscellaneous), census conducted by Central Bureau of Statistics, conversion factor for soybean products. C. Consumption of soybean and its processed products (by province). D. Other components. Appendixes.

Tables in body of text: (1) Brief description of recommended soybean varieties. (2-3). Insecticides used against *Agromyza* and *Phaedonia inclusa*. (4) Soybean harvest seasons in Indonesia (major harvest months, by province). (5-8) Harvested acreage, production, and average soybean yield during 1950-73, 1960-74, and in Java-Madura (1967-71, 1972, 1973, and 1974). (9) Soybean acreage in Java-Madura. (10) Major production areas in Java-Madura, and average 5-year yield, 1965-69. (11) Harvested acreage of soybeans vs. other crops in Java-Madura, 1971-72. (12) Production cost and value per hectare of soybeans. (13) Major trading and harvest months. (14-15) Percentage of farmer's share and marketing cost of the trade price in various provinces. (16) Percentage of farmer's share of the trade price. (17) Soybean utilization by farmers, 1975-76. (18-21) Production/consumption of tempeh, tofu, kecap, tauco, taugé, yuba, and sere.

(22-29) Raw material utilized by small-scale processors and by soybean home industries in Java and Jakarta. (30-31) Value of raw material and end products of small-scale industries over 3- and 12-month periods. (32) Conversion factor of soybean products to raw material. (33-36) Average daily consumption per capita of soybean and its process products at villages in Lampung, Yogyakarta, East and West

Java, and in 4 other provinces. Address: FATEMETA, Bogor Agricultural Univ., Indonesia.

329. Kagawa, Ryo. 1977. Shokuhin seibunhyô [Food composition tables for Japan]. Tokyo: Joshi Eiyo Daigaku Shuppan-bu. 145 p. Jan. 15 x 22 cm. [Jap]

• **Summary:** For tables of information on soybeans and soyfoods, see p. 21-22. Includes Kinako, soymilk, regular tofu, kinugoshi tofu, fukuro-iri tofu, yaki-dofu, abura-age, namaage, ganmodoki, kori-dofu, yuba, okara, natto, hamanatto, miso, red miso, light yellow salty miso, red salty miso, soybean miso, powdered miso. Address: Japan.

330. Kolb, H. 1977. Herkoemmliche Verfahren zur Nutzung von Soja im asiatischen Raum [Traditional processes for using soya in Asia]. *Alimenta* 17(2):41-45. March/April. [35 ref. Ger]

• **Summary:** Discusses each of the following foods briefly and gives sources of further information: Kinako (roasted soy flour), soymilk, yuba, tofu, kori tofu (dried-frozen tofu), aburaage, namaage, kinugoshi tofu, sufu, soy cheese (Western style), soy yogurt, ganmodoki, natto, Hamanatto, koji, tempeh, miso, tao-tjo [Indonesian-style miso], kochujang, shoyu, and ketjap.

Note: This is the earliest German-language document seen (Oct. 2011) that uses the word "sufu" to refer to fermented tofu. Address: Institut fuer Lebensmitteltechnologie, Frucht- und Gemuesetechnologie, Technische Universitaet Berlin, Koenigin-Luise-Strasse 27, D-1000 Berlin 33, West Germany.

331. Shurtleff, William; Aoyagi, Akiko. 1977. Tofu & soymilk production: The Book of Tofu, volume II. Lafayette, California: New-Age Foods Study Center. 128 p. Aug. 1. Illust. by Akiko Aoyagi Shurtleff. No index. 28 cm.

• **Summary:** A rough photocopied manuscript with a yellow cover, created in response to a letters from many people requesting information on how to start a tofu shop. Contents: 1. So you want to start a tofu shop or soy dairy? 2. Setting up shop; The community shop, the traditional shop, the steam-cooker shop, the pressure cooker shop, the soy dairy, the modern factory. 3. Ingredients. 4. Scientific data concerning the tofu-making process. 5. Tofu. 6. Firm tofu. 7. Using okara and whey. 8. Deep-fried tofu: Cutlets, burgers, and pouches. 9. Soymilk. 10. Soymilk ice cream, yogurt, kefir, mayonnaise, and cheese. 11. Silken tofu & soft tofu (Silken tofu is made from concentrated soymilk). 12. Lactone silken tofu. 13. Grilled tofu. 14. Wine-fermented tofu. 15. Dried-frozen tofu. 16. Yuba.

Appendix A: People and institutions connected with tofu & soymilk production. B: Sketches of tofu and yuba shops in Japan. C: So you want to study tofu in Japan? D: Table of equivalents.

Note 1. This is the earliest English-language document

seen (March 2010) that uses the term “silken tofu” to refer to Japanese *kinugoshi* tofu.

Note 2. This is the earliest English-language document seen (Oct. 2011) that uses the term “wine-fermented tofu.” Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549; 278-28 Higashi Oizumi, Nerima-ku, Tokyo 177, Japan.

332. Shibata, Atsuko; Matsumoto, Shinji; Ohara, Tetsujirô. 1977-1978. Yuba seizô-chû ni okeru seisei yuba no kagaku-teki sosei narabini shishitsu ni tsuite [Chemical composition and fat content of yuba films during production of yuba]. *Tokyo Nogyo Daigaku Nogaku Shuho (J. of Agricultural Science of the Tokyo Agricultural College)* 22(1-4):180. [Jap]*

333. Ikuta, Midori; Ishikawa, Keiko; Saito, Ritsuko; Okamoto, Susumu. 1977. Yuba tori tekusuchii shokuhin seizô no kokoromi [An attempt to produce textured foods from yuba]. *Showa Joshi Daigaku Gakuen* No. 52. [Jap]*

334. Li, C.F.; Chen, W.L.; Huang, F.M.; Chen, R.H.; Hsiu, M.C. 1977. [A study on manufacturing of protein-lipid film foods]. *Food Industry Research and Development Institute (Taiwan), Research Report* No. 107. [Chi]*

• **Summary:** A continuous film-forming method for making yuba was developed by FIRDI. Address: Hsinchu, Taiwan.

335. Anderson, Eugene N., Jr.; Anderson, Marja L. 1977. [Food in] Modern China: South. In: K.C. Chang, ed. 1977. *Food in Chinese Culture*. New Haven, CT, and London: Yale Univ. Press. 429 p. See p. 317-382.

• **Summary:** Page 326 states: Soybeans—the fifth of the classic Five Staples (or Five Grains)—are usually the most important, although other legumes make a surprisingly good showing in south China, no doubt because soybeans grow better in the north. The soybean “produces more protein per acre and per pound than any other common humanly edible crop, plant, or animal. This has caused them to become more important than any animal food as a protein provider in China. The Chinese have long recognized their similarity to animal products and, indeed, have built up a huge cluster of imitation-meat foods (probably developed originally by, and certainly now associated with, vegetarian Buddhists). The Chinese lack of interest in dairy products is almost certainly, in part, a result of the fact that the soybean provides the same sorts of nutrition more economically—though a desire to differentiate themselves from the border nomads and to be independent of them in food economy must also be taken seriously as an explanation. (It is the classic Chinese explanation of the phenomenon but has been dismissed by those moderns who believe that all traditional explanations must necessarily be wrong.)

“Further discourse on the soybean belongs properly in

the following section on food processing, for the soybean is used neither in its raw state nor, usually, in a simple boiled or roasted form. There are good reasons for this. The soybean, being so nutritious and succulent, has been faced with intense natural selection pressure by seed-eating insects and other animals; surviving soybean strains contain whole galleries of poisons and other unfortunate chemicals, which protect the seeds against destruction but make them dangerous food in the uncooked and unprotected state (Committee on Food Protection 1973). Simply prepared soybeans are not very digestible, since heat bonds some of the nutrients into hard-to-digest form in the intact bean. Thus almost all soybeans consumed in China are fermented, ground into flour, and then processed, sprouted, or otherwise milled.”

“The soybean is so famous that one is surprised to discover from Buck that the broad bean outranks it in some parts of south China.” However in genetically susceptible individuals, *Vicia faba* produces favism, a condition characterized by acute anemia and other unpleasant symptoms. Other important sources of protein are black soybeans (a variety of soybean mentioned by Buck) and sprouts from mung beans and soybeans (*tou ya*). Bean sprouts bridge the gap between grains and vegetables (*ts'ai*) (p. 326-27).

“A huge bowl of rice, a good mass of bean curd, and a dish of cabbages—fresh in season, otherwise pickled—is the classic fare of the everyday south Chinese world.”

“The New World vegetables stand out as a special class because of their common and recent origin in China and their extreme importance. The white and sweet potatoes have become staples, as has corn. In addition to these, the peanut (*Arachis hypogaea*) has become the most important oilseed through much of south China, as well as a much used food” (p. 328). The peanut came from South America. Today, peanuts have become more important in areas where they are grown than rapeseed. Peanut and rapeseed oils are polyunsaturated and contain plenty of linoleic acid, a dietary requirement (p. 333, 343, 348). Mushrooms and their relatives are widely used in vegetarian dishes (p. 332).

The section on food processing (p. 337-41) notes that tragic practice of polishing rice, which removes most of the nutrients including fiber. There are many questions about the origins of pasta. Egg noodles probably originated in China. Italian spaghetti is similar to Chinese *mien* and ravioli to *chiao-tzu*, but they may have existed elsewhere before Marco Polo brought them to Italy from China. The technology of soybean process is too complex to discuss except briefly in this chapter. Most important is the production of bean curd or *tou-fu* (Cantonese *tau-fu*, Hokkien *tau-hu*). Hokkien cooks prefer a drier, firmer bean curd. Bean curd is often sold fried. The skin resulting from boiling soymilk [yuba] is skimmed off, dried, and widely used. “Other closely related processes produce the range of imitation meats developed

by vegetarians, specifically Mahayana Buddhists. Credible imitations... are made for chicken, abalone, and other white meats, and even beef and pork. The West has picked up the idea and developed it much further, climaxing in the production of textured vegetable protein (TVP), but has—characteristically!—ignored the problem of making the result taste good. The ideal in the West seems to be to make it tasteless” (p. 339).

Concerning fish farming (p. 334-35): “Some fish, however, a pond-reared. Those that have been effectively domesticated are carps. These have several advantages: they produce vast amounts of protein per acre; they do not have to be specially fed since they eat algae and weedy grass and small animals of the ponds and pond fringes; they can live in foul water, and thus in stagnant ponds and market fish barrels; they are efficient converters, putting a large percentage of their feed into growth; and relative to other fish, they are easy to breed in captivity. The first fish farmed in the world were probably the Chinese carps.” However, no mention is made of soybeans being fed to the fish. Address: 1. Assoc. Prof. of Anthropology, Univ. of California at Riverside; 2. Riverside, California.

336. Ang, H.G.; Kwik, W.L.; Tan, S.F.; Theng, C.Y. 1978. Development of traditional and new soy products using defatted meal. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 53-58.

• **Summary:** Contents: Abstracts. Introduction: Non-fermented products (soymilk, soybean curd, yuba), fermented products (soy sauce, soy cheese, tempeh), others (soybean sprouts, whole bean), soymilk and soymilk powder from defatted soymeal. Results and discussions: Preparation of soymilk powder. Conclusion. Address: Dep. of Scientific Services, Singapore.

337. Watanabe, Tokuji. 1978. Traditional non-fermented soybean foods in Japan. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 35-38. [7 ref]

• **Summary:** Contents: Introduction. Tofu and deep fried tofu. Kori-tofu. Miscellaneous. Conclusion.

In 1960 soyfoods supplied 15.6% of the daily per capita protein supply of 69.4 gm. In 1975 they supplied 12.7% of the 78.8 gm. The leading sources in 1975 were (1) fish and seaweed, (2) rice, (3) soyfoods, (4) wheat. Address: Kyoritsu Woman's Univ., Hitotsubashi 2-2-1, Chiyoda-ku, Tokyo, Japan.

338. Yu, Swee Yean; Ch'ng, Guan Choo. 1978. Soy bean foods in Malaysia. In: American Soybean Assoc., ed. 1978. International Soya Protein Food Conference, Proceedings. Hudson, Iowa: ASA. 136 p. See p. 48-52. [16 ref]

• **Summary:** Contents: Introduction. Fermented soya bean products: Soya sauce (manufacture of ‘thin’ (dilute) soya sauce, manufacture of ‘thick’ (viscous) soya sauce, microbiology of Malaysian soya sauce, stability of the product), tempeh, tau cheo (thick paste-like sauce), tao si (fermented black soybeans). Non-fermented soya bean products: Soya bean sprouts, tofu (semi-firm curd), tofu fah (soft curd), tow kwa (firm curd), tin chok (dried, flat sheets [yuba]), fu chok (dried, rope-like [dried yuba sticks]), tofu pok (deep-fried curd [tofu cubes]), chak tie (vegetarian [yuba] sausage), soya bean milk (tau cheong), meat analogues (soya flour is shaped into desired forms by hand). Nutritional data. Conclusion. Address: Universiti Pertanian Malaysia, Serdang.

339. Okamoto, Susumu. 1978. Factors affecting protein film formation. *Cereal Foods World* 23(5):256-62. May. [10 ref]

• **Summary:** A very interesting and original technical paper about yuba which contains 55% protein and 25% lipids. For example: Electron microscope observations show that yuba consists of minute oil droplets, less than 5 microns in diameter, distributed irregularly throughout a protein membrane (Fig. 1). Address: Showa Women's Univ., Taishido, Setagaya-ku, Tokyo.

340. Shurtleff, William. 1978. Protein source for the future. *PHP (Japan)*. Oct. p. 8-18, 79-82. Illust. 18 cm.

• **Summary:** Contents: Introduction. Ten reasons why soybeans will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost source of protein in almost every country of the world. 3. High nutritional value. 4. Time tested for over 2,000 years. 5. Remarkably versatile. 6. Appropriate technology (“Traditional soyfoods can be produced in cottage industries”). 7. New dairylike products. 8. Soybeans are hardy and adaptive. 9. Free nitrogen fertilizer from nodules on soybean plants. 10. Great productivity potential.

Discusses new patterns of soy protein utilization, with specific reference and descriptions of tofu, soymilk, tempeh (“Indonesia's most popular soyfood”), miso, shoyu, whole dry soybeans, roasted soybeans, fresh green soybeans, soy flour, kinako, soy sprouts, and textured soy protein (TVP), yuba, and natto. Concludes with a discussion of new developments in the Western world. Address: New-Age Foods Study Center, P.O. Box 234 (951½ Mountain View Dr.), Lafayette, California 94549. Phone: 415-283-2991.

341. Kan, Lilah. 1978. Introducing Chinese casserole cookery. New York, NY: Workman Publishing. 288 p. Index. 24 cm. Edited by Helen Witty.

• **Summary:** An engaging writer with outstanding descriptions of ingredients. The section titled “Ingredients” (p. 41-61) includes: Bean curd (“this means fresh bean curd (or bean cake),... Chinese call it *do fu*; Japanese say *tofu*.”

Bean curd cheese, red [red fermented tofu] (“In Cantonese it is called *nom yee*”). Bean curd cheese, white [fermented tofu] (“In Cantonese it is called *foo yee*”). Bean curd, fried (“Called *doe gawk* in Cantonese,” it is made of fresh bean curd that has been cubed and deep fried. It “resembles tiny brown wrinkled pillows that seem almost hollow”).

Bean curd skin, dried [yuba] (This is made by heating soybean milk and “is usually sold in ½-pound packages. The skins measure about 1½ by 4 inches and are less than 1/8 inch thick.” “They look like thin pieces of light beige lacquered wood” and should be soaked in warm water until pliable (about ½ hour). Called *teem jok* in Cantonese).

Bean curd sticks [dried yuba sticks]. (“These sticks are made from soybean milk film that has been dried, rolled to ½-inch thickness, and bent into long pieces with a hairpin turn.” Called *foo jook* in Cantonese. They “are light beige in color and have a wrinkled, lacquered look. They come in ½-pound and 1-pound packages”).

“Black beans, salted or fermented [fermented black soybeans]: These beans serve as a condiment. They have a very pungent odor that could scare away the timid, but do not be timid. They are almost always used in combination with garlic—a marriage made in heaven—and are delicious. The beans are interchangeably called ‘fermented black beans’ and ‘salted black beans’”).

Brown bean sauce, ground (*meen see*).

Vegetarian steak (usually made from soybeans or gluten. It is sold in cans. She likes to use this meat substitute with other ingredients in Buddha’s Delight Vegetarian Casserole, a dish often served on Chinese New Year’s Eve. “I use the kind that is labeled *Chai Pow Yu* which translates as ‘mock abalone’ or ‘vegetarian abalone’”).

Soy related recipes include: Beef chunks in black bean, garlic, and egg sauce (with “3 tablespoons salted black beans, rinsed in water, drained, and mashed,” p. 68-69).

Chicken and peppers with black bean, garlic, and egg sauce (with “2 tablespoons salted black beans, rinsed in water, drained, and mashed,” p. 118-19).

Minced pork and vegetables with black bean and garlic sauce (with “4 teaspoons salted black beans, rinsed in water, drained, and mashed,” p. 146-47).

Spare ribs in black bean, garlic, and egg sauce (with “3 tablespoons salted black beans, rinsed in water, drained, and mashed,” p. 158-59).

Spare ribs in red bean curd cheese (with “½ square (about 2 tablespoons) red bean curd cheese,” p. 162-63).

Lamb and bean curd sticks with black bean and garlic sauce (with “4 bean curd sticks (8 lengths), drained” and “3 tablespoons salted black beans, rinsed in water, drained, and mashed,” p. 182-83).

Clams with black bean and garlic sauce (with “1½ tablespoons salted black beans, rinsed in water, drained, and mashed,” p. 192-93).

342. McGuinness, Liz. 1978. Holiday feasts for those from far away. *Los Angeles Times*. Dec. 7. p. OC_B1.

• **Summary:** The section titled “Chinese” notes that Chinese New Year, the big Chinese holiday, is celebrated around the end of January. Most Chinese families hold a gathering and share a meal at this time. “A traditional soup might be served with ingredients like red dates, bean curd sticks [dried yuba sticks], dried mushrooms, dried lotus root slices and dried oysters.”

Far East Co. in Los Angeles carries Chinese specialty foods. Address: Times staff writer.

343. Hagler, Louise. ed. 1978. The Farm vegetarian cookbook. Revised ed. Summertown, Tennessee: The Book Publishing Co. 223 p. Illust. Index. 22 cm.

• **Summary:** An expanded and extensively revised version of its pioneering and very creative and influential predecessor. There are excellent expanded sections on gluten (p. 76-81), tempeh and tempeh starter (p. 82-93), miso (p. 93), soymilk (p. 95-101), Ice Bean (soy ice cream, including recipes for 5 flavors), Frogurt (soymilk frozen yogurt, p. 107), soy yogurt (p. 108-13 including a non-fermented cheese made by draining soy yogurt curds in a cotton bag; from this “yogurt cheese” are made soy-based cottage cheese, sour cream, cream cheese, and cheesecake), tofu (p. 114-41), yuba (142-43), soy coffee, soy nuts, granola, and Soysage (p. 144-47), soy flour (p. 148-53), sprouts (incl. alfalfa, mung beans, and soybeans, p. 154-57). Address: Summertown, Tennessee.

344. Kawakami, Kozo; Shinoda, Osamu; Hirata, Mario; Matsushita, Sachiko; Yoshikawa, Seiji. ed. 1978. *Ryōri bunken kaidai* [Bibliography of ancient documents on Japanese foods, each extensively annotated]. Tokyo: Shibata Shoten. 298 p. Illust. 22 cm. Discoveries in Food Culture series, Vol. 5. [304 ref. Jap]

• **Summary:** Part I of this work lists 200 old Japanese food/cookery books, each published prior to 1868, in alphabetical order. This book is exceptionally well researched and valuable. The author was born in 1928. The name of each is written in Chinese characters (*kanji*) with *furigana* attached to show how to pronounce them. (Unfortunately, no pronunciation help is given with authors’ names.) The publication date and a 1-page summary of the contents is given. These 200 books were selected from well over 500 candidates based on 5 rules: They are not about medicinal uses, crop cultivation, or industrial food production (including oil extraction, flour milling, etc.); in the fields of confectionery and pickles, only the most famous books are included; some exceptions to the first four rules were made where inclusion was deemed of special interest to the reader.

Part II is 104 related books about food and cooking, listed chronologically.

Appendix 1 explains how to do research using old documents. Appendix 2 is a chronology of the 200 books

from the year 1200 to the present. Appendix 3 is an index to the books in Part II, listed alphabetically by title. Note: There is no index in this book that allows one to see on which pages or in which books a certain food (such as natto) is mentioned. Address: Nōgaku Hakase, Shusai, Ryori Genten Kaidai, Japan.

345. Lai, H.M. 1978. Island of immortals: Chinese immigrants and the Angel Island Immigration Station. *California History* 57(1):88-103. See p. 96, 102. [59 ref]
 • **Summary:** This issue (spring 1978) is a special issue titled "The Chinese in California."

Fermented bean curd is mentioned in two footnotes on page 102; both refer back to page 96.

Footnote 40: Breakfast may include "dried bean sticks" [dried yuba sticks]. Dinner includes a main dish "plus one small dish. "The small dish could be salt fish, preserved olive, fermented bean curd, sweet pickles or plum sauce."

Note 1. Footnote 40 refers to a menu listed in *Chinese World*, 28 Feb. 1910 for three meals served in one day at Angel Island. Complaints about food were common so the government agreed to have the food provided by private concessionaires—the first one being a firm run by a Chinese man, Fong Wing (Kuang Zhujing) and his white partner. The dinner meal consisted of a main course plus one small dish—as described above.

Footnote 42. "... pork and mustard greens soup, fermented bean curd (Tues.); pork with greens, salt fish (Wed.); pork with dried bean sticks, plum sauce (Thurs.); pork and winter melon soup, bean curd with soy sauce (Fri.);..."

Note 2. Footnote 42 mentions another menu provided by the white concessionaire who won the next bid. A similar menu was offered which also included fermented bean curd, plus dried yuba sticks and tofu. Address: Vice president and past president of the Chinese Historical Society of America in San Francisco and an instructor in Asian American Studies at the Univ. of California, Berkeley.

346. Passmore, Jacki. 1978. All Asian cookbook: Japan, China, Korea, India, Malaysia, Singapore, Indonesia, Laos, Thailand, Burma, Cambodia, Vietnam, Philippines, Sri Lanka. Secaucus, New Jersey: Chartwell Books. 224 p. Illust. (color photos). Index. 29 cm.

• **Summary:** Soy-related recipes: Vietnam: Soya sauce pork (Thit bho to, p. 71, with light soya sauce). Malaysia and Singapore: Mixed vegetables with salted black beans [fermented black soybeans] (the black beans are crushed, p. 103). Stuffed beancurd, peppers and black mushrooms (with 6 pieces hard beancurd, each 5 cm {2 inches} square, p. 103). Fried beancurd squares (Taukwa goreng, with 6 squares hard beancurd and dark soya sauce, p. 103). Chinese soup with pickled vegetables, beancurd and mixed meat (with 2 squares soft beancurd, p. 106).

Indonesia: Sweet pork (Babi kecap, with sweet soya sauce {kecap manis}, p. 118). Soya sauce sambal (with dark soya sauce, p. 124). Mixed vegetable soup (Sayur campur, with 2 cakes soft beancurd, p. 126).

Philippines: Lumpia (with dark soy sauce in the sauce, p. 136).

China: Fish with hot bean sauce (with hot bean paste or hoisin sauce, p. 146). Lobster with salted black beans and chili (p. 11). Stewed spare ribs with salted black beans (p. 159). Mixed green vegetables with salted black beans (p. 163). Hotpot of vegetables and beancurd (with 8 squares soft beancurd, p. 164). Ma po beancurd (with 6 squares soft beancurd, p. 166). Cold beancurd salad (with 6 squares soft beancurd, p. 166). Fried beancurd (with 8 squares soft beancurd, p. 166). Sharks fin soup (with dark soya sauce, p. 167). Wonton soup (with light soya sauce, p. 168).

Japan: Soya bean paste (miso, homemade from canned chick peas + soya sauce!, p. 178). Tuna glazed with miso (Gyoden, with dark miso paste, p. 180). Sukiyaki (with 3 squares soft bean curd, p. 187). Braised pork and leek rolls (Teriyaki, with light soya sauce, p. 188). Fried eggplant in miso sauce (with white miso paste, 194). Miso soup (miso shiru, with diced bean curd and white miso paste, p. 195).

The Glossary includes: Bean paste, hot (made from chilies and soya beans, La do ban jiang, Chinese). Bean paste, salted (also known as yellow bean paste, made from soya beans, Taucheo, Chinese). Bean paste, sweet (either tien mien jiang or do ban jiang, made from soya beans, Chinese. See also hoisin sauce). Beancurd. Beancurd 'cheese,' fermented (in brine with chilies, wine, and spices, Dofu ru, Chinese). Beancurd skin [yuba] (yellowish, almost transparent sheets). Beans, salted, black: See Salted black beans. Kecap manis (Sweet, slightly thick soya sauce, Indonesian, Malaysian). Miso (Japanese). Soya sauce (light, dark, and sweet). Tahu (Malaysian): See beancurd. Taucheo (Chinese): See Bean Paste, salted. Taukwa (Chinese, hard beancurd). Tien mien jiang (Chinese): See Bean paste, sweet. Tofu (Japanese): See beancurd. Vinegar and soya sauce dip: "A sharp-flavoured Korean accompaniment made by blending 3/4 cup light soya sauce, 3 tablespoons white wine vinegar, 3 tablespoons ground sesame seeds and 2 teaspoons finely chopped spring onions. Serve in individual sauce bowls." Yellow bean paste: See Bean paste, salted.

Note: This is the earliest document seen (Feb. 2011) that contains Vietnamese recipes that use soy as an ingredient. Address: Australian-born food writer.

347. Perkins, David W. ed. 1978. Hong Kong and China Gas Chinese cookbook. Hong Kong: Published for the Hong Kong & China Gas Co. by Pat Printer Associates Ltd. (Hong Kong). 319 p. Illust. (mainly color). Index to recipes. 31 cm.

• **Summary:** A treasure for anyone who admires Chinese cookery, this large, oversized, visually spectacular and beautifully designed book is also rich in culture and history.

Comprehensive, with many insights, it contains numerous two-page color spreads. One of the best books seen to date (1978) on Chinese cookery, except for its poor index.

Hong Kong is located on the Pearl River Delta in China, bordering the province of Guangdong to the north and facing the South China Sea to the east, west and south. Its cuisine resembles that of Canton.

A full-page color map of China shows (with different colors) China's four main regional cuisines: Northern (incl. Beijing), Eastern (incl. Shanghai and Nanking), Southern (incl. Canton, Kwantung and Kwangsi), and Western (incl. Hupei, Hunan, Szechwan, Kweichow, and Yunnan).

Peking is only 40 miles away from the nearest point of the Great Wall of China, which started to be built during the Ch'in / Qin Dynasty (225 BC to 207 BC) as protection against invasion by Tartar Hordes. Genghis Khan (1162-1227) is said to have been the first to penetrate it (p. 21).

The last period of Imperial rule in China was the long-lasting Ch'ing / Qing Dynasty (1644-1911) (p. 22).

Since ancient times, when the feet become swollen, the Chinese have eaten peanuts and soya beans (p. 38).

Buddhist vegetarian cookery has existed in China since the 10th century AD (p. 60).

The section titled "Soya beans" (p. 62-63) mentions bean curd or *tou fu* ("the most versatile of foods in the hands of any cook with any degree of imagination"), soy sauce, soya bean 'milk,' dried bean curd, frozen bean curd, and *mao tou* [green vegetable soybeans] (which "make a delicious hors d'oeuvre when prepared Shanghai-style").

The "mysterious MSG (Monosodium glutamate) is a ubiquitous 'instant flavouring'; but more dishes have been spoiled by the addition of too much MSG rather than by the addition of too little" (p. 76).

A large colored photo and accompanying numbered outlined diagram (p. 77-78) shows many different seasonings, incl. Hoisin sauce, hot bean paste, dark soy sauce, light soy sauce, and Worcestershire sauce. "Soy sauce rules the kitchen as undisputed emperor. Basically a fermented extract of the soya bean with salt added, it is available in three main types: heavy or 'black'; dark, containing caramel as colouring and light (both in colour and flavour)." The finest, most expensive, and most concentrated is the first extraction. Specialty soy sauces flavoured with mushrooms or shrimp roe are also available.

"Black bean sauce is a near relative of soy sauce, being made from salted, fermented black soya beans. Again, mention must be made of the three main types of soya bean pastes: hot (with chillies), sweet (with flour, sugar and spices [t'ien mien chiang]) and yellow, which is very salty indeed... *Hai Hsien* [Hoisin] sauce combines garlic, chilli, beans and ginger with other elements."

A color photo shows most recipes. Soy related recipes include: Shredded pork with dry beancurd saute (p. 112). Chopped soya bean sprouts with pork (p. 113). Stewed lamb

with dried beancurd (p. 127). Stir fried chicken with [soya] bean paste (p. 135). Roast Peking duck (with 4 tablespoons "sweet bean paste," p. 153). Braised duck with lo han vegetables (and 60 gm "fried beancurd cubes," p. 156). 'Lu Shui' goose (p. 157; the Lu Shui sauce is made with 250 gm sugar, 250 gm salt, 2 five-spice bouquets, 250 ml light soy sauce, 10 slices ginger). Braised fish with beancurd and vegetables (p. 161). Eight treasure beancurd soup (with "4 squares soft beancurd," p. 193). Vermicelli and fried beancurd soup (p. 199). Beancurd with shredded pork in soup (p. 201). Fried beancurd (p. 204-05). Spicy beancurd with ground pork (Ma P'o tou fu, p. 208). Braised beancurd with mushrooms (p. 212).

Note: This is the earliest English-language document seen (Oct. 2012) that contains the term "braised beancurd;" it refers to grilled tofu.

Beancurd stuffed with shrimp paste (p. 215). Steamed fish and beancurd cake (p. 221). Vegetarian goose (Su ngo, with "20 dried beancurd skins [yuba], about 41 cm = 16 inches in diameter," p. 227). A full-page photo shows a quern = hand turned stone mill (p. 243). Sweet bean paste dip (*tien tou chiang*, with "4 tablespoons sweet bean paste," p. 278).

Note 1. This is the earliest document seen (Oct. 2012) that uses the term "Su ngo" in connection with yuba.

Also: Sweet red bean paste (*hung tou sha hsien*, with small red beans [azuki], p. 278).

Glossary (p. 302-11; all Chinese words are given only in Chinese characters, which we have romanized in pinyin) incl.: Beancurd (*doufu*). Beancurd, dry (*toufu gan*). Bean curd cubes, fried (*zha doufu*). Beancurd cubes, preserved (*la furu*, spicy fermented tofu); also known as preserved beancurd and Chinese cheese. Beancurd skins, dried (*fupi*) [dofu pi, yuba]. Beancurd sticks, dried (*fuzhu*; [dried yuba sticks]) used frequently in vegetarian cooking. Bean pastes (*gan shi jiang*). Sauces produced from soya beans and other ingredients: Hot bean paste (*xiang shi la jiang*), soya bean paste (*mo shi jiang*), "sweet bean paste (*tian shi jiang*; produced from fermented black soya beans, flour, sugar and spices. Substitute: Hoisin sauce." Note 2. This is the earliest document seen (Feb. 2009) that uses the term "sweet bean paste" to refer to a Chinese paste made with soybeans. Yellow bean paste (*dou ban jiang*). Bean sprouts: Shoots of the mung bean or the soya bean (*da dou ya cai*), the latter being much larger and stronger flavoured. "Black beans (*dou shi*): Salted, fermented black soya beans, Lightly salty in flavour. Used as seasoning. Will keep indefinitely in dry conditions. Chinese cheese (see beancurd cubes, preserved). Dry beancurd (see beancurd, dry). Flour—"High gluten flour (*gao jin fen*): A special kind of 'strong' flour, which gives extreme elasticity, making it possible to roll out the dough to very fine layers. Used for wonton wrappers." Fried beancurd cubes (see beancurd cubes, fried). "Hoisin sauce (*hai xian jiang*): A seasoning sauce or condiment made from red beans (*hong dou*) [azuki], soya beans, sugar and spices. Sweet-

spicy and tangy in flavour. Sold in cans or jars... Also known as Seafood Sauce and Barbecue Sauce.” Hot bean paste (see bean paste). ‘Lu Shui’ sauce (*lu shui zhi*, in Cantonese ‘Lu Soy’). A ‘master sauce’ or more accurately, a stock made with soy sauce, sugar, five spices and ginger. Used for simmering foods, particularly poultry. It gives a rich flavour and deep brown colour. For recipe see p. 157. Note: Widely used in Shanghai, and in Jiangsu and Zhejiang provinces). “Mao tou green peas (*mao dou*): Small beans, grown in the north, with dark-green, slightly hairy pods, which should be removed. Substitute: lima beans.” Monosodium glutamate. Oyster sauce (*hou you*): A viscous dark-brown sauce made from oysters and soy sauce through a process of fermentation. Used as a flavouring and/or colouring agent and as a condiment. Sold in bottles.” Preserved beancurd (see beancurd cubes, preserved). Red beans (*hong dou*), [azuki]. Soya bean paste (see bean paste). Sweet bean paste (see bean paste). Yellow bean paste (see bean paste).

Talk with Cecilia Chiang, founder of The Mandarin restaurant in San Francisco. 2009. Feb. 16. She has this book. The authors of this book are not well known in China; they are mostly amateurs. The best Chinese cookbooks are written by Fu Peimei, a lady who was a real authority on all the different styles of Chinese cooking; she is no longer living. Many of her cookbooks are in both English and Chinese. Concerning “Bean paste,” some of these are no longer available in the USA. Cecilia says Sweet bean paste may be something like *t’ien mien chiang*. Hoisin sauce is not used in Beijing, Shanghai, or anywhere in northern China; it is used mainly in Canton and south China. Cecilia thinks “Sweet bean paste” (*t’ien shih chiang*, p. 303) may be used only in Hong Kong. Most Chinese have never heard of this kind of sweet bean paste. True Cantonese food is quite different from that of Hong Kong. Cecilia knows Cantonese cooking very well; she goes there several times every year. Cantonese make the best soups, the best steamed fish and steamed chicken, and also their famous pork sausage (*la chong?*). Beijing cookery uses hard tofu, but most soft and silky tofu is imported from Japan.

348. Smith, Allan K.; Circle, S.J. eds. 1978. Soybeans: Chemistry and technology. Vol. 1. Proteins. Revised. Westport, Connecticut: AVI Publishing Co. xiii + 470 p. Illust. Index. 24 cm. [500+ ref]

• **Summary:** This revised edition contains relatively few, unimportant changes from the original, classic 1972 edition. The following changes have been made: Addition of a 7-line preface to the “revised second printing” dated 4 Oct. 1977, updating of a graph of U.S. soybean production (p. 1). Updating (to 1976) of a table on U.S. and world production of important oilseeds (soybeans, cottonseeds, peanuts, sunflower, rape, sesame) (p. 2). Minor textual changes on pages 18-19. Addition of a table showing distribution of the 3 leading soybean varieties in 14 major states and the

percentage of acreage harvested for each variety in 1976 (e.g., in Illinois, Williams accounted for 25.1% of harvested acreage, Amsoy 17.3%, and Wayne 12.8%). And updating of a table on U.S. soybean production by state showing acreage harvested, yield per acre, and production for 1974, 1975, and 1976 (p. 32).

The foreword, chapter titles, and index have not been changed at all. Note: Vol. 2 was never published. Address: 1. Oilseeds protein consultant, Hot Springs, Arkansas; 2. Oilseed protein consultant, Protein Technology, Richardson, Texas.

349. Stanley, D.W.; deMan, J.M. 1978. Structural and mechanical properties of textured proteins. *J. of Texture Studies* 9(1/2):59-76. [21 ref]

• **Summary:** “Mechanical properties of foods are a direct consequence of microstructure which, in turn results from an interaction of chemical composition and physical forces.”

Table 1, “Mechanical and functional properties of freeze-textured soy proteins” includes: Kori tofu (firm). Kori tofu (soft). Dried soybean curd (100°C). Dried soybean curd (50°C). Freeze-textured (-1°C). Freeze-textured (-18°C).

Also discusses film formation (yuba), thermally extruded soy grits, and the formation of co-extrudates. Address: Dep. of Food Science, Univ. of Guelph, Guelph, ONT, Canada.

350. Wu, Jingrong. 1978. A Chinese-English dictionary. Beijing, China: Shang wu yin shu guan. 976 p. 27 cm. [Eng; Chi]

• **Summary:** This comprehensive dictionary uses pinyin romanization / transliteration, with accents; Chinese characters are given and definitions are in English. It contains over 6,000 single-character entries, including characters with variant tones. There are over 50,000 compound-character entries and over 70,000 compound words, set phrases and examples. The Chinese title is *Han Ying ci dan*. Soy-related terms include:

Page 92: chi, douchi; see Douchi below.

Page 125: Dadou (soybean, soya bean).

Page 164: Doubanjiang (thick broad-bean sauce).

Doubing (defatted soya bean cake; bean cake). Douchi (fermented soya beans, salted or otherwise [fermented black soybeans]). Doufu (bean curd [tofu]). Doufufang (bean-curd plant [tofu shop]). Doufugan (dried bean curd [pressed tofu]). Doufunaor (jellied bean curd). Doufuru (fermented bean curd). Doufupi (skin of soya bean milk [yuba]; thin sheets of bean curd). Doujiang (soya-bean milk). Douqi (bean stalk). Dousha (sweetened bean paste). Douyou (soya-bean oil). Douzha (residue from beans after making soya-bean milk; bean dregs [okara]). Douzhipin (bean products [soyfoods]).

Pages 210-11: Fu (rotten, putrid). Furu (fermented bean curd). Fuzhu (dried bean milk cream in tight rolls [dried

yuba sticks]).

Note: This is the earliest English-language document seen (Oct. 2012) that contains the term “dried bean milk cream” or the term “dried bean milk cream in tight rolls.” Both probably refer to dried yuba sticks.

Page 294: Huangdou (soya bean, soybean [yellow soybean]).

Page 324: Jia (pod). Jiaguo (pod, legume).

Pages 336-37: Jiang (1. A thick sauce made from soya beans, flour, etc. 2. Cooked or pickled in soy sauce, such as pork or braised pork; tomato sauce, ketchup). Jiangcai (vegetables pickled in soy sauce, pickles). Jiangyou (soy sauce, soy). Jiangyuan (a shop making and selling sauce, pickles; sauce and pickle shop).

Page 459: Maodou (young soya bean [edamame, green vegetable soybean]).

Pages 470-71: Mianjin (gluten [wheat gluten]). Miao (young plant, seedling).

Page 487: Nai (breasts, milk, suckle, breast-feed [dounai = soymilk]).

Page 553: Qi (beanstalk). Page 561: Qu (leaven, yeast, *Aspergillus* [koji]).

Page 661: Taijiquan (a kind of traditional Chinese shadow boxing [taichi]).

Page 957-59. Pinyin–Wade-Giles conversion tables.

Page 972: A brief Chinese chronology [of dynasties].

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word “dofugan” to refer to Chinese-style tofu. Address: Peking, China.

351. Flower Dragon. 1979. Chinese New Year (Ad). *New York Times*. Jan. 14. p. CN15, WC13.

• **Summary:** The Flower Dragon restaurant “has invited the famous Chef Lau from Hong Kong to prepare dishes that have never been sampled outside of China.” The menu is given. Appetizers include: Fried oysters. Bean curd skin [yuba] with plum meat. Beef curry in pastry.” Call for reservations. \$15 per person.

Note: This ad appeared on two pages in this issue of the newspaper; it appeared again on Jan. 21 (p. WC3). Address: Route 128, Armonk, New York—only 7 minutes from White Plains on I-64.

352. Dwan, Lois. 1979. A pearl in downtown Burbank. *Los Angeles Times*. Jan. 28. p. K92.

• **Summary:** This is a restaurant review of Szechuan Garden, 128 S. Burbank Blvd., Burbank, California. By the end of World War II, Chungking (the wartime capitol of China) offered some of the best food in the world—according to *In Search of History*, by Theodore H. White. Chefs from the great restaurants of every city and province fled to Chungking to display their mastery. And Chungking controls the entrance to Szechuan, an almost impenetrable fortress to the east. The largest and richest province in China, Szechuan is famous for

its unique, hot and spicy cuisine. Szechuan Garden offer’s Buddha’s feast [Arhat’s Fast] which contains many delicate vegetables including “bok choy, tiny corn cobs, ginkgo nuts, snow peas, water chestnuts, bean curd skin [yuba] (as tender as an omelet).”

353. Shurtleff, William; Aoyagi, Akiko. 1979. *The book of tofu: Food for mankind*. Condensed and revised. New York, NY: Ballantine Books. A division of Random House, Inc. xii + 433 p. Jan. Illust. by Akiko Aoyagi Shurtleff. Index. 18 cm. [60 ref]

• **Summary:** This book has been extensively revised and updated. Many names of Japanese tofu have been Americanized. Contents: Preface. Acknowledgements. 1. Protein East and West. 2. Tofu as a food. 3. Getting started: Favorite tofu recipes. 4. Soybeans. 5. Fresh soy puree. 6. Okara (Soy pulp). 7. Curds and whey. 8. Tofu & firm tofu. 9. Deep-fried tofu: Deep-fried tofu cutlets, deep-fried tofu burgers & treasure balls (tofu treasure balls, p. 269), and deep-fried tofu pouches. 10. Soymilk. 11. Silken tofu. 12. Grilled tofu. 13. Frozen & dried-frozen tofu. 14. Fermented tofu. 15. Yuba. Appendices: A. Tofu restaurants in Japan. B. Tofu shops and soy dairies in the West. C. Varieties of tofu in East Asia. D. Table of equivalents. Bibliography. Glossary. Contains 250 recipes and 100 illustrations. Price: \$2.95.

This new edition features: (1) New recipes: Over fifty new American-style tofu recipes including Creamy Tofu Dressings, Tofu Teriyaki, Tofu Burgers, Tofu Eggless Egg Salad, and the like. The key to the book is an updated list of favorite tofu recipes plus suggestions for incorporating them into a weekly menu (p. 56). (2) New sections: An extensive new introduction to Soy Protein Foods (p. 66), dairylike products made from tofu (p. 150), dairylike products made from soymilk (p. 302) including soymilk yogurt (fermented), ice cream, kefir, mayonnaise, whipped cream, popsicles, buttermilk, and soy shakes. (3) New chapters: Fermented Tofu and Varieties of Tofu in East Asia. (4) New basic methodologies: The key recipes for homemade tofu and homemade soymilk have been simplified and improved. (5) Updates: A complete listing of the 120 tofu shops and soy dairies now operating in the West; over 60 Caucasian-run shops have opened in the past two years. (6) New Americanized tofu names: Including deep-fried tofu burgers, deep-fried tofu cutlets, deep-fried tofu pouches, deep-fried tofu puffs, silken tofu, wine fermented tofu, and fresh soy puree. A major goal of this book is to coin English names for tofu products that will catch on and come to be used in labeling commercial products, in cookbooks, etc. (7) No sugar.

Note 1. This is the earliest English-language document seen (May 2012) that contains the following terms related to deep-fried tofu: “fried tofu cutlets” or “deep-fried tofu cutlets” (p. v, to refer to *nama-agé*), “fried tofu burgers” or “deep-fried tofu burgers (to refer to *ganmodoki*), “tofu

treasure balls” or “deep-fried tofu treasure balls” (p. v, 269, to refer to *Hiryozu*), “fried tofu pouches” or “deep-fried tofu pouches” (p. v, to refer to *aburagé*).

Page 110: “In Japan, tofu is also called *momen-goshi* (‘cotton-filtered’) to distinguish it from its popular counterpart *kinu-goshi* (‘silken tofu’).” Note 4. This is the earliest English-language document seen (March 2004) that uses the term “silken tofu.”

Note 5. This is the 2nd earliest English-language document seen (Oct. 2011) that contains the term “Wine-fermented tofu” (p. 361).

In Jan. 1988 a new printing (but not a new edition) of this book (the 13th), slightly revised, appeared. It had a new cover and many new small illustrations. The subtitle was “Protein Source of the Future—Now!” The heading: “The World’s Bestselling Book on Tofu.” Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

354. Shurtleff, William; Aoyagi, Akiko. 1979. Appendix C: Varieties of tofu in East Asia (Document part). In: William Shurtleff and A. Aoyagi. 1979. *The Book of Tofu*. New York: Ballantine Books. 433 p. See p. 402-05.

• **Summary:** Gives the local, vernacular name for and a description of many varieties of tofu found in China and Taiwan, Indonesia, South Korea, Philippines, Thailand, and Vietnam.

China and Taiwan:

Taiwan, with a population of 15 million people, has about 2,500 tofu shops. There are no statistics yet available on the number of shops in mainland China, but if the proportion of shops to people is the same as in Taiwan, we can expect there to be 158,000 shops serving China’s 950 million people. Unless otherwise stated, all Chinese terms are standard Mandarin. The “t” in *toufu* is pronounced like the “d” in “doe.”

Chinese-style Firm Tofu (*toufu*; *dowfu* or *daufu* in Cantonese). The most popular type. Coagulated with calcium sulfate (gypsum) and sold in 3-inch squares weighing about 4½ ounces each. Contains 10 percent protein. One special type made in Shantung province is called *t’aian toufu*; another made in Anhui province, Chunnan, is called *pa-kung-shan toufu*.

Pressed Tofu (*tofu-kan*): Similar to firm tofu but pressed until as firm as ham. Contains 22 percent protein. Often simmered in mixtures of water and burnt millet sugar, molasses, turmeric, or tea to create a variety of colors and flavors and increase shelf life.

Five-Spice Pressed Tofu (*wu-hsiang toufukan* or *hsiang toufukan*): Made by simmering pressed tofu squares in a mixture of soy sauce, oil, and “five spice powder” (ground anise, cinnamon, cloves, plus fennel and Szechuan chili powder or ginger and nutmeg). Now prepared in San Francisco, it has a flavor and texture resembling smoked

ham.

Soy-sauce Pressed Tofu (*chiang-yu toufu-kan*): Made by simmering small squares of pressed tofu in a mixture of soy sauce and water.

Pressed Tofu Sheets (*pai-yeh* or *ch’ien-chang*): Tofu pressed into very thin sheets that look like a 6-to-12-inch-square of canvas.

Pressed Tofu Noodles (*toufu-ssu* or *kan-ssu*): Made by cutting pressed tofu sheets into noodlelike strips.

Pressed Tofu Loops (*pai-yeh chieh*). Made by cutting pressed tofu sheets into ½-inch-wide strips. Each is then tied into a simple overhand knot.

Salt-dried Tofu (*toufu-kan*): Made from squares of pressed tofu that are rubbed with salt, tied together with strands of rice straw, and hung in the sunlight to dry.

Hard tofu (*lao-toufu*): A general term for all tofu that is not soft.

Chinese Silken Tofu (*shui-toufu*, *nan-toufu*, *nen-toufu*, or *shih-kaio toufu*): One popular type is like a soft Japanese silken tofu; another is so soft it cannot be cut into cakes.

Smooth Soymilk Curds (*toufu-nao*): Literally “tofu brains.” Sold in the West as Tofu Pudding. Sold by street vendors in China topped with a brown sugar & peanut sauce.

Curds-in-Whey (*toufu-hua* or *rou-hua*): Literally “tofu flowers.” Available at some Chinese restaurants in the West.

Deep-fried Tofu (*yu-toufu* or *cha-toufu*): A general term for deep-fried tofu cutlets, cubes, triangles, or netlike cutlets.

Hollow Deep-fried Tofu Cubes (*toufu-kuo* or *cha-toufu*): Made by deep-frying 1-inch cubes of firm tofu.

Sautéed Tofu (*kuo-lao toufu*): Made by thinly slicing firm tofu and frying it over low heat in a skillet until it turns a rich brownish yellow.

Frozen Tofu (*tung-toufu* or *ping-toufu*): Made by setting firm tofu out overnight in the snow.

Fermented Tofu (*toufu-ru*): See Chapter 14. Varieties include *nan-ru*, *nan-chiang toufu*, *ru-fu*, *mei-kui ru-fu*, and *chiang-toufu*.

Soymilk (*toufu-chiang tou-chiang*, or *tou-ru*): See Chapter 10.

Chinese-style Yuba (*toufu-p’i* or *doufu-i*): See Chapter 14.

Bamboo Yuba (*fu-chu* [dried yuba sticks]): U-shaped, dried rolls.

Okara (*tou-cha*): See Chapter 6.

Indonesia:

Over 11,000 tofu shops make tofu for this country’s 130 million people.

Indonesian tofu (*tahu*): Similar to Chinese firm tofu (*toufu*). In many shops, the whey, allowed to stand overnight until it ferments, is used as the coagulant. Pressed tofu simmered in turmeric (also called simply *tahu*) is popular.

Deep-fried Tofu Cubes (*tahu goreng*): 1¼-inch cubes deep-fried fresh by market vendors. Served crisp and hot, often with a fiery chili perched on top.

Tofu Chips (*krupuk tahu*): Salted tofu sliced into long, thin strips and sun-dried. Broiled until crisp, then eaten as a snack or topping for Gado-gado (cooked vegetables with peanut sauce).

Fermented Tofu (*taokoan* or *takoa*): Steamed and pressed into thin slices before being fermented.

Okara (*ampas tahu*): Usually made into delicious okara tempeh or okara onchom.

South Korea:

There are more than 1,000 tofu shops scattered throughout this country of 32 million population. If there were a proportional number in North Korea, there would be 470 shops for 15 million people.

Korean Tofu (*tubu*): Slightly firmer than its Japanese counterpart; not as firm as Chinese tofu.

Deep-fried Tofu Strips (*yubu*): Each strip is about 7 by 1 by 3/4 inch. Unique.

Soymilk Curds (*sun tubu*): Widely used.

Okara (*piji*): Also popular.

Philippines:

Philippine Tofu (*tokwa*): Identical to Chinese firm tofu (tofu).

Soymilk curds (*tajo*): Pronounced ta-HO; made by Chinese. Sold topped with a little brown sugar.

Brine-fermented Tofu (*tahuri*): Made like Chinese brine-fermented tofu but with an *Aspergillus elegans* mold and a little soy sauce in the brining liquor.

Thailand:

Thai Tofu (*tao-hu*): Identical to Chinese firm tofu (tofu). Made mostly by Chinese.

Deep-fried Tofu (*tao-hu tod*): Small (1¼-inch) cubes of deep-fried tofu. Often sold strung on split bamboo and tied in a loop.

Soymilk (*nom rua-liung*): Sold hot each morning by Chinese. A thin soymilk is called *nam tao-hu*.

Soymilk Curds (*tao-huey*): Sold by street vendors, topped with grated gingerroot and brown sugar syrup.

Red Fermented Tofu (*tao-hu yee*): A Chinese product. Sold in 2-inch squares wrapped in either banana leaves or paper.

Lactone Silken Tofu (*tau-hu lord* or *tau-hu lawd*): A modern product.

Vietnam:

Vietnamese Tofu (*dau hu* or *dau phu*; these and all of the following terms are spelled with many diacritical marks): Similar to Chinese firm tofu.

Smooth Soymilk Curds (*dau hu*): Similar to the Chinese product of the same name. Served warm in a sauce of brown sugar and ginger.

Fermented Tofu (*chao*): Similar to Chinese fermented Tofu.

Soymilk (*sua dau nanh*): Identical to Chinese soymilk.

Pressed Tofu Sheets (*mi cang*): Identical to the Chinese product.

Yuba (*dau phu truc*): Identical to Chinese yuba.

Note 1. This is the earliest English-language document seen (Feb. 2004) that uses the word “daufu” to refer to Chinese-style tofu or the word “tokwa” to refer to Philippine-style tofu.

Note 2. This is the earliest English-language document seen (Oct. 2010) that uses the word “nan-ru” to refer to fermented tofu. Address: P.O. Box 234, Lafayette, California 94549.

355. Shurtleff, William. 1979. Protein source for the future. *Cosmos (NSW, Australia)* 6(6):1, 4-5. Jan.

• **Summary:** Gives ten reasons why soybeans will be the protein source of the future: 1. Optimum land utilization. 2. Lowest cost protein. 3. High nutritional value. 4. Time tested. 5. Remarkably versatile. 6. Appropriate technology. 7. New dairylike products. 8. Hardy and adaptive. 9. Free nitrogen fertilizer. 10. Energy and resource efficient. “All of these ten factors work together synergistically, reinforcing one another, to give added weight to the prediction that soybeans will be a key protein source for the future on plant earth.”

Note: This information was published in July 1979 in *The Book of Tempeh* (p. 21-24). Address: Lafayette, California.

356. Wang, H.L.; Mustakas, G.C.; Wolf, W.J.; Wang, L.C.; Hesselstine, C.W.; Bagley, E.B. 1979. Soybeans as human food: Unprocessed and simply processed. *USDA Utilization Research Report No. 5*. iv + 54 p. Jan. Slightly revised, July 1979. Jan. No index. 28 cm. Compiled for USAID. [50+ ref]

• **Summary:** Contents: Introduction. 1. Soybean food uses in Asia. China: Soaking dry soybeans, tou chiang (soybean milk), tou fu (soybean curd), processed tou fu products, tou fu pi (protein-lipid films), huang tou ya (soybean sprouts), whole soybeans, fermented soybean foods, production and consumption. Japan: Tofu (soybean curd), kinugoshi tofu, processed tofu products, yuba (protein-lipid film), soybean milk, gô (ground soybean mash), daizu no moyashi (soybean sprouts), whole soybeans, fermented soybean food, production and consumption. Korea: Tubu (soybean curd), processed tubu product, soybean sprouts, whole soybeans, soybean flour, fermented soybean food, production and consumption. Indonesia: Tahu or tahoo (soybean curd), bubuk kedele (soybean powder), tempe kedele, tempe gembus [the name in Central and East Java for okara tempeh], oncom tahu [the name in West Java for okara onchom], other soybean products (soybean sprouts, green soybeans, roasted and boiled soybeans, kecap {soy sauce}, tauco {soybean paste}), food mixtures, production and consumption. Thailand: Tofu (*tauhu*), soy sauce, green soybeans in the pods (*tourae*). Philippines: Soybean sprouts, soybean coffee, soybean cake, soybean milk, tou fu and processed tou fu products, production and consumption. Burma. India. Malaysia. Nepal. Singapore. Sri Lanka

(Ceylon). Vietnam. Middle East. References—Soybean food uses in Asia.

2. Soybean food uses in Africa. Ethiopia: Injera, wots and allichas, kitta, dabbo, dabokolo, porridge. Kenya. Morocco. Nigeria: Whole soybeans, soybean paste, corn-soy mixtures (soy-ogi). Tanzania. Uganda. Production. References—Soybean food uses in Africa.

3. Soybean food uses in Europe and U.S.S.R.

4. Soybean food uses in Latin America. Argentina. Bolivia. Brazil. Chile. Colombia. Ecuador. Guyana. Paraguay. Peru. Uruguay. Venezuela. Mexico: New village process, commercial developments. Honduras. Costa Rica. Panama. Dominican Republic. Jamaica. Haiti. Trinidad. References—Soybean food uses in Latin America.

5. Soybean food uses in North America. United States. Canada. References—Soybean food uses in North America.

6. Soybean food uses in Australia. 7. Summary of soybean food uses. Traditional soybean foods: Soybean milk, soybean curd and processed soybean curd products, protein-lipid film, soybean sprouts, tempe (tempeh), green soybeans, boiled soybeans, roasted soybeans, soybean flour, soy sauce, fermented soybean paste, fermented whole soybeans, natto, fermented soybean curd. Experimental soybean foods: Whole soybean foods, soybean paste, soy flour, soy beverage. Production and consumption.

8. Simple village process for processing whole soybeans: Equipment, process, sanitation requirements, quality of product, evaluation of product in formulas and procedures for family and institutional use in developing countries. NRRC village process. 9. Industrial production and selling prices of edible soybean protein products.

10. Barriers to accepting and using soybeans in food: Availability. Cultural and social factors. Texture. Flavor. Nutrition and food safety. Technology development. Technology transfer. Address: NRRC, Peoria, Illinois.

357. Dwan, Lois. 1979. Where the 'Mandarin' is master. *Los Angeles Times*. April 8. p. N98.

• **Summary:** This is a restaurant review of Lotus West, 10974 W. Pico Blvd., West Los Angeles—one of an estimated 1,000 Chinese restaurants in Los Angeles County. For dessert the writer enjoyed “squares of beancurd [tofu] and litchis in cold almond syrup and... a small, flaky delicate pastry filled with sweet bean paste” [probably *an*, made with azuki beans].

In another dish, “Beancurd was steamed and flattened, rolled like a jelly roll around back mushrooms.”

“Dinner was climaxed with eight-precious duck... It had been wrapped in cabbage leaves, in beancurd skin [yuba], in foil and then in clay, baked for 7 hours.”

358. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. Professional hardcover edition. New York, NY: Harper & Row. 248 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [190

ref]

• **Summary:** A special cloth-bound professional edition of *The Book of Tempeh* prepared for libraries, commercial tempeh producers, microbiologists, students of Indonesian foods, and those who love fine books. In addition to the full contents of the paperback edition, it contains the following lengthy appendixes: B: Tempeh in Indonesia (an overview of the tempeh industry and market, including the number of shops by province, per capita consumption, etc.). C: The Varieties of Tempeh. D: Soybean Production and Traditional Soyfoods in Indonesia. E: The Microbiology & Chemistry of Tempeh Fermentation. H. Onchom or Ontjom. A Glossary of Indonesian Foods (the most extensive one available in English). Bibliography on Tempeh containing over 190 entries: Works on the world food crisis, works on tempeh cookery or Indonesian cuisine, scientific journal articles on tempeh, early Dutch- and German-language works on tempeh, Indonesian-language works about tempeh, key English-language works on microbiology, film and color slides on tempeh. Illustration of an Indonesian dancer. Expanded Index. A great deal of original research is contained in the extra 88 pages and 54 illustrations.

Appendix C, “The varieties of tempeh, states: “The many varieties of tempeh may be grouped into five basic types, according to the primary ingredient used: legumes, grains & soy, grains, presscake residues, and nonlegume seeds. Legume tempehs: Soy tempeh (*tempé kedelé* or *kedelai*, made from the seeds of *Glycine max*). Velvet-bean tempeh (*tempe benguk* or *tempe koro benguk*, made from the seeds of *Mucuna pruriens*, which are called *kara benguk* in Indonesian). Winged-bean tempeh (*tempe kecipir*, made from the seeds of *Psophocarpus tetragonolobus*). Leucaena tempeh (*tempe lamtoro* or *tempe mlandingan*, made from the seeds of *Leucena leucocephala*). Mung bean tempeh (*tempe kacang hijau*, made from the seeds of *Vigna radiata*, which are called *kacang hijau* in Indonesian). Broad-bean or fava-bean tempeh (*tempe kacang babi*, made from the seeds of *Vicia faba*, also called horse beans). Sesban-bean tempeh (*tempe turi*, made from the seeds of *Sesbania grandiflora*). Pigeon-pea tempeh (*tempe kacang iris*, made from the seeds of *Cajanus cajan*). Green-bean tempeh (*tempe kacang merah*, made from the seeds of *Phaseolus vulgaris*, which are called *kacang buncis* in Indonesian). Lima-bean tempeh (*tempe kara* or *tempe kara kratok*, made from the seeds of *Phaseolus lunatus*). Lablab-bean tempeh (*tempe kara-kara* or *tempe koro wedus*, made from the seeds of *Lablab purpureus*, which is called hyacinth bean in the USA). Jack-bean tempeh (*tempe kara bedong* or *tempe kara pedang*, made from the seeds of some strains of *Canavalia ensiformis*). Lupin tempeh (developed in Australia, made from the seeds of the narrow-leaved sweet lupin (*Lupinus angustifolius*) or the Andean lupin (*Lupinus mutabilis*)). Cowpea or black-eyed pea tempeh (developed in West Africa and Thailand, made from the seeds of *Vigna unguiculata*).

Note: Chickpeas (garbanzo beans), baby limas, and great northern beans have also been used to make tempeh.

Grain & soy tempehs: Wheat & soy tempeh, barley & soy tempeh, rice & soy tempeh, bulgur & soy tempeh. Grain tempehs: Barley, rice, wheat, oats, and rye have been used with good results.

Presscake tempehs: Okara tempeh (called *tempe gembus* in Central and East Java where it is most popular, and called *oncom hitam* in West Java where it is not widely used). Peanut presscake tempeh (called black onchom (*oncom hitam*) in the Bogor region of West Java where it is most widely consumed, or white onchom (*oncom putih*) in the Tasikmalaya region, or “tempeh from peanut presscake” (*tempe bungkil kacang*) in East Java). Coconut presscake tempeh (*tempe bongkrek*, *tempe bungkil kelapa*, or *tempe kapuk*) comes in several varieties and can be poisonous if the pathogenic aerobic bacterium *Pseudomonas cocovenenans* grows on it and produces either yellow-colored toxoflavin or the more toxic colorless bongkrek acid. Peanut- & coconut-presscake tempeh (*tempe menjes*). Mung-bean-presscake tempeh (*oncom hitam* or *oncom ampas kacang hijau*). Soy- & peanut-presscake tempeh. Defatted soy-meal tempeh.

Seed tempehs (nonleguminous): Rubberseed tempeh (*tempe kaloko*) is made from the seeds of the rubber tree (*Hevea brasiliensis*). Okra tempeh. Sesame & soy tempeh. Tempeh extenders and adulterants: Okara, cassava, mung-bean presscake, soybean hulls, sweet potato, coconut- or peanut presscake, papaya. The stages of tempeh fermentation (underripe to overripe): Premature tempeh (*tempe koro*), mature tempeh, slightly overripe tempeh (*tempe semangit* or *tempe lanas*), overripe tempeh (*tempe busuk* or *tempe bosok*), rotten tempeh. Tempeh wrappers.

Appendix D: “Soybean production and traditional soyfoods in Indonesia” discusses: Soybean production in Indonesia, traditional Indonesian soyfoods: Kecap (*kecap / ketjap*, incl. *kecap manis*), taucho (*tauco* or *taoco*), okara onchom, sereh (*sere*), taokoan or takoa, tofu (*tahu*). Other nonfermented soyfoods: Soy sprouts (*taugé kedele*), yuba (*bungah tahu*), soymilk, roasted soybeans (*dele sangan*, *kedele sangrai*), roasted soy grits or full-fat flour (*bubuk kedele*), fresh green soybeans (*kedelai rebus*).

Note: This is the earliest English-language document seen (March, 2009) uses the word “taucho” (spelled in that way) to refer to Indonesian-style miso.

Appendix E: “The microbiology and chemistry of tempeh fermentation” discusses: What are fungi?, general characteristics of *Rhizopus* molds, *Rhizopus* species used to make tempeh, pure cultures versus mixed cultures, preparing soybeans for fermentation, requirements for mold growth, general changes during tempeh fermentation, changes in nutrients and digestibility, the finished tempeh, the advantages and disadvantages of tempeh fermentation, suggestions for further research.

Appendix H: “Onchom or ontjom” discusses: Introduction. The varieties of onchom (*onchom merah* or *onchom beureum*): Peanut-presscake onchom, okara onchom, soy onchom, coconut-presscake onchom. Making peanut-presscake onchom in a commercial shop. Making okara onchom in a commercial shop. The microbiology of onchom. Laboratory studies of onchom. Aflatoxins. Works on onchom and Neurospora. People connected with onchom and Neurospora. Continued. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

359. Shurtleff, William; Aoyagi, Akiko. 1979. Tofu & soymilk production: A craft and technical manual. Lafayette, California: New-Age Foods Study Center (Renamed Soyfoods Center in Sept. 1980). 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. First published in Aug. 1977 as a rough photocopied manuscript with a yellow cover. [223 ref]

• **Summary:** Contents: Preface. 1. How to start a tofu shop or soy dairy. 2. Setting up shop; The community or village shop; The traditional caldron shop; The steam cooker plant; The pressure cooker plant; The soy dairy; The automatic steam cooker plant; The modern factory. 3. Ingredients. 4. Sanitation and safety. 5. Principles of tofu & soymilk production. 6. Tofu. 7. Firm tofu, pressed tofu & smoked tofu. 8. Foods made from tofu: Introduction, creamy tofu dressing, tofu chip dip, tofu mayonnaise, tofu cream cheese, cottage cheese, sour cream, tartare sauce, tofu eggless egg spread or missing egg salad, tofunafish spread or salad, tofu rice salad, tofu cheesecake (Sprucetree Baking Co. and White Wave), tofu pies, tofu creamies or tofu-coconut cream bars, tofu tarts, tofu turnovers, tofu puddings, fruit whips, custards and parfaits, tofu cinnamon rolls, tofu whipped cream, tofu icing and cream cakes, marinated tofu (fried or baked, p. 166), tofu jerkey [sic, jerky] (p. 166), teriyaki tofu, tofu teriyaki, savory baked tofu, savory pressed tofu (with five spice powder, *wu-hsiang toufu-kan*), nori rolls with brown rice & tofu, tofu & brown rice burgers, tofu baby foods, tofu in ready-made sandwiches. 9. Using okara, whey, curds & hulls. Deep-fried tofu (cutlets, cubes, burgers, treasure balls, burger balls, pouches, puffs). 11. Soymilk. 12. Dairylike products made from soymilk: Frozen soymilk desserts (soymilk ice cream, frozen soymilk yogurt, soymilk sherbets, soysicles, frozen soymilk custard, ice soymilk), fermented or cultured soymilks (soymilk yogurt, acidophilus soymilk, soymilk kefir, soymilk piima, soymilk buttermilk and other fermented milks), soymilk cheeses (unripened fresh, unripened soft {quark, queso blanco, panir, etc.}, ripened soymilk cheeses), soymilk mayonnaise, soy shakes and energy drinks, soymilk eggnog (soy nog), soymilk whipped cream, chip dips, puddings, custards. 13. Silken tofu & pressed silken tofu (Silken tofu is made from concentrated soymilk). 14. Lactone silken tofu (GDL). 15 Grilled tofu. 16. Fermented tofu. 17. Dried-frozen tofu. 18. Yuba. Appendix

A: Resources. People & institutions connected with tofu & soymilk production. B: Weights, measures & equivalents. Bibliography. About the New-Age Foods Study Center.

See ¼-page ads in *East West Journal*. 1979. Dec. p. 4. 1980. Jan. p. 19.

Note 1. This is the earliest English-language book seen with the term “soymilk,” spelled as one word, in the title.

Note 2. This is the earliest document seen (Feb. 2002) that mentions tofu jerky or any kind of soy jerky.

Note 3. This is also the earliest English-language document seen (Feb. 2004) that uses the word “quark,” or “queso blanco.” or “panir” in connection with soy cheese or tofu.

Note 4. This is the earliest English-language document seen (Sept. 2012) that contains the term “cultured soymilks” (or “cultured soymilk”).

Note 5. This is the earliest English-language document seen (Sept. 2012) that contains the term “ripened soymilk cheeses” (or “ripened soymilk cheese”).

Note 6. This is the 2nd earliest English-language document seen (Feb. 2004) that uses the term “smoked tofu,” but the first that uses it in its modern sense.

Note 7. This book contains the most detailed and complete descriptions seen to date (Oct. 2012) of how to make tofu, soymilk, and yuba on a commercial scale.

Note 8. This book was first printed on 1 Aug. 1977 in a photocopied and rough-typed edition with a yellow and black cover.

Note 8. Reviews of this book appeared in many publications: (1) Richard Leviton. 1980. *Soycraft* (Massachusetts). 2(1):63-64. Winter. “An indispensable operating manual for soyfoods entrepreneurs... The illustrations alone make the book a valuable reference tool... a sustained inspiration. The only book of its kind in English.” (2) *Food Chain* (Intermediate Technology, England). 1997. No. 20. March. p. 6. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

360. Shurtleff, William; Aoyagi, Akiko. 1979. The book of tempeh: A super soyfood from Indonesia. Professional hardcover edition (Continued). New York, NY: Harper & Row. 248 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 28 cm. [190 ref]

• **Summary:** Continued: Numbered figures (line drawings unless otherwise stated. The capital letter before the decimal refers to the appendix number). B.1 Table: Tempeh shops in Indonesia by province: Home-industry scale. B.2 Table: Relative frequency of tempeh consumption in Indonesia (by province). B.3 Carrying tempeh to market in Java using a shoulder pole and trays stacked on two baskets. B.4 Cost of one day’s supply of protein in Indonesia.

C.1 Table: Edible grain legumes. C.2 Map: Distribution of legumes in southeast Asia. C.3 Winged bean, showing leaves, pods, flowers and beans. C.4 *Leucaena* leaves and

pods (*peté china*). C.5 Reduction in bongkreik toxicity from bongkreik acid during fermentation (Ko 1977). Okra. Packets of tempeh, ready to sell, wrapped in leaves and tied. A large soybean, with hilum showing.

D.1 Table: Soybean production in Indonesia (1950-1976). D.2 Table: Major Indonesian food crops, D.3 Table: Indonesian soybean production and yields (by province). D.4 Map: Major soybean producing districts in Java (1976; most are in East Java, led by Jember and Pasuruan). Table: Daily per capita consumption of tempeh (by province, led by Central Java, then West Nusa Tenggara, Yogyakarta, and East Java). Table: Percent of dietary protein supplied by major food categories (led by cereal grains, then fish, nonlegume vegetables, and soy products). Table: Percentage of dietary protein supplied by soy products (by province, led by Central Java, then East Java, Yogyakarta, and West Java). D.5 Table: Statistics on production and consumption of basic Indonesian soyfoods (led by tempeh, then tofu, kechap, taicho). D.6 Star anise. Grinding soybeans for tofu using traditional push-pull stone mills. Pouring soy curds into cloth-lined forming box. Javanese shadow puppet (*wayang kulit*).

Table: Classification of *Rhizopus oligosporus*. E.1 Two stages in the germination of a spore (after 1½ and 10 hours). E.2 Two successive views of hyphal tip growth at half-hour intervals.

E.3 *Rhizopus oligosporus* (Frazier 1957, showing sporangium, columella, apophysis, sporangiophores, stolon, sporangiospores, node, rhizoid). E.4 *Rhizopus stolonifer*. A. Columella and attached spores. B. Collapsed (invaginated) columella (Webster 1970).

E.5 Life cycle of *Rhizopus* (Raven and Everet 1976). E.6 Graph: Changes in tempeh oil and moisture content during fermentation (Sudarmadji 1977). E.7 Graph: Three phases of tempeh fermentation (rapid, transition, and deterioration; Sudarmadji 1977). E.8 Graph: Changes occurring during tempeh fermentation (temperature, soluble solids, pH, soluble nitrogen, and reducing solids; Steinkraus et al. 1960). E.9 Graph: Yields of tempeh and of solids and different stages of the fermentation process (100 gm of whole dry soybeans yield 173 gm of tempeh on average; Steinkraus 1960; Murata 1967). E.10 Table: Loss of solids and protein during tempeh fermentation. E.11 Table: Percentage changes in composition of key essential amino acids during tempeh fermentation. E.12 Table: PER (protein efficiency ratio, a measure of protein quality for humans) changes during tempeh fermentation. E.13 Graph: Changes in concentration of three carbohydrates during tempeh fermentation (sucrose, stachyose, and raffinose, all decrease; Shallenberger et al. 1976). E.14 Table: Amount of B-complex vitamins in 100 gm of tempeh vs. 100 gm unfermented soybeans (all increase in tempeh except thiamine {vitamin B-1}). Changes in peroxide value and TBA value tempeh and soy flour during storage at 37°C (98.6°F; both rise rapidly in soybeans, but stay near zero and stable for tempeh; Watanabe et al. 1971).

H.1 Table: Foods known in Indonesia as “onchom” (made from peanuts or soybeans). H.2 Selling onchom in a Javanese market. H.3 Graph: Changes in soy onchom during fermentation (temperature, soluble solids, pH, soluble nitrogen, and reducing solids; Steinkraus et al. 1965). H.4 Flowchart for preparation of peanut presscake onchom. Unnumbered illustrations show 12 steps in the process of making onchom in a commercial shop in Indonesia. *Neurospora*: Budding conidia, conidiophore. H.5 Graph: Reduction in onchom aflatoxin during fermentation with *Neurospora* (Ko 1974). A thermometer, showing both Fahrenheit and Centigrade.

Glossary of Indonesian foods, spices, etc. Agar. Amaranth, Indonesian. Apem. Arak. Aren sugar. Aromatic ginger. Asam. Bananas (pisang). Basil. Bawang merah. Bawang putih. Bayam. Bean sprouts. Belimbing. Blachan. Brem. Bumbu. Candlenuts (kemiri). Carambola (belimbing). Cassava. Chabé. Chayoté. Chilies (red, green, fiery dwarf). Two-page spread (p. 220-21) showing illustrations of Indonesian natural foods. Choko. Citrus leaves. Cloves. Coconut. Coconut, grated. Coconut milk and cream. Coconut oil. Coconut water. Coriander. Cumin. Dageh. Daun asam. Daun jeruk purut. Daun salam. Daun seré. Daun-so. Durian. Fermented fish. Fermented fish sauce. Fruits. Galangal, greater. Galangal, lesser. Gingerroot. Indonesian amaranth. Jackfruit. Jaggery. Jinten or jintan. Kangkung leaves. Kecap (kecap) or ketjap. Kemangi leaves. Kemiri. Kenchur root. Ketjap. Ketumbar. Kluwak. Koji. Kolang-kaling. Krupuk. Kunyit. Labu siam. Laos root. Lemongrass. Lime leaves. Lombok. Melinjo leaves. Mochi, Indonesian (*uli*). Mung-bean sprouts. Nutmeg. Okara. Onchom or ontjom. Palm sugar. Pandanus leaf. Pasta. Pepper. Peté beans. Petis. Peuyeum. Prawn paste. Putjung nuts. Ragi. Rempyek. Rice. Salam leaf. Sambals. Santan, Sayur asin. Seré or serai. Shallots. Shrimp crisps. Shrimp paste. Soursop. Soy sauce, Indonesian. Star fruit. Swamp cabbage. Tahu. Tamarind. Taocho, tauco, taoco, or taotjo. Taogé or taugé. Tape. Tapioca. Taucho or tauco. Terasi. Tofu. Trasi. Tuak or tuwak. Turmeric. Winged bean. Note on monosodium glutamate. A woman holding a tray of leaf-wrapped tempeh in Surinam. Photo of Shurtleff and Aoyagi on inside rear dust jacket. Address: New-Age Foods Study Center, P.O. Box 234, Lafayette, California 94549.

361. Simonds, Nina. 1979. Chinese cuisine: Soybeans. *Gourmet* 39:28-29, 74-77. Aug.

• **Summary:** After a brief history of soya in China, gives recipes for: Fried soybeans [soynuts]. Sweet soybean milk. Stir-fried soybean sprouts red-in-snow (incl. how to sprout soybeans). Braised soybeans and meatballs. Sparerib and soybean sprout soup. Stuffed wheat gluten balls with soybean sprouts (*Mien Chin Jou Yüan*). Braised bean sticks [*fu tsu*; dried yuba sticks] with black mushrooms. Buddha's delight (*Lo Han Su Ts'ai*). Stuffed bean curd rolls. Sweet-

and-sour fish in bean milk skin [yuba]. Bean milk skin (*fu p'i*) and eggplant rolls.

362. Esko, Wendy. 1979. *Introducing macrobiotic cooking*. Tokyo: Japan Publications. 144 p. Foreword by Aveline Kushi. Preface by Edward Esko (both written June 1978). Illust. by Bonnie Harris. Index. 26 cm. Reprinted in 2006 by Square One Publishers (Long Island, NY, 240 p.).

• **Summary:** The author was introduced to macrobiotics in upstate New York in about 1971. This is her first book on macrobiotics. It was originally published under the title of *An Introduction to Macrobiotic Cooking* by the East West Foundation, 17 Station Street, Brookline, Massachusetts 02146. Though copyrighted in 1978, the first edition appeared in Sept. 1979. The fourth printing was May 1981.

The chapter titled “Beans including tofu and natto” gives descriptions of and recipes for making: Japanese black beans (black soybeans, p. 54; “These beans are therapeutic for the sexual organs and will relieve an overly yang condition caused by too much animal food or fish.”) Soybeans (p. 54. “These beans are the most yin of the bean family... It is recommended that soybeans be eaten only occasionally as a separate side dish. Because they are very yin, they should be cooked with yang vegetables such as lotus root or burdock, for balance. The best way to eat soybeans is in the form of *tofu*, *okara*, *natto*, *tempeh*, and, of course, *miso* and *tamari*.”) Tofu, and Homemade tofu (curded with nigari, p. 54-55). Okara (p. 55-56). Tofu and corn. Tofu, onions and water cress. Dried tofu (dried-frozen, p. 57). Yuba (dried soy milk; how to make at home). Vegetables and dried soy milk (p. 57). Ganmodoki (Tofu and jinenjo patties, p. 57-58). Natto (description and how to make at home, p. 58-59).

Other soy-related recipes include: Tofu soup (p. 68). Miso soup (p. 69-70, basic, or quick). Watercress miso soup (p. 71). Daikon and sweet rice dumpling soup (with miso). Chinese cabbage and tofu miso soup (p. 71). Aveline Kushi's miso stuffed lotus root (p. 86). Tofu dressing (p. 91). Miso-tahini spread (p. 92). Miso-sesame spread (p. 92). Miso-lemon sauce (p. 93). Tofu dip (p. 93). Miso with scallions (p. 95). Tamari (description, p. 95). Tekka (made with Hatcho miso, p. 96). Miso pickles (p. 100-01). Tamari pickles (p. 101). Tofu plaster (p. 130). Ume-Sho-Kuzu drink (with umeboshi, tamari and kuzu, p. 131). Ume-sho-bancha (with tamari, p. 131). Use of tamari, miso, and tekka (p. 132).

Also includes instructions for making amasake at home (p. 116; it is a natural sweetener made from fermented sweet rice), and a recipe for Amasake bread (p. 107), instructions for making seitan at home (p. 46-47, using 3½ lb of hard spring or hard winter whole wheat flour; spring wheat flour produces a much softer texture of seitan than the winter variety), and recipes for seitan stew, seitan-barley soup, sauteed vegetables and seitan, stuffed cabbage with seitan, and seitan croquettes (p. 47-49), plus recipes for leftover seitan (p. 125). Address: East West Foundation, near Boston/

Cambridge, Massachusetts.

363. Simonds, Nina. 1979. Chinese cuisine: Bean curd. *Gourmet*. Sept. p. 28-29, 84-91.

• **Summary:** Contains a discussion of regular tofu, fermented tofu (*ch'ou tou fu*, *tou fu ju*), tofu sheets ("bean curd skin," *pai yeh*), tofu noodles (*kan szu*), fried tofu, pressed tofu (*tou fu kan*), and yuba in East Asia, how tofu is made, and 11 recipes. A full-page color photo shows a dish of "Cold bean curd with carrot and celery..." The recipe is given.

Taipei in the morning in Taipei is teeming with food smells, including the aroma of "deep-fried Chinese crullers." But in stark contrast to the delightful panorama of aromas "was a putrid odor that defied classification. That baffling pungent smell, present throughout the entire day in every part of the city, I soon traced to stinky bean curd (*ch'ou tou fu*), a favorite snack of the Chinese."

Vendors of this unsavory delicacy can be found all over the city with their portable deep fryers. "The children in my Chinese family's house, all great fans of the stuff, used to race outside excitedly with empty plates at the stinky bean curd man's call (The smell usually preceded him by two blocks).

"This foodstuff is a type of fermented bean curd which is generally deep-fried and eaten with a choice of soy sauce, vinegar, mashed garlic, and chili paste." It is but one of many bean curd products made by the Chinese.

When a coagulant is added to hot soymilk, the "liquid is transformed into a delicate custardlike substance. Chinese love to eat bean curd in this tender state—sometimes adding a little cornstarch as a stabilizer—with a sugar syrup and softened peanuts or flavored with sesame oil, scallion and pickled vegetable."

The tofu recipes are: (1) *Leng teng tou fu* (Cold bean curd with red-in-snow; from Szechwan, with five 3-inch squares of bean curd). (2) *Pan kan szu* (Cold bean curd with carrot and celery; from Szechwan). (3) *Ma p'o tou fu* (Spicy bean curd; from Szechwan). (4) *Hung shao tou fu* (Red-cooked bean curd with vegetables). (5) *Tung ku p'a tofu fu* (Braised bean curd with black mushrooms; from Szechwan). (6) *Hsieh jou p'a tou fu* (Stir-fried bean curd with crab meat). (7) *Pa pao la Chiang* (Eight-treasure stir-fried vegetables with pork; from Szechwan). (8) *Hsiang tofu fu* (Stuffed bean curd pockets, from Canton). (9) *San hsien kan szu t'ang* (Three-flavor bean curd soup; from Shanghai). (10) *Kuo t'ieh tou fu* (Panfried stuffed bean curd). (11) *San hsien tofu fu tun* (Steamed three-flavor molded bean curd).

364. Aoki, Hiroshi; Ito, Kiyoe. 1979. *Chôri to daizu* [Cooking and soybeans]. Gakken Shoin K.K., Tokyo. 173 p. Illust. Index. 22 cm. [151 ref. Jap]

• **Summary:** Contents. I. Cooking and soybeans. II. Soybean molecules and soybean protein. III. Cooking and traditional soy protein foods. 1. Cooked whole soybeans (nimame),

green vegetable soybeans (*yude-mame*, *edamame*), soy sprouts. 2. Roasted soy flour (*kinako*). 3. Tofu. 4. Deep-fried tofu pouches and tofu burgers (*aburaage* and *ganmodoki*). 5. Dried frozen tofu (*kori-dofu*). 6. Yuba. 7. Natto. 8. Tempeh. 9. Soymilk. 10. Miso (Miso soup, *miso-ni*, *ae-mono*). 11. Shoyu. IV. Cooking and new soy protein products. Address: 1. Prof., Otsuma Joshi Daigaku; 2. Prof., Tokyo Gaku Gei Dai.

365. Barer-Stein, Thelma. 1979. *You eat what you are: A study of ethnic food traditions*. Canada: McClelland & Stewart, Ltd. xii + 13-624 p. Index. 23 cm. [550+* ref]

• **Summary:** This is largely a compilation of information from many other books and articles. On the cover is a color painting of *The Gardener* (or *Vertumnus*), from his series, *The Four Seasons*, c. 1590, by Giuseppe Arcimboldo (or Arcimboldi) of Milano.

In Chapter 12, on China, the section titled "Meats and alternates" (p. 110-13) notes that the soybean is called the "Chinese Cow" [sic, "Cow of China"] because of its versatility. Soybeans are used as whole dry beans and as sprouts, or they can be made into a firm white curd called "Chinese cheese" [sic], which can be used in many different ways. Soybean milk may be used in much the same way that westerners use cow's milk. They are fermented to make the favourite condiment, soy sauce. "Bean curd sauce is fermented bean curd that is packed in jars and sold as red bean curd sauce or white bean curd sauce,..." Cantonese names for soy products are (p. 111-12): *Mien Chiang*: A syrup-like sweet bean paste. *Dow-foo* (tofu). *Foo yu* (fermented tofu). *Tiem jook* (dried yuba, broken into pieces [sweet dried yuba sticks]). *Wow doo* [Wu dou]. Black soybeans. *Dow see* [*doushi*, fermented black soybeans]: Salted, fermented black bean paste [sic, fermented black soybeans] often garlic flavoured and used in small amounts as a condiment or seasoning.

In Chapter 30, on Japan, the section titled "Meats and alternates" (p. 336-37) notes that products made from soybeans include: (1) "Shoyu, a sweetish soy sauce made from wheat and barley [sic], soybeans, salt, and water." (2) Miso, or "fermented soybean paste," used mostly for flavouring soups [miso soup]. (3) Tofu, or soybean curd, is a staple in Japanese cookery. "Its smooth, custard-like texture and bland flavour make it an ideal ingredient. It is extremely versatile and readily absorbs other flavours. Many "restaurants in Japan take great pride in their tofu dishes."

In Chapter 31, on Korea, the section titled "Fruits and vegetables" (p. 350-51) discusses soybeans and their products at length. Soy sauce is used to season *kim* (nori) and other edible seaweeds. Soy sauce is an ingredient in "hot pepper mash" [*kochu jang*]. Soybeans are used to make "soybean mash" [*doen jang*]. Dry soybeans are roasted in an iron pot, then ground, and the roasted soy flour is used as a garnish over rice cakes [mochi] or plain cooked rice;

children enjoy eating the coarser roasted bits that are sifted out of roasted flour or meal. Soybeans sprouts are eaten lightly cooked as a vegetable. Soybeans are also made into tofu (*tu bu*); a brief description of the process is given, in which the drained curds are left in their hemp bag to form a firm cake, which may be cut, dipped into soy sauce, or fried in sesame oil. "Oil can also be made from the soybeans, but it is not commonly used or prepared."

Although commercial soy sauce, made in factories, is now widely available, many Korean households still prepare their own soy sauce each fall. Boiled soybeans are pounded, molded into a cone shape, and set to dry until hard. They are then wrapped with rice straw, hung from eaves, rafters or ceilings, and allowed to ferment for several weeks [until they become *meju*]. During the winter, these fermented cones may be stored in huge rice-straw bags kept in a cool place.

In the spring, break the cone into small pieces and place in a large earthenware jar, nearly filled with water. Add salt, spices, red peppers, and a few charcoal lumps. Leave this in the sun for a few days [sic, 30-60 days] until the molded soybean chunks float to the top and the resulting liquid turns black. Ladle out and filter the black liquid, then boil it to make soy sauce. The solids remaining in the jar are used as soybean mash [after the charcoal is removed].

A portrait photo of the author, with a brief biography, appear on the rear cover and in the Introduction. Address: Ph.D. student, Ontario Inst. for Studies in Education, Toronto, Ontario, Canada.

366. Grigson, Jane. 1979. *Jane Grigson's vegetable book*. New York, NY: Atheneum. 607 p. Illust. (by Yvonne Skargon). Index. 24 cm.

• **Summary:** "Combines recipes and cooking tips with information on the history and lore of every kind of vegetable from artichokes to yams."

The recipe for Mongolian fire pot (Shua yang jou) (p. 224-25) calls for (in the "Sauce"): "5 teaspoons canned fermented red bean curd."

The section titled "Soya beans, mung beans, and bean sprouts" (p. 459-61) notes that bean sprouts are easily grown at home. Soya beans have been grown in China since at least the Western Chou dynasty (1027-770 B.C.).

During the Tang dynasty [618-906 AD] in China, Buddhist vegetarians, in their temple kitchens, "were the first to turn soya bean-curd [sic, yuba] into imitation meats, imitation poultry and imitation fish, which they prepared with great tastiness." The practice continues in China to this day.

Recipes are given for: Stir-fried bean sprouts. Chop suey. Note: When speaking of "bean sprouts" she does not distinguish between soy sprouts and mung bean sprouts. Address: Broad Town & Trôo, England.

367. Hsiung, Deh-Ta. 1979. *Chinese regional cooking*. New

York, NY: Mayflower Books; London: Macdonald. 224 p. Illust. (chiefly color). Maps. 28 cm. 1st American ed.

• **Summary:** A superb and beautiful book, loaded with beautiful color photos printed on glossy paper. It identifies four regional schools: Peking (Northern school). Shanghai (Eastern School). Sichuan (Western school). Canton (Southern school). The Pearl River delta, with Canton as the capital of Guangdong (W.-G. Kwangtung) province, "is undoubtedly the home of the most famous of all Chinese cooking styles... Because Canton was the first Chinese port opened for trade, foreign influences are particularly strong in its cooking." Note: Likewise, what most Westerners have traditionally thought of a "Chinese cooking" comes from Canton.

Archaeological evidence shows that by 5000 B.C. the people of north China had begun to settle down, to farm, and to make painted pottery and cooking utensils. Written records first appeared in about 3500 B.C. "Later, during the Chou dynasty (11th century to 221 B.C.) soy beans were added to the Chinese diet" (p. 32.).

Northern soy-related recipes: Fried bean-curd [tofu] (with 2-3 cakes of bean curd) and a color photo of "A bean-curd factory run by a unit of the People's Liberation Army on the outskirts of Peking" (p. 53). Rinsed lamb in fire-pot (with 2 cakes of bean curd, fresh or frozen, p. 68-71). The Yangtse [Yangtze], China's longest river, is a natural divide between north and south in China. Those in the north eat more wheat and soybeans (p. 94).

Shanghai / eastern soy related recipes: The Yangtse River has already traveled 3,000 miles before it reaches its Lower Plain where many crops, including soy beans are grown (p. 98). A page titled "Buddhist and Taoist dishes," notes that they are vegetarian (actually vegan), since "Chinese vegetarians are not allowed anything remotely connected with animals, including eggs or milk. They get their protein mainly from the soy bean and its by-products, such as bean-curd and imitation meat. Curiously these imitation meats (known as vegetarian meat, chicken, fish, and so on) bear an amazing resemblance to their fleshy counterparts in form, texture and flavor.

"For some unknown reason, the best vegetarian restaurants [in China] are to be found in Shanghai—a thriving commercial center and seaport..." (p. 119). Buddha's fry (with 1 oz. dried bean-curd skin [yuba], p. 120-21). A small color photo shows sheets of dry yuba. Eight treasure bean curd (p. 132). "This recipe used to be called 'Prince's Bean-Curd' and originally appeared in *Sui-yuan Shihtan* (Recipes of Sui-yuan), by the 18th century man of letters and gourmet, Yuan Mei." A small color photo shows fresh bean-curd on a wooden table in a Chinese market stall. Bean curd a la maison (p. 144).

Sichuan / western soy related recipes: Bean curd fish in chili sauce (p. 164). Steamed beef with ground rice (with 1 tablespoon { 15 ml } salted black beans, crushed). 'Pock

marked woman' bean curd (Mabo doufu, with salted black beans, p. 173). This is another nationally popular dish that originated in Sichuan. The woman was the wife of a well-known chef who worked in Chengdu about 100 years ago; she created the dish. Hot and sour soup (with 1 cake bean curd, p. 174). Fish soup (with bean curd, p. 181). Soy braised duck (with Hoi Sin sauce and soy sauce, p. 182).

Cantonese / southern soy related recipes: Fish and bean-curd casserole (p. 194-95). Eight treasure stuffed bean-curd (a well known Hakka dish, p. 198). Squid and peppers with shrimp (prawn) balls (with 1 tablespoon crushed black bean sauce, p. 202-03). Fish head casserole (with 2 cakes bean-curd, p. 203). Steamed bass in salted black beans (p. 209).

Glossary of main ingredients (p. 219-21) has entries for: Bean-curd (tofu, incl. dried bean-curd skin). "Bean sauce: Sometimes called 'Crushed bean sauce,' this thick sauce is made from black or yellow [soy] beans, flour and salt. It is sold in tins... (N.B. Black bean sauce is very salty, while yellow bean sauce is sweeter with sugar added)." Bean sprouts: Of the two kinds, yellow soy bean sprouts are sold only in Chinese provision stores.

A large excellent photo (p. 219) shows: 1. Hoi Sin [hoishin] sauce in white bowl. 2. Salted black beans in can. 3. Light soy sauce in bottle. 4. Dark soy sauce in bottle. 5. Red bean-curd sauce in small brown crock. 6. Crushed yellow bean sauce in bowl. 7. Yellow bean sauce in white bowl.

"Chili paste: Also called 'Chili purée,' is made of chili, soy bean, salt, sugar and flour. Sold in jars; will keep almost indefinitely." "Hoi Sin sauce: Also known as barbecue sauce. Made from soy beans, sugar, flour, vinegar, salt, garlic, chili, and sesame." "Red bean curd sauce: A thick sauce made from fermented bean curd and salt. Sold in cans or jars, will keep indefinitely." "Salted black beans: Whole bean sauce, very salty." Sesame seed oil: Chinese typically use vegetable oils; soy bean oil is very widely used. Soy sauce: "The darker colored sauces are strongest and more often used in cooking, whereas the lighter are used at the table."

368. L' Aurore. 1979. *La cuisine au tofu: Un art Japonais* [Tofu cuisine: A Japanese art]. Quebec, Canada: L' Aurore. 192 p. Illust. No index. 14 x 22 cm. [Fre]

• **Summary:** Contents: I. Introduction: Table of derivatives of soybeans. Some numbers [statistics]. II. Tofu: Utensils, coagulants, method of preparation of tofu, method of preparation of kinugoshi tofu. Other preparations: Soymilk. Soymilk yoghurt [yogurt]. III. Getting started: Fundamental ingredients, tools of the art, techniques for preparing foods. Fundamental recipes: Bouillons, sauces to accompany basic soy sauce, preparations to accompany basic miso, basic sauces, rice, noodles, sesame salt, grilled soybeans, kofu [wheat gluten]. Recipes using gô, okara, tofu, soymilk, kinugoshi tofu, yuba. Glossary. Useful addresses. Bibliography.

Note: This book is largely based on and pirated from *The Book of Tofu* by Shurtleff and Aoyagi (1975). Address: Quebec, Canada.

369. Ng Sock Nye. 1979. *Soya bean—Nutritious food for the people*. Malaysia: Institut Masyarakat Berhad, 9 Lorong Kucing, Pulau Tikus, Penang. 19 p. Illust. 21 cm. [3 ref]

• **Summary:** A very original and informative booklet, containing a photo or illustration (line drawing) of most of the soyfood products discussed.

Contents: Nutritional value of soya bean, soya bean milk (tau chui [soymilk]), soya bean curd (tau fu fah [soymilk curds]), soya bean jelly (tau fu [tofu]), fried bean cake cubes (tau fu pok [deep-fried tofu cubes]), bean cakes (tau kuah [pressed tofu]), dried soya strands (tau ki / fu chok [dried yuba sticks]), soya skin sheets (tau pui; dried yuba), sweet bamboo (t'im chok [sweet dried] yuba), vegetarian duck (chai ak [Buddha's duck made from seasoned and steamed yuba]), vegetarian salted fish (chai kiam hu [Buddha's fish made from tofu spread on yuba]), vegetarian meat (chai tu kar [Buddha's ham made from seasoned yuba; may be steamed]), soya bean sprouts (tau geh [soy sprouts]), soya sauce (tau eu [soy sauce]), salted soya beans (tau chio [Malaysian fermented black soybeans]). Bibliography.

On page 18 is a photo of all the soyfood products discussed on one table, each neatly labeled with its Malaysian name.

370. Boyd, Billy Ray. 1980. *The Buddha-foods of China*. *Asia Mail (The)*. March.

• **Summary:** In Taipei, Canton, or many other Chinese cities or towns you can find Buddhist vegetarian restaurants. The foods, which are displayed in the window, look like pressed duck, sweet-sour pork, chicken soup, fish, etc., and invite you to enter. Yet you will find that these delicacies contain no meats or dairy products. In the island province of Taiwan alone there are almost 100 such eating places, in almost every city and town. "Over the centuries monks and nuns have developed and refined special foods made from various soy products and from gluten." These include tofu (beancurd), gluten meat, and *doupi* [2 Cc = 2 Chinese characters given] "(the tender, fleshy skim from soymilk)." They are high in protein and look and taste remarkably like a wide array of flesh foods. "These foods are manufactured by specialized businesses and sold in market stalls dealing with nothing else. Since the food is prepared in large quantities that same day, it is inexpensive."

Note. This is the earliest English-language document seen (Oct. 2012) that uses the word *doupi* or the terms "skim from soymilk" or "fleshy skim from soymilk" or "tender fleshy skim from soymilk" to refer to yuba.

"When ordering in a Buddhist restaurant, the simplest approach is to ask for the daily special or 'guest food' *kuh fahn*."

Generally it is lay Buddhists, traveling clergy, and people concerned with health who eat at these restaurants.

“The strictly vegetarian regimen is adhered to in Buddhist temples as well. In west-central Taiwan, at the very top of Lion’s Head Mountain (3 Cc) sits the Buddhist temple Shih Yen Tung (3 Cc). The resident nuns and monks here are used to visitors, including occasional westerners, and one can spend the night. As usual in temples, a modest offering of ‘incense money’ is expected to cover the costs of providing food and lodging: a few dollars for an overnight stay, meals taken with the monks and nuns in the communal dining hall. The mountain itself, when not enshrouded in timeless mists, provides a panoramic view of the region. The food served is, of course, the traditional vegetarian kind, unlike at many other temples—on the mountain and elsewhere—of mixed Buddhist and Taoist allegiance.

“Though Buddhism has in many ways been discouraged in Maoist China, the vegetarian tradition there lives on. Two famous temples where resident monks and nuns still serve elaborate vegetarian meals to pilgrims and visitors are T’ien P’ing Shan (3 Cc) in the suburbs of Soochow, and Ling Yin Ssu (3 Cc) in Hangchow. The latter city is noted for being one of the most beautiful in all China, a pre-Liberation favorite of resident foreigners.

“Chinese Buddhist restaurants can be found in several cities in southeast Asia as well, including Hong Kong, Kuala Lumpur, and Singapore. English will often appear on the menu, and/or be spoken by some of the waitpersons. The Chinese Buddhist gustatory tradition did not, unfortunately, survive the cultural transplant to the United States, though recently some non-Chinese have opened a restaurant in San Francisco where one can begin—just begin—to discover the richness and diversity of the traditional Buddhist foods.”

The author, a freelance writer and vegetarian cook, chanced upon and subsequently researched the Chinese Buddhist restaurants during a 4½-year odyssey in Asia. Address: Box 872, Santa Cruz, California.

371. Product Name: Yuba Rolls, and Stuffed Agé Pouches.

Manufacturer’s Name: Soy Plant (The).

Manufacturer’s Address: 211 East Ann St., Ann Arbor, MI 48104. Phone: 313-663-0500.

Date of Introduction: 1980. April.

New Product–Documentation: Talk with Steve Fiering. 1988. June 10. These were developed by Jura McDowell, who was a good cook. The yuba rolls were about 5 inches long and a little less than 1 inch in diameter. He made the yuba (but it was never sold as such) then use it as an outer wrapping around a filling with ground tempeh and soysage. The Agé Pouches were made by deep-frying tofu to make pouches, then opening and stuffing them with a delicious mixture of ground tempeh, and perhaps soysage, nuts, and sweet white miso. They were sold fresh in the deli, and they sold very well. Note: This is the 2nd earliest commercial

soy product seen (Sept. 2011) in which tempeh is used as an ingredient.

372. Yoneda, Soei. 1980. *Shôjin ryôri, osôzai: Take-no-Gosho fû* [Zen vegetarian cookery, side dishes: Kyoto Take-no-Gosho style]. *Kurashi no Sekkei (Designs for Living)* No. 131. 196 p. April. Illust. 30 cm. (Tokyo: Chuo Koronsha). [Jap]

• **Summary:** Filled with hundreds of lovely color photos of prepared dishes, steps in preparation, Zen temples and their art treasures, gardens, and buildings. Many of the recipes include soyfoods, especially tofu, miso, shoyu, and okara. Includes a color portrait of Soei Yoneda (p. 5) and the story of her life and work (p. 165-67). Address: Abbess, Sanko-in Zen temple, Honcho 3-1-36, Koganei-shi, West Tokyo (Musashi Koganei Station).

373. Andoh, Elizabeth. 1980. *At home with Japanese cooking*. New York, NY: Alfred A. Knopf. 254 p. Illust. by Michiko Fujiwara. Index. 25 x 22 cm.

• **Summary:** A beautiful, intimate and very useful book, approachable and suffused with a unique tranquility and charm. The illustrations (line drawings) are exquisite.

Contents: Acknowledgments. Introduction. A note about the romanization of the Japanese language (Hepburn system). In the Japanese kitchen: Techniques and equipment—Grilling, broiling, steaming, braising and simmering, frying, dry roasting, grinding, crushing and mixing, using knives (four types, and how to hold and use them), skewering, straining and mashing, grating, pots and pans, miscellaneous equipment (chopsticks, rice paddle, rice tub, flat fan, bamboo mats, bamboo trays, metal mold, etc.). Meals and menu planning. The recipes: Soups, rice, noodles, braised and simmered foods, grilled and skillet-grilled foods, deep-fried foods, steamed foods, mixed, sauced and tossed foods, pickles, sweet things and beverages. In the Japanese kitchen: Foodstuffs. Suggestions for ordering Japanese foodstuffs, A glossary of Japanese terms.

The very helpful glossary includes (soy related): Abura agé: fried bean curd [tofu]. Aka miso: dark bean paste [miso]. Daizu: dried soybeans. Eda mamé: fresh soybeans. Kikkoman: brand name of soy sauce. Kinako: soy flour [roasted]. Marukomé miso: brand name of medium fermented bean paste. Miso: fermented bean paste. Miso shiru: soup thickened with fermented bean paste. Natto: fermented sticky soy beans. Okara: by-product of fresh tofu-making. Saikyô miso: light bean paste, a brand and regional name. Sendai miso: dark bean paste, a brand and a regional name. Shinshû Ichi miso: medium bean paste, a brand and regional name. Shiro miso: white (or light) bean paste. Shôyu: soy sauce. Teri yaki: glaze grilling. Tôfu: bean curd. Usu kuchi shôyu: thin or light soy sauce. Yuba: thin brittle sheets of soy milk (by-product of tôfu-making).

Note: This is the earliest English-language document

seen (May 2012) that contains the word *Abura-agé* (hyphenated with diacritics). It refers to deep-fried tofu pouches.

Also includes: Each of the basic sea vegetables / sea greens used for food in Japan (ao nori, hijiki, konbu, nori, wakamé, etc.). Umé-boshi: pickled plums.

The book contains excellent recipes and descriptions (see the index) using bean curd [tofu] (7 recipes), eda mame (1), fried bean curd (*abura agé*) (5), grilled bean curd (*yaki-dôfu*) (3), miso (17), and soybeans, dried (1); natto is not mentioned.

Elizabeth concludes the Introduction by explaining: “What I’ve tried to write here is the very book I wish I’d had with me when I started out fourteen years ago.”

About the author (last page and with portrait photo on inside rear dust jacket): Elizabeth, who was raised in New York and graduated from the University of Michigan, traveled to Japan in 1966 to study Japanese, lived with the Andoh family on the island of Shikoku, and married into that family two years later. Shortly after her marriage, she enrolled in a class at the Yanagihara School of Classical Japanese Cooking, where she studied for six years. She has a daughter, Rena, to whom this book is dedicated.

The copyright page states: “Many of the recipes which appear here were originally printed in slightly different form in *Gourmet* magazine, 1975, as part of a 6-part series entitled ‘The Seasonal Japanese Kitchen,’ by Elizabeth Andoh.” Address: Tokyo, Japan.

374. Esko, Edward; Esko, Wendy. 1980. *Macrobiotic cooking for everyone*. Tokyo: Japan Publications, Inc. 272 p. Nov. Foreword by William Tara, Director, Community Health Foundation, London, England. 26 cm. [50 ref]
 • **Summary:** The authors studied in Japan (mostly Kyoto), from Sept. 1978 to May 1979, at which time they returned to Boston. In the summer of 1979 “more than 100 delegates from various regional centers throughout the United States and Canada met in Boston for the first North American Congress of Macrobiotics.” Part I of this book discusses the theory of macrobiotics and Part II gives recipes. Unfortunately, the book has no index, and the bibliography gives no years of publication. There are chapters on: Seitan, fu, and noodles (incl. soba), and Sea vegetables.

Soy-related recipes include: Brown rice and soybeans (p. 90). Miso soft rice (p. 96). Somen with deep-fried tofu (p. 118). Kenchin soup (with deep-fried tofu cubes and tamari, p. 130). Okara soup (p. 132). Miso soups (p. 137-143; 12 recipes are given plus a long letter from Jan Belleme, about how she and her husband, John, who arrived in Japan in late October 1979, are now living with the Onozaki family and studying miso-making there—p. 138-39). Sauteed cucumbers and miso (p. 154). Boiled cabbage, sweet corn, and tofu (p. 155). Udon-vegetable bane (with deep-fried tofu, p. 159). Steamed kale and tofu (p. 161). How to make sprouts (incl.

soybean sprouts, p. 177).

Chapter 5 is titled “Bean dishes, including tofu and natto.” It states (p. 178-79, without citing the source) that “In China and Japan there is a proverb, ‘A man who eats too many beans becomes a fool.’ ... Lima beans and soybeans are both very yin, and require thorough chewing. They should be eaten only on occasion and in small quantities... Kombu can be placed on the bottom of the pot when cooking chickpeas, soybeans, lima beans or kidney, pinto and navy beans. I have found that kombu definitely improves their flavor, and because of its high mineral content, creates a very balanced dish.” To pressure cook soybeans so that they do not clog the steam escape valve, first boil them for 30 minutes. Skim the foam off the top as it rises, and when no more foam rises to the surface you may place them in a pressure cooker and continue cooking until done. Recipes include: Japanese black beans (black soybeans). Soybeans with kombu and burdock. Soybeans with lotus root and salmon. Following a long discussion of tofu, Homemade tofu. Tofu with scallions. Tofu with bonito flake broth. Baked tofu with miso/lemon sauce. Broiled tofu. Tofu loaf. Steamed tofu rolls. Deep-fried tofu cakes. Aburage (Age or deep-fried tofu). Stuffed age pouches. Okara. Okara croquettes. Sauteed natto. Natto rice or noodles. Natto tempura. Dried natto.

Note 1 This is the earliest English-language document seen (May 2012) that uses the term “broiled tofu” to refer to grilled tofu.

Hijiki with soybeans (p. 193). Hijiki and deep-fried tofu (p. 194). Tempuraed tofu-nori rolls (p. 198). Koi-koku (Carp miso soup, p. 220). Daikon and tamari. Scallion miso. Green peppers and miso (p. 224). Miso condiments (p. 226). Tamari. Moromi (p. 227). Rutabaga-tamari pickles (p. 233). Quick miso pickles (p. 234). Tofu tamari dressing (p. 236). Tofu-sesame dressing. Shiro-miso-tofu dressing. Miso dressing (p. 237). Tamari-lemon dressing. Tamari-rice vinegar dressing. Miso-tahini dressing (p. 238). Miso-rice vinegar dressing. Miso walnut dressing. Miso-tahini spread. Sesame miso spread. Miso-nut spread (p. 239). Lentil-miso spread. Lima bean miso spread (p. 240). Tofu dip (p. 243). Amazake (p. 247-48). Clear broth soup with tofu & scallions (p. 253). The glossary lists many soy products plus azuki beans, sea vegetables (many types), gluten, koji, kuzu, mochi, natto, nigari, okara, seitan, tekka, tempeh, umeboshi, unohana (okara), and yuba.

Macrobiotic periodicals include: *East West Journal* (Brookline, Massachusetts). *Kushi Institute Study Guide and Kushi Inst. Newsletter* (Brookline, MA). *The Order of the Universe* (East West Foundation, Brookline, MA). *The Macrobiotic Review* (East West Foundation, Baltimore, Maryland). *Spiral* (Community Health Foundation, London). *Le Compas* (Paris). Note: The date each periodical began publication is not given.

The lengthy section on seitan (p. 110-13) gives a detailed recipe for making seitan at home using the short

method and 3½ lb hard spring wheat flour or hard red winter wheat flour. The broth is made with kombu and tamari. Seitan recipes include: Seitan stew. Seitan fried rice. Stuffed mushrooms (with sauce). Stuffed squash or Hokkaido pumpkin. Address: Boston, Massachusetts.

375. Root, Waverley. 1980. Soybean: An underdog sneaks up on the world's diet. *Los Angeles Times*. Dec. 29. p. I15.
 • **Summary:** "Mahatma Gandhi, after much experimentation with various diets, expressed the opinion that the world's best staple food was the soybean."

This article focuses on uses of whole soybeans and unfermented soybean products such as: Fried soybeans [soynuts] in China and Japan. Cooked whole soybeans, which may be added to soups. The young unripe beans [green vegetable soybeans] may be eaten raw in salads.

Whole mature soybeans may be soaked, ground and made into a white liquid which looks like milk. In China "soybean milk is prescribed for babies allergic to human milk, and it is also recommended for invalids."

"Soybean milk is used in cooking in both China and Japan. It is because of this product that the soybean has been called 'the cow of China.'"

For adult Chinese a "typical breakfast is hot soybean milk with bread—a sesame bun or a cruller."

"A byproduct of soybean milk is soybean milk skin (*fu p'i*) [yuba] which forms on the surface of heated soymilk and can be skimmed off and dried into sheets.

Dried yuba can be "rolled up and deep fried to make the crisp crusty bean sticks (*fu tzu*)" [dried yuba sticks] which appear in both Chinese and vegetarian dishes.

A by-product of the manufacture of soymilk is okara, a high-fiber sediment that is generally fed to pigs in China. Yet okara can be made into pancakes, etc.

"The most important derivative of soybean milk is bean curd [tofu],..." In China it is often pressed, and in both China and Japan it is deep-fried. Or it can be frozen and dried.

376. Bau, H.M.; Debry, G. 1980. L'art de l'utilisation du soja: Habitudes et traditions [The art of soya utilization: Customs and traditions]. *Cahiers de Nutrition et de Dietetique* 15(4):277-84. Oct/Dec. [40 ref. Fre; eng]

• **Summary:** "For many centuries, soybeans have meant meat, milk, cheese, bread, and oil to the people of Asia. Because of their great food value, they not only have long had a definite place in the oriental diet but now belong in the diet of America and of the entire world. In Europe, the use of soybean products in the quotidian diet is still limited, however it is sure that they will be an important factor in the balanced diet of the future."

Note 1. Soyfoods Center has a 16-page English-language translation of this article.

Note 2. *Webster's Dictionary* defines quotidian (derived from the French *quot* = as many as + *dies* = day)

as "occurring every day." Address: University of Nancy, France.

377. Fessler, Stella Lau. 1980. Chinese meatless cooking. New York, NY and Scarborough, Ontario, Canada: New American Library. 298 p. Illust. by Janet Nelson. Index. 20 cm.

• **Summary:** This vegetarian cookbook, which contains more than 180 recipes, demonstrates vividly how much Chinese vegetarian cookery depends on soyfoods—especially tofu (bean curd). The glossary includes excellent descriptions of bean curd—fermented red (*nan-ru*), bean curd—fermented white (*tofu-ru*), bean curd—pressed threads or noodles, bean curd sheets (*tofu-pi* [yuba]), bean curd sheets (*er-ju*), bean curd sheets—pressed or hundred-leaf (*bai-yeh*), bean curd sticks (folded bean curd sheets), brown bean paste or brown bean sauce, bean paste—Szechuan hot bean or spicy soy, bean sprouts—soy or yellow, fermented or salted black beans, Hoisin sauce, Oyster sauce (with soy), soy sauce, soy sauce—light or thin.

The chapter on soups stocks notes that soybeans or soybean sprouts have a delicate flavor and are most suitable for making stock. Soy sprouts, which are much larger than mung bean sprouts, have a more chewy texture and a very sweet, delicate taste; they are often used to strengthen the flavor of a dish (see recipe p. 90).

Soy-related recipes (each with the name written in Chinese characters) include: Mixed pressed bean curd threads (p. 68). Spinach and deep-fried bean curd puff salad (p. 70). Soybean sprout salad (p. 73). Pressed bean curd salad (p. 76). Monks in a storm of wind and snow (Asparagus and bean curd salad, p. 82). Soybean sprout stock (p. 90). Deep-fried bean curd and mung bean noodle soup (p. 93). Spinach and bean curd soup (p. 98). Seaweed and bean curd soup (p. 99). Soybean soup (p. 100). Soybean with fried gluten soup (p. 101). Asparagus and bean curd soup (p. 106). Goddess of Mercy (Kuan-yin) soup (With bean curd and tiger lily bulbs, p. 112-13).

One long chapter (p. 118-160) is titled "Bean curd dishes, mock meat dishes, and mock fish dishes." It gives good definitions of and home-scale recipes for: Bean curd. Deep-fried bean curd puffs. Plain pressed bean curd cakes. Five-spice pressed bean curd cakes. Braised deep-fried bean curd puffs. Bean curd with oyster sauce (not vegetarian). Braised bean curd. Spicy bean curd. Steamed bean curd with spicy bean paste sauce. Bean curd with tomatoes. Bean curd with fresh mushrooms. Cold bean curd. Stubborn stones' obeisance (Fried bean curd with vegetables). Braised frozen bean curd with chives. Braised Fukien [Fujian] bean curd. Stir-fried Chinese chives with pressed bean curd. Stir-fried pressed bean curd with carrots and bamboo shoots. Mock lion's head (with five-spice pressed bean curd). Stir-fried green peppers with mock meat (pressed bean curd). Mock moo goo gai pan (Stir-fried pressed bean curd with

vegetables). Mock roast duck (with dried bean curd sheets and soy sauce). Mock soy sauce chicken (with fresh or frozen hundred-leaf bean curd sheets). Mock velvet chicken (fried bean curd with egg whites). Spicy mock chicken (with mock soy sauce chicken). Mock ham (with dried bean curd sheets). Bock abalone (braised gluten balls). Mock mu-shu pork (with five-spice pressed bean curd, shredded). Fried mock squab (with chopped pressed bean curd). Mock twice-cooked pork (with five spice pressed bean curd). Bean curd with thousand-year eggs.

Other interesting recipes include: Wheat gluten (homemade mein jin or vegetable steak, p. 165-66; At Chinese grocery stores, wheat gluten is sold in various forms—fried, dried, steamed, boiled, canned, and frozen). Fried gluten balls. Boiled gluten. Lo Han vegetable dish (with fried wheat gluten balls, p. 169-70). Chinese mustard greens in black bean sauce (p. 173-74). Stir-fried leeks with bean curd (p. 186). Fresh soybeans stir-fried with fresh mushrooms (p. 187). Boiled fresh soybeans in their pods (p. 188). Bean sprouts stir fried with wheat gluten (p. 190). Stir-fried soybean sprouts with bean curd puffs (p. 191). Cauliflower and bean curd sticks (p. 192). Winter melon with red fermented bean curd sauce (p. 195). Stir-fried asparagus with fermented bean curd (p. 197). Stir-fried lettuce with white fermented bean curd sauce (p. 198). Sweet and sour fried gluten and cabbage (p. 208). Two immortals in the apricot garden (fried gluten with vegetables and almonds, p. 209). Braised eggs with bean curd sticks (p. 213-14). Scrambled eggs with fermented bean curd (p. 214). Bean curd with salted eggs (p. 216-17). Wonton soup (with fresh bean curd, p. 233-34). Fried wontons (filled with five-spice pressed bean curd, coarsely chopped). Soybean milk, sweet soybean milk, and salty soybean milk (p. 247-48). Deep-fried crullers (*yu chiao*; sometimes served in hot soymilk, p. 249-50). Noodles with spicy bean paste sauce (and five-spice pressed bean curd, p. 258-59).

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the term “red fermented bean curd” to refer to red fermented tofu.

Note 2. This is the earliest English-language document seen (Oct. 2011) that uses the term “white fermented bean curd” to refer to regular white fermented tofu. Address: Cornell Univ., Ithaca, New York.

378. Fukushima, Danji; Hashimoto, Hikotaka. 1980. Oriental soybean foods. In: F.T. Corbin, ed. 1980. World Soybean Research Conference II: Proceedings. Boulder, Colorado: Westview Press. xv + 897 p. See p. 729-743. [7 ref]

• **Summary:** Contents: Fermented soybean foods. Non-fermented soybean food. Conclusion. References.

The following statistics show the amount (tons) of whole soybeans / defatted soybean grits / total of whole and grits consumed for various soybean foods and feeds in Japan in 1976.

Fermented soyfoods: Shoyu (soy sauce) 10,000 / 165,000 / 175,000, miso 190,500 / 5,000 / 195,500. Natto 69,000 / 0 / 69,000.

Non-fermented soyfoods: tofu and aburage (fried tofu pouches) 411,500, 55,000 / 466,500. Kori-tofu (dried-frozen tofu) 29,000 / 0 / 29,000. Others 16,000 / 75,000 / 91,000.

Animal feeds: 30,000 / 1,950,000 / 1,980,000. Thus total use for foods and feeds is whole soybeans 756,000. Defatted soybean grits 2,250,000, total of both 3,006,000. By type of use, animal feeds account for 65.9% of total Japanese usage of whole soybeans and defatted grits, non-fermented soyfoods account for 19.5%, and fermented soyfoods account for 14.6%. The top three food users are tofu (466,500 tons, 45.5% of all food uses), miso (195,500), and shoyu (175,000). There are 35,000 tofu plants in Japan.

Fermented soybean foods described are shoyu (soy sauce; 5 types), miso (3 basic types, 6 varieties), sufu (Chinese soybean cheese), tempeh (fermented soybean cake), natto (fermented whole soybeans; itohiki-natto and hama-natto), and fermented soymilk (recently a new fermented soybean product appeared on the market in Japan. It is a soy milk drink fermented by lactic acid bacteria).

Non-fermented soybean foods described are tofu (soy milk curd), aburage (fried tofu pouches), kori-tofu (dried-frozen tofu), yuba (coagulant film of soy milk), kinako (roasted soybean powder), moyashi (soybean sprouts), and soybeans. Production, chemical composition, and use of each of these foods is discussed.

Figures (flow sheets) show: (1) Shoyu manufacturing process. (2) Rice miso manufacturing process. (3) Sufu manufacturing process. (4a) Tempeh manufacturing process. (4b) Natto manufacturing process. (5a) Tofu manufacturing process. (5b) Kori-tofu manufacturing process. Address: Kikkoman Foods Inc., P.O. Box 69, Walworth, Wisconsin 53184.

379. Kan, Johnny; Leong, Charles L. 1980. Eight immortal flavors. Rev. ed. San Francisco, California: California Living Books. xiii + 236 p. Illust. 24 cm. 1st edition 1963.

• **Summary:** The title page states: “Including new recipes kitchen-tested by Master Chef Sun Pui Wong, Executive Chef, Kan’s Restaurant.” This book is almost identical to the original 1963 edition. However Roman numerals have been assigned to the front matter, so the recipes are on different pages. None of the original soy-related recipes or definitions have been changed or deleted.

On the rear cover (undated): “Will probably become a standard reference work... It is admirable for its scope and authenticity.” Address: 1. Chef, Chinatown; 2. Historian of Chinese life in America.

380. Tsuji, Shizuo; Sutherland, Mary. 1980. Japanese cooking: A simple art. New York and Tokyo: Kodansha International. 518 p. Introduction by M.F.K. Fisher. Illust.

(510 line drawings by Yoshito Suzuki. 16 color pages, mostly photos). Index. 27 cm.

• **Summary:** This is a beautiful and informative book by a great Japanese chef, though the awkward English terminology often sounds like “Japlish.” The illustrations are very nicely done, but the artist’s name does not appear in the book. Tsuji is the author of 29 books on gastronomy, travel, and music. His basic thesis is that “like Japanese and poetry, cooking is simply the result of an acute awareness of the seasons, Freshness and naturalness are the *sine qua non* of Japanese cuisine.”

This definitive treatise on Japanese cooking, the most complete and well-thought-out to date, is written by the head of the *Ecole Technique Hoteliere Tsuji*, the technical hotel school in Osaka, Japan. This is the “largest school training professional chefs in Japan,” according to the publisher.

The excellent “Ingredients” section (p. 53-100) gives detailed descriptions (with Japanese characters) of: Azuki beans (p. 55). including red rice (*sekihan*) and “sweet red-bean paste” (*an*). Bean curd (*tôfu*, p. 56-61) incl. *momen* tofu (regular; “The type described here as ‘regular’ is known in Japan as *momen*—‘cotton’ tofu... ‘Cotton’ bean curd is the type most commonly used in Japan”), *kinu-goshi* (silk tofu), *yakidôfu* (lightly broiled or grilled bean curd), *atsu-age* or *nama-age* (thick cakes), *aburage* or *usu-age* (thin deep-fried tofu), *ganmodoki* (mixed tofu), *kôya-dôfu* or *kôri-dôfu* (“freeze-dried bean curd”), *yuba* (“soybean milk ‘skin’” [soybean milk skin]), *okara* (“bean curd pulp or ‘lees’”).

Note 1. This is the earliest English-language document seen (May 2012) that contains the term *atsu-age* or the term *usu-age* or the term “thin deep-fried tofu” (all regardless of hyphenation), all of which refer to types of Japanese of deep-fried tofu.

Miso (p. 76-77) incl. *shiro-miso*, *Shinshû-miso*, *inaka-miso*, *Hatchô miso*, *akadashi miso*. Soybeans and *edamame*. Soy sauce (*shôyu*, p. 90-93) incl. Natural Japanese soy sauce, synthetic soy sauce, *Kikkoman*, light soy sauce (*usukuchi shôyu*), *tamari* (“In Japanese cooking *tamari* is generally used as a dipping sauce or a base for basting sauce such as *Yakitori Sauce*”). “Dutch traders in Nagasaki in the seventeenth century exported soy sauce to Europe, and it was the secret seasoning served at the court banquets of Louis XIV of France” (sic). *Kuzu* (p. 93-94). Wheat gluten (p. 98, 60).

Soy-related recipes include: Making soups (p. 151-56). Miso soup (*Miso-shiru*, p. 156-57). Ginger soy sauce (*Shôga-jôyu*, p. 172). Ponzu sauce (p. 172, with soy sauce and *tamari*). Mustard-vinegar miso sauce (*Karashi-su-miso*, p. 172-73). *Dengaku*, *dengaku miso toppings*, and bean curd *dengaku* (*Tôfu dengaku*) (p. 190-93). *Teriyaki* (p. 199-202, 370; the meaning in the United States is now different from the original meaning in Japan. Definition and history, homemade *teriyaki sauce*, *teriyaki yellowtail*, *chicken teriyaki*, *steak teriyaki*). Egg “tofu” (*Tamago-dôfu*,

p. 216). Dressings for *aemono* (salads, p. 246, incl. white tofu dressing, white miso dressing, red miso dressing). Rice with miso soup and pickles (p. 270-71). *Nori-roll sushi* (*Nori-maki*, p. 300, with freeze-dried bean curd). Fox noodles (*Kitsune udon*, p. 312). Pickling vegetables (*Tsukemono*, p. 315, 318, with miso). Pureed corn soup (*Tômorokoshi surinagashi-jiru*, p. 347, with miso). Thunder soup (*Kaminari-jiru*, p. 349, with “1 cake *tôfu* (bean curd)” and “2-3 cakes thin deep-fried *tôfu* {*aburage* or *usage*}, cut into julienne strips). Potatoes simmered in miso (*Jaga-imo miso-ni*, p. 393). Radish with white miso sauce (*Furofuki daikon*, p. 394). Chinese cabbage and deep-fried tofu (*Age-dôfu hakusai-ni*, p. 398). Tortoiseshell tofu (*Tôfu bekkô-ni*, p. 398-99). Fried and simmered freeze-dried tofu (*Kôri-dôfu age-ni*, p. 399-400). Gold purses (*Fukuro*, p. 400, with thin deep-fried bean curd). Deep-fried tofu (*Agedashi-dôfu*, p. 412-13). Green beans with sesame-miso dressing (*Sandomame goma-miso ae*, p. 420). Savory okra (cold) (*Okura wasabi-joyu*, p. 420-21). Tangy white salad (*Shirazu-ae*, p. 421-22). “River Bank” oyster stew (*Kaki dote-nabe*, p. 433-34, with miso). Simmering tofu (*yudôfu*, p. 436-37). Mushroom rice (*Shiitake gohan*, with “1 cake thin deep-fried bean curd (*aburage* or *usage*),” p. 438-39). Soybeans in the pod (*Edamame*, p. 471-72).

Murasaki (p. 287): Japanese love *sushi* so much that they have developed a special aficionado’s vocabulary. “At a *sushi* restaurant, you do not ask for soy sauce as *shôyu*, but, rather, as ‘purple,’ or *murasaki*. Every shop has its own house sauce, made by reducing soy sauce or thicker *tamari* sauce over heat with *saké*, *mirin*, bonito flakes and so on.” Since the resulting sauce is darker than regular soy sauce, the name *murasaki* seems appropriate.

The recipe for Abe River mochi (Abe-kawa mochi) uses “1 cup *kinako* (roasted soybean flour)” as a major ingredient (p. 469).

Concerning azuki beans (red beans; characters small + bean) (p. 55): “This small, red bean is the legume you will most frequently encounter in Japanese cooking besides soybeans (*daizu*). It is used in the cooking of many countries, so it is stocked in most supermarkets throughout the United States. For some historical reason this bean is commonly spelled *adzuki*. This spelling is a Victorian romanization; phonetically, *azuki* is correct.

“These beans are steamed with glutinous rice on special occasions to make the festive red rice (*sekihan*; p. 280). They are more commonly boiled with sugar to make sweet red-bean paste (*an*), which forms the base of a large percentage of Japanese sweet confections (see p. 327). *An* is made in two textures: smooth puree (*koshi-an*) and ‘chunky,’ with beans partially crushed (*tsubushi-an*). If there is no time to make *an* from scratch, ready-made *an* is available canned and stocked in most Japanese food stores.”

Note 2. This is the earliest English-language document seen (March 2006) that uses the term “sweet red-bean paste”

JAPANESE COOKING A SIMPLE ART

Shizuo Tsuji

introduction by
M. F. K. Fisher



to refer to sweet azuki bean paste [*azuki-an*], or the term “smooth puree” to refer to *koshi-an*, or the term “chunky” to refer to *tsubushi-an*. Address: Tsuji Professional Culinary Inst., Osaka, Japan.

381. Root, Waverley. 1981. A cordial bow to the byproducts of the soybean. *Los Angeles Times*. Jan. 15. p. J42.

• **Summary:** This article is indebted to: Simonds, Nina. 1979. “Chinese cuisine: Bean curd.” *Gourmet*. Sept. p. 28-29, 84-91.

The soybean, which offers extraordinary versatility as a human food, can be transformed into soybean milk, “the soybean milk skin [yuba] derived from the milk, the bean sticks [dried yuba sticks] made from the milk skin, the also edible sediment given off by the milk [okara], untreated bean curd [regular tofu and perhaps silken tofu], pressed bean curd which produces bean curd noodles [pressed tofu noodles], more tightly compressed bean curd cakes, and frozen-and-thawed bean curd [dried frozen tofu].” Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “frozen-and-thawed bean curd” to refer to dried frozen tofu.

In the process of making “pressed bean curd, another soybean food is created—bean curd skin [*pai yeh*, pressed tofu sheets], which should not be confused with soybean milk skin [yuba]. Dried bean curd skin,” which needs no refrigeration and is often stuffed, for example with chopped meat, is sold by weight by Chinese specialty shops throughout the world; five or six sheets weigh one ounce.

“There is a whole family of foods made from fermented bean curd” [fermented tofu]. Bean curd can be fermented in various ways. Bean curd loaves, for example, can be stored for the winter in a cool dark place; micro-organisms from the air cause fermentation. “The loaves acquire a fungoid coating, which has to be scraped off, and as far as I know is not used for food,...” Fermented bean curd, which has been called “soybean cheese,” is easier to digest than unfermented bean curd. Bean curd can also be marinated in rice wine, flavored with spices, and then allowed to ferment. A most unusual type of fermented tofu is stinky bean curd (*sh'ou tou fu*), a favorite Chinese snack. In Taipei, there are many street vendors who ply the streets with their portable deep fryers. This fermented tofu is usually deep-fried and usually eaten with one's choice of soy sauce, vinegar, mashed garlic, and chili paste.

Other fermented foods include miso, natto, hamanatto (which is of Korean origin), tempeh (of Indonesian origin), and shoyu (Soybean sauce, soy sauce).

“It is said that the best grades of soy sauce can take as much as six to seven years of aging to reach perfection, and that the making of a superb soy sauce requires ‘as much art in its preparation as good French wines.’”

Flavorings are added to some Chinese soy sauce “various herbs, especially citronella; spices (ginger);

aromatic vegetables (onions); and not only fermented fish, but even fermented chicken meat. To produce three liters (3.1 quarts) of sauce requires on kilogram (2.2 pounds) of beans.

“Fukien has the reputation of producing the best soy bean sauce in China and consequently stews many foods in it, giving them a color which has caused the culinary techniques of this region to be called ‘red cooking.’”

Soybean sauce is “often an important ingredient in many more complicated sauces—for instance Hoisin sauce in China and Worcestershire sauce in England.”

382. Chu, Yung-shung. 1981. Soybean protein food in China. *J. of the American Oil Chemists' Society* 58(2):96A, 98A, 100A. Feb. Reprinted in *APCC Quarterly*, 30 June 1981, p. 23-27.

• **Summary:** Contents: Abstract. Methods of preparation: Bean curd (tu fu), bean curd derivatives (tough bean curd, smoked tough bean curd, dried soybean sheets, fried bean curd, vegetable chicken), fermented bean curd (fu ru), dried bean milk cream (fu tsu [dried yuba sticks]).

For 4,000 years soybean have been one of the main crops cultivated in China. The history of extracting protein to prepare tofu is about 1,000 years old. The soybean was important not only as a food but also as a seasoning. The earliest fermented soybean products were dou-jiang (soybean ch'iang) and dou-chi [fermented black soybeans].

Note: This is the earliest document seen (Nov. 2011) that uses the term “dou-chi” to refer to fermented black soybeans.

The preparation of these two products was recorded briefly in *On Medical Emergency Treatment* written by Si Yu during the Western Han Dynasty (100 B.C.). [Note: This is the *Chi chiu p'ien* by Shih Yu.] Later, these procedures were described in detail in the *People's Agricultural Calendar* written by Cui-Zi during the Han Dynasty (200 A.D.). Illustrations of techniques appeared in 600 A.D. in special chapters of *The Principal Methodology of Economics*, by Jia Si-Yi.

According to historical literature of the Min [Ming] and Qing [Ch'ing] Dynasties, the preparation of bean curd [tofu] was first recorded in Han Zi, written by Liu An, King of Huai Nan (179-122 B.C.) In the book of Qin-Yi, Tao Gu (907-960 A.D.) said that bean curd was a common food in the market of the south Huai district.

Fu ru is the fermented form of bean curd. The earliest record of this is in the book called *Night Dialogue Under the Shade*, written by Li Ri-huo (1636-1661). He said that fu ru was prepared between summer and autumn in the Qi Men district and briefly described the procedure. In a famous book on Chinese herbal medicine, *Compendium of Materia Medica*, the author, Li Shizen (1518-1593), describes the preparation technique in detail.

Later, these procedures were described in detail in the *People's Agricultural Calendar* written by Cui-Zi during the Han Dynasty (200 A.D.). Illustrations of techniques

appeared in 600 A.D. in special chapters of *The Principal Methodology of Economics*, by Jia Si-Yi. Address: Oil and Fat Research Inst., Shaanxi, China.

383. Shurtleff, William. 1981. Dr. Harry Miller: Taking soy milk around the world. *Soyfoods* 1(4):28-36. Winter.
 • **Summary:** Contents: Introduction. Growing up (1879-1902): Birth, early contact with Dr. J.H. Kellogg, marriage. Early years in China (1903-1911). Washington, DC (1912-1925). Pioneering soy milk in China (1925-1939): Research, development of plant, destruction of plant 13 Aug. 1937, U.S. patent, No. 2,078,962 for soy milk process and equipment, work before return to U.S. Introducing soy foods to America (1939-1949): In Mt. Vernon, new products, work with AMA, American Soybean Assoc. speaker and lifetime member 1958, contact with K.S. Lo and Vitasoy. Research and work around the world (1949-1977): Quick visit to Shanghai, death of second wife, sale of International Nutrition Foundation, Taiwan work, Indonesian plant, Trinidad, Libya, Japan, old age and relationship with William Shurtleff, the "Great Man." Contains 5 photos, and a sidebar titled "Early History of Soy milk."

Among the many people who pioneered in bringing soy foods to America and to the West, two men of great vision, dedication, and perseverance deserve special mention: Dr. Harry W. Miller and William J. Morse. Dr. Miller, the well-known 'China Doctor' (after his biography by that title), was a world-famous missionary doctor and surgeon, and founder of more than 15 Seventh-day Adventist hospitals around the world. He was one of those unique individuals who was both a dreamer and a doer, and who inspired almost everyone who knew him.

"Like W.J. Morse, he considered it his personal responsibility to awaken the West to the wonders of the soybean and to promote its use as food. (But where Morse was interested in soybean agronomy, livestock feeding, and food, Miller was interested only in food uses.) Dr. Miller can also be considered the founder of the modern soy milk renaissance in Asia. The development and popularization of soy foods, and especially soy milk, was his lifelong hobby and despite his other numerous and demanding careers, he never lacked the time, over a span of almost 75 years, to continue his ongoing research and work in this new field that he loved so well.

"Growing Up (1879-1902): The first of five children of Amanda Ehlers and John Oliver Miller, Harry was born in a log cabin on a farm in the small town of Ludlow Falls, Ohio (just north of Dayton) on 2 July 1879. His father was a school teacher. He later wrote that he delighted in working on the family farm but found it 'disgusting' to have to kill and eat the animals he had raised. When he was 12, Harry's parents became Seventh-day Adventists. Two years later, after much study, at the annual camp meeting, he and a friend decided to be baptized and become Adventist church

members.

"At age 15 Harry entered secondary school at the Adventist-run Mt. Vernon Academy in Mt. Vernon, Ohio. He loved the strict, puritan atmosphere, the vegetarian diet, and the teachings of the church. In 1898, at age 19, he enrolled in medical school at the newly opened, Adventist-run American Medical Missionary College in Battle Creek, Michigan, which was associated with Dr. John Harvey Kellogg's Battle Creek Sanitarium (founded in 1866), the largest and most progressive medical institution of its kind in America at that time, and the birthplace of modern dietetics. Opposing the popular cures of the day (drugs, bleeding, etc.), the sanitarium recommended diet (especially a simple grain-based vegetarian diet), exercise, hydrotherapy and good mental health as the foundations of healthful living and natural healing. These teachings had a lifelong effect on Miller.

"Working to pay his own tuition, room, and board, Miller led guided tours through the sanitarium and food factory, which forced him to learn more about the various foods (America's first meat analogs and breakfast cereals) and how they were made. Miller was deeply influenced by the personality and teachings of Dr. J.H. Kellogg, who personally taught a number of the classes Miller attended, treated him like a son, and helped put him through college. One of America's great pioneers of both nutrition and of soy foods, Kellogg stressed to the small class the importance of preventive medicine, nutrition, and diet. He strongly opposed the use of alcohol, tobacco, caffeine, and narcotics. Miller later noted that almost all the students in the small class lived past the age of 90; Kellogg lived to age 91, Miller to 97½ and one classmate to 101.

"Miller graduated in 1902 and was married to a classmate-doctor, Maude Thompson, the same year. During an internship autopsy, Dr. Miller cut his finger badly and suddenly contracted systemic blastomycosis, an infection considered at the time to be fatal. With deep faith he prayed to God, promising that if he were to be healed, he would go anywhere in the Lord's service. To the astonishment of his doctors, Miller was miraculously healed. This greatly deepened his faith. Shortly thereafter a call came from the Adventist church for a missionary doctor in China. Miller accepted the challenge. For the rest of his life he prayed for his patients before all operations (minor or major), and, according to others, apparently his great faith was rewarded by their recovery.

"Early Years in China (1903-1911): In October 1903, Dr. Miller and Maude, together with another physician couple, sailed for China, stopping briefly in Japan. In Kobe, at the home of fellow Adventists, Myrtle Lockwood first introduced Miller to soy foods serving an entree called Tofu Loaf, with which Miller was particularly impressed. In China the couple went deep into the interior, near the center of Honan Province, where they found great poverty

and malnutrition. They both learned Chinese, dressed like the local people, and even adopted the hair style of a long queue and shaved pate. They also ate Chinese foods, and soon Miller was visiting local tofu shops, learning about and sampling tofu, yuba, curds, soymilk, and the like. He found that tofu was much more widely consumed than soymilk, although the latter was quite widely used as a spicy hot breakfast soup and a warm, sweetened beverage. Dr. Miller later said (1961) that many Chinese and other East Asians told him that they did not drink much soymilk since they believed it caused them intestinal disturbances, which tofu did not. Perhaps this was why soymilk was not generally fed to infants-and children.

“In 1905, Dr. Miller’s beloved wife died suddenly of an unknown disease. He was 26. Out of his deep sadness grew an even deeper commitment to help the impoverished and suffering millions of China. After a brief return to America two years later, where he married Marie Iverson, Miller returned to Shanghai. Two daughters were born in 1908 and 1910. Then Dr. Miller contracted a severe unknown disease and was forced to return to America in 1911.

“Washington, D.C. (1912-1925): Miller eventually managed to heal himself of what he later learned was a vitamin deficiency illness called sprue. During recovery he taught the Bible at Mt. Vernon Academy, his former alma mater and in 1912 his first son, Harry Willis, Jr., was born. Soon he was called to the position of medical superintendent and surgeon of the Adventist-run Washington Sanitarium and Hospital, which he developed into a Mecca for congressional leaders of the day. He became consulting physician to three U.S. presidents. In Washington he pioneered new techniques of thyroid goiter surgery, which lowered fatalities from 50 percent to about one percent. He eventually performed over 6,000 goiter surgeries around the world. In Washington he also met Dr. W.J. Morse and Dr. J.A. LeClerc, both soy pioneers from the USDA. He later wrote that these men filled him with ‘inspiration, enthusiasm, and information,’ and both later made frequent visits to Miller’s soymilk plant in Ohio. In 1915 a fourth child, Clarence, was born.

“Prior to 1917 the Sanitarium had used a lot of dairy products on its vegetarian menus, but in that year, with World War I under way, all milk supplies from the local dairy were requisitioned by the Walter Reed Military Hospital. The sanitarium bought its own herd, but the problems that Miller found with contamination, animal disease (tuberculosis), and the like, convinced him of the need to develop a good alternative to dairy milk. In the small food plant connected with the hospital, where several soyfoods were already being produced for use in the lacto-vegetarian diet, Miller began a few basic soymilk experiments in 1925.” Continued. Address: Lafayette, California.

384. Barber, Linda. 1981. Report with color slides on trip to Yuba Han in Kyoto, Japan. Kobe, Japan. 1 p. Based on

e-mail of Jan. 2012.

• **Summary:** Linda took these color slides during a trip in 1981 to Yuba Han, an old yuba making company in Kyoto. She got the idea of visiting Yuba Han from *The Book of Tofu*, by Shurtleff & Aoyagi. Photos show:

(1) Top of a traditional caldron (with ladles, dippers and a water source) where soaked, ground soybeans are cooked. (2) Traditional stone weights and wooden lever used to press thick soymilk from okara in pressing sack. (3) From soybeans to yuba.

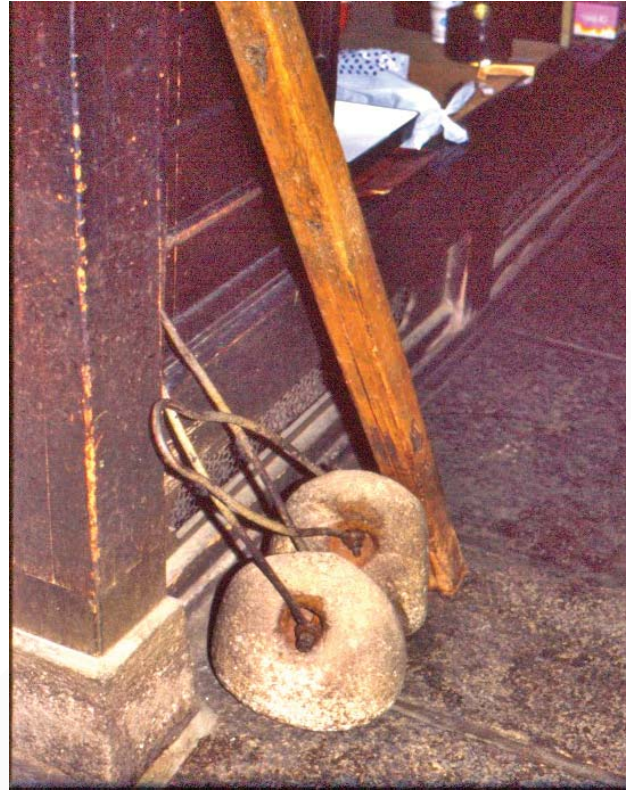
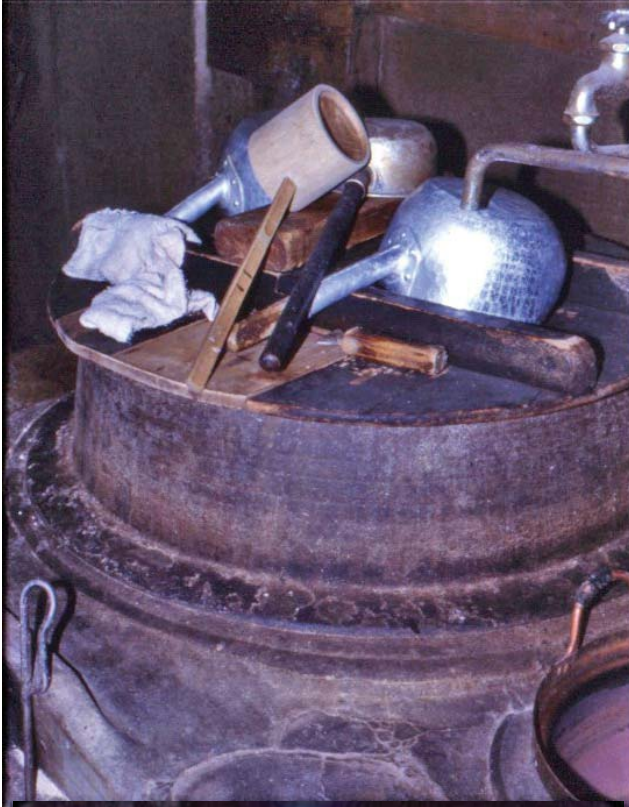
(4) Soymilk cooked in large flat pans. Film forming on top of milk. Film has been lifted off, drained and then rehung on dowels / long round sticks to dry. (5) Craftsman (yuba maker) taking off films of soymilk and preparing to stretch over dowels. (6) Craftsman standing between two double rows of simmering soymilk in steamy room. (7) Craftsman working on far side of two rows of yuba trays. (8) Fresh yuba and drying yuba hanging on dowels over frames in which yuba is forming. (9) Ditto. (10) Yuba hanging on dowels as it dries. (11) Flat pieces of dried yuba in a box, ready to be sold. (12) Fresh yuba used as a wrap around a filling of tofu and vegetables. Address: Resident Director of Practice House and Oral English Instructor, Kobe College, 4-1 Okadayama, Nishinomiya, Japan.

385. Fukushima, D. 1981. Soy proteins for foods centering around soy sauce and tofu. *J. of the American Oil Chemists' Society* 58(3):346-54. March. [41 ref]

• **Summary:** Contents: Abstract. Introduction. Soy sauce varieties: Koikuchi, usukuchi, tamari, saishikomi, and shiro shoyu. Soy sauce manufacturing process (for each of the 5 types). Miso. Other fermented products: Tempeh and natto. Tofu and related products: Regular and silken tofu, dried-frozen tofu, deep-fried tofu. Fermented tofu (Sufu). Other soy products: Soy milk, fermented soy milk beverages, yuba.

This paper discusses traditional Oriental soy protein foods which are growing rapidly in popularity in the USA among non-Asian-Americans.

“Generally speaking, soy sauce is divided into two groups: fermented soy sauce and chemical soy sauce. Fermented soy sauce has a long history as a human food, whereas chemical soy sauce has a history of only several decades. In fermented soy sauce, the proteins and carbohydrates contained in the materials are hydrolyzed very slowly under mild conditions below 30°C for over six months, whereas in chemical soy sauce they are hydrolyzed quickly by hydrochloric acid at 80°C for 8-10 hours. Chemical hydrolysis is a cheap and rapid process, but during the hydrolysis, various secondary reactions occur and produce undesirable compounds, e.g. dark humins, furfural, dimethyl sulfide, hydrogen sulfide, levulinic acid and formic acid, which are not present in fermented soy sauce. Furfural, dimethyl sulfide and hydrogen sulfide, which have strong, bad odors in themselves, are derived from pentose,







methionine, and sulfur-containing amino acids respectively. Furthermore, tryptophane, one of the nutritionally important amino acids, is destroyed almost completely. As shown in Figure 1 [two chromatograms], the main organic acid of fermented soy sauce is lactic acid, whereas the main organic acid of chemical soy sauce is formic acid. Levulinic acid, present in chemical soy sauce, does not exist naturally.

“To improve the odors of chemical soy sauce, semichemical soy sauce was devised. It is made by hydrolyzing raw soybeans with a lower concentration of hydrochloric acid (7-8%) as the first step, followed by fermenting the hydrolysate with osmophilic yeasts in the presence of wheat koji.” In Japan, chemical soy sauce is not used as a soy sauce in itself, but as an extender for fermented soy sauce.

Table 1 gives the typical chemical composition (per 100 ml) of the five varieties of traditional soy sauce in Japan, including Bé [Baumé; a measure of the relative density of liquids], sodium (koikuchi is lowest at 17.6%, usukuchi is highest at 19.2%), total nitrogen (koikuchi has 1.55 gm, tamari has 2.55 gm or 65% more), formol nitrogen, reducing sugar, alcohol (koikuchi is 2.2%, by far the highest), pH (ranges from 4.6 to 4.8), and color.

A brief description of each of the five traditional varieties: (1) Koikuchi: This “dark-colored” shoyu is by far the most popular of the five types of fermented soy sauce in Japan, comprising 85% of the total. It is an all-purpose seasoning with a strong aroma, complex flavor, and deep, reddish-brown color. These characteristics are mainly derived from the use of equal amounts of wheat and soybeans in the koji; (2) Usukuchi [light-colored] shoyu is characterized by a lighter, red-brownish color and a milder flavor and aroma. It is used mainly for cooking when one wishes to preserve the original flavor and color of the food itself. As in koikuchi, equal amounts of soybeans and wheat are used in the koji, but the fermentation is done under conditions which prevent the development of a dark color. (3) Tamari shoyu has a higher amino acid content, but it lacks aroma. The koji is made primarily from soybeans with little or no wheat. (4) Saishikomi (twice-fermented) shoyu is made using equal amounts of wheat and soybeans in the koji, but using raw (unpasteurized) soy sauce instead of salt solution, which is mixed with the harvested koji. Saishikomi is characterized by aroma and full-bodied taste. (5) Shiro (clear, or “white”) shoyu is made by using a very high ratio of wheat to soybeans in the koji, and further by fermentation under conditions which prevent dark color development. It is characterized by a very light yellow to tan color, though the amino acid content is very low because of the low soybean content in the koji. Flow sheets (Figures 2-5) show the process for manufacturing koikuchi, usukuchi, and tamari shoyu. Each has three basic parts: Koji making process, brine fermentation process, and refining process.

Concerning soy sauce production and consumption:

The total annual production of soy sauce in Japan in 1979 reported by the Japanese Agricultural Standard (JAS) was 1,252,431 kiloliters (kl). In 1979 in Japan, about 70% of the soy sauce products in Japan were purely fermented, 25% contained some semichemical soy sauce, and the remaining 5% contained chemical (HVP) soy sauce. The most recent estimates of annual consumption of soy sauce in the USA are as follows: Fermented soy sauce 17,850 kl; Chemical (HVP) soy sauce 25,500 kl. Within fermented soy sauce, production of koikuchi soy sauce is estimated to be 16,500 kl/year.

In Japan an “instant tofu powder” is actually a spray-dried soy milk. This product was made and introduced by *Nihon Tanpaku Kogyo* (Japan Protein Industry) about 15 years ago (ca. 1966) and was used mainly as a raw material for making regular or silken tofu in order to save time. “Recently, however [1973], the product was placed on the market as an instant powdered tofu [named *Hausu Hontôfu*] by Hausu [House] Foods Co.”

Other figures show: (5) Manufacturing process of rice miso. (6) Manufacturing processes of soy milk used for making tofu, regular tofu, and silken tofu. (7) Manufacturing process of freeze-dried tofu (kori-tofu). (8) Manufacturing process of fermented soy milk beverage. *Lactobacillus casei*, *L. acidophilus*, and *L. bulgaricus* are usually used as starters. One such product recently appeared on the market in Japan.

A photo shows D. Fukushima. Address: Kikkoman Foods, Inc., Walworth, Wisconsin 53184.

386. Soyfoods Center; Soycrafters Assoc. of North America. 1981. Soyfoods Production in America and the West (News release). Lafayette, California: New-Age Foods Study Center. 1 p. April. Updated in Sept. 1981 in a neater format. • **Summary:** A table shows production statistics for 25 types of soyfoods. Number of manufacturers in the USA, Canada, Other West, Total; Tons of raw soybeans/year used by each food. Yield of food from 1 unit weight of soybeans. Wholesale value. Retail value. Number of people employed. Address: P.O. Box 234, Lafayette, California 94549.

387. Wang, Hwa L. 1981. Oriental soybean foods: Simple techniques produce many varieties. *Food Development* 15(5):29-34. May.

• **Summary:** Methods of preparation are given for the following soyfoods: Tofu, soy sauce, miso, hamanatto, sufu, tempeh, natto. A table gives local names, descriptions, and uses for traditional East-Asian non-fermented soyfoods: “Fresh green soybeans (mao-tou, edamame),” soybean sprouts (huang-tou-ya, daizu no moyashi), soybean milk (tou-chiang), protein-lipid film (tou-fu-pi, yuba), soybean curd (tofu, tou-fu, tubu, tahoo, touhu, tafoo, dou-fu, dan-fu), and soybean flour (tou-fen, kinako). Local names, organisms used, substrate, and description of the product are given for traditional East-Asian fermented soyfoods: soy sauce, miso, hamanatto, sufu, tempeh, and natto.

Note: This is the earliest English-language document seen (Feb. 2004) that uses the word “tafoo” to refer to Chinese-style tofu. Address: NRRC, Peoria, Illinois.

388. Chu, Yung-shung. 1981. Soybean protein food in China. *APCC Quarterly Supplement*. June 30. p. 23-27. [Eng]

• **Summary:** This article was first published in the Journal of the American Oil Chemists’ Society (1981, Feb. p. 96A). Address: Oil and Fat Research Inst., Shaanxi, China.

389. Shurtleff, William; Aoyagi, Akiko. 1981. *Das Tofu-Buch: Nahrung fuer alle Band 2* [The book of tofu: Food for mankind. Vol. 2]. Soyen, West Germany: Ahorn Verlag. 288 p. Illust. by Akiko Aoyagi Shurtleff. Index. July. 23 x 21 cm. Translated from the English by Rainer Bosch and Gudrun Klein. [43 ref. Ger]

• **Summary:** Contains 500 recipes. Contents: How to use this book. Preface. Acknowledgements. 1. Protein East and West. 2. Tofu as a food. 3. Getting started. 4. Soybeans. 5. Fresh soybean puree (*Frisches Sojapüree*). 6. Okara. 7. Soymilk curds and soymilk (*Sojaquark und Sojamolke*). 8. Tofu (History, how to make at home, basic preparatory techniques). 9. Recipes for regular and firm tofu. 10. Deep-fried tofu: tofu cutlets, burgers, and pouches (*Vorfritierter Tofu: Tofuschnitzel, Tofuburger, Tofutaschen*). 11. Grilled tofu (*Gegrillter Tofu*). 12. Frozen and dried-frozen tofu (*Gefrorener Tofu und gefriergetrockneter Tofu*). 13. Fermented tofu (*Fermentierter Tofu*). 14. Soymilk (*Sojamilch*). 15. Silken tofu (*Seidentofu*). 16. Yuba. 15. Tofu and yuba in China, Taiwan, and Korea. 17. Farmhouse tofu for large families. 19. The ethos and tradition of handmade tofu production. 20. Making tofu in a traditional shop. Appendices: A. Tofu restaurants in Japan. B. Varieties of tofu in East Asia. C. People and institutions connected with tofu worldwide (Incl. directory of tofu manufacturers). D. Sources of supply for tofu production. Bibliography. Glossary. Favorite tofu recipes. About the authors and their work (autobiographical). Tofu—An opportunity for poor and rich lands. The tofu kit (from Sojaquelle in West Germany and Oekullus in Switzerland).

Note 1. This is the earliest publication seen that uses term “Tofurei” to refer to tofu shops/manufacturers. The term was coined by Gabriele Furth-Kuby of Ahorn Verlag.

Note 2. “Sojaquark” is used to refer to soymilk curds rather than to tofu. Published in a hardcover edition only. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

390. Hymowitz, T.; Newell, C.A. 1981. Taxonomy of the genus *Glycine*, domestication and uses of soybeans. *Economic Botany* 35(3):272-88. Sept. [100 ref]

• **Summary:** Contents: Taxonomic history of *Glycine*. Domestication [and dissemination of the soybean]. Uses [of the soybean] (The four most important foods developed

from the soybean in East Asia are miso, shoyu (soy sauce), tempeh, and tofu). “These traditional foods have little physical or flavor identity with the original bean. Hence it is not too surprising that Marco Polo, who traveled from Venice to Cathay and throughout the Orient between 1271 and 1295, makes no mention of the soybean (Rugoff, 1961).”

The earliest accurate description by a European seen for the use of soybeans as food was by Friar Domingo Navarrete. He wrote about them in 1665.

East Asian nonfermented soy foods: Tofu, soy milk, yuba, kinako, sprouts, green soybeans.

East Asian fermented soy foods: Miso, soy sauce, tempeh. Soy uses in the West: Oil, protein (from defatted soybean meal). A brief history of each of these foods is given.

Tables: (1) The species of *Glycine* according to Linnaeus, 1753, and their subsequent classification. (2) The genus *Glycine* L. according to Bentham (1864, 1865). (3) The genus *Glycine* L. according to Hermann (1962). (4) The genus *Glycine* Willd. as revised by Verdcourt (1966, 1970). (5) The genus *Glycine* Willd. as accurately delimited.

Figures: (1) *Shu*, the archaic character for soybeans (five stages in the character’s development; Hu {1963} believes that the *shu* pictograph can be traced back to approximately the 11th century B.C.). Address: Dep. of Agronomy, Univ. of Illinois, Urbana.

391. Inkson, Ms.; Mann, E.J. comp. 1981. *Thesaurus: Food Science and Technology Abstracts*. 2nd ed. Shinfield, Reading, England: IFIS (International Food Information Service). 238 p. No index. 30 cm. First edition, 1977. [Eng]

• **Summary:** The Introduction states: “The original IFIS word list, issued in 1970, did not attempt to give more than the barest outline of the relations between the terms encountered. In 1977, therefore, an FSTA Thesaurus was published, in which the basic structuring of the material found in FSTA was set out. The Thesaurus was designed to give maximum compatibility with the EEC Multilingual (English / French / German / Italian) Food Thesaurus, published in 1979 (and itself based largely on the FSTA system for the English version), and to take into account the needs of on-line users.”

The terms are divided into headings (main terms or descriptors), which are printed in capital letters, and lead-in terms (non-descriptors) printed in lower case. Additional information is included in square brackets. The following abbreviations show the types of relationship between terms: BT = broader terms. NT = narrower terms. RT = related terms. UF = used for. lead-in term followed by “see” heading (e.g. bean curd see TOFU).

Soy-related terms: Beverages: UF soy milk. Lecithins: BT Emulsifiers, Phospholipids. UF phosphatidylcholine. Legumes: NT Soybeans. Miso: BT Soy Products. natto: see Soy Products. Sauces: NT Soy Sauces. soy flour: see Soy Products. soy milk: see Beverages; Soy Products.

Soy Products: BT Soybeans, Vegetable Products, Fermented Products. NT Miso, Soy Proteins, Soy Sauces, Soybean Oils. UF natto, nyufu, soy flour, soy milk, sufu, tempeh, tofu, tsukudani, vital.

Soy Proteins: BT Protein Products, Soy Products, Proteins Vegetable. RT Textured Vegetable Proteins. UF okara protein, Promine [Central Soya Co.], Supro 620, yuba.

Soy Sauces: BT Fermented Products, Sauces, Soy Products. UF moromi, shoyu.

Soybean Oils: BT Oils Vegetable, Soy Products. Soybeans (*Glycine max*): BT Legumes, Oilseeds. NT Soy Products.

Note: This is the earliest document seen (Sept. 2003) that is a thesaurus containing terms related to soybeans and soy products. Address: IFIS (International Food Information Service), Lane End House, Shinfield, Reading RG2 9BB, England.

392. Adilman, Sid. 1981. Relief from chow mein: Breaking bread. *Toronto Star (Ontario, Canada)*. Oct. 11. p. F15.
 • **Summary:** Outside of Toronto's Chinatown the writer discovered an excellent restaurant named Dinner King, that serves Chinese vegetarian food. From "the four pages of strictly vegetarian offerings" he chose and enjoyed: (1) Bean curd and straw mushroom soup. Sparkling—with fresh tofu, straw mushrooms juicy and round, and no MSG. (2) Sangkan with pepper in garlic and black bean sauce. The writer was unable to find out what "Sangkan" was; it "had the texture and look of fried bean curd, made with dough." He called it "Breathtaking!" (3) Fried bean curd skin [yuba] rolls.

393. Chen, W.L.; Lin, S.B. 1981. [Processing and utilization of soy protein lipid film]. *Food Industry Research and Development Institute (Taiwan), Research Report No. 240*. [Chi]*
 Address: Hsinchu, Taiwan.

394. Aoki, Hiroshi. 1981. Misoshiru sanbai kenkô-hô [Three bowls of miso soup daily for good health]. Tokyo: Goma Books. 220 p. Illust. 20 cm. [Jap]
 • **Summary:** Miso soups and health recipes. He worked for food companies, including Ajinomoto, for 30 years on development of new soy protein foods. A popularizing book. Discusses Hirayama.

Contents: Preface. Why are miso soups and soyfoods appreciated again now? 1. The many benefits from eating miso soups and soyfoods every day. 2. The Japanese people have forgotten the goodness of miso soups and soyfoods. 3. Healthy soyfoods: From miso to soymilk (miso, natto, shoyu, tofu, deep-fried tofu pouches, dried-frozen tofu, yuba, okara, roasted whole soy flour or kinako, soymilk, soy oil). 4. Miso soups and soybean cooking make a healthy body. Soybean recipes which are suited to people in the younger generation. Mother's favorite recipes are good for health, too. Appendix.

Maps of Japan showing areas of miso soups and natto.

395. Hoshijo, Kathy. 1981. Kathy cooks... naturally. The Self Sufficiency Assoc., P.O. Box 1122, Glendale, CA 91209. 497 p. Illust. Index. 28 cm.

• **Summary:** This excellent natural-foods, vegetarian cookbook, written with a nice balance of heart and mind, contains over 1,000 recipes—many written from an Hawaiian viewpoint. The lovely and talented author is the hostess of a popular TV series "Kathy's Kitchen." In the long chapter titled "Soybeans" (p. 349-92) is an introduction to the nutritional value of soybeans and soyfoods, plus many recipes for using and making the following at home: Whole dry soybeans (often cooked and mashed; 13 recipes), soy nuts (deep-fried or dry roasted), kinako (roasted soybean flour; homemade + 1 recipe), soy milk (homemade + 19 recipes), yuba (homemade + 11 recipes), okara (15 recipes), tofu (homemade + 50 recipes), frozen tofu ("Homemade TVP" + 7 recipes), miso (18 recipes). Address: Self-Sufficiency Assoc., 2525 South King St., Honolulu, Hawaii 96826, or P.O. Box 1122, Glendale, California 91209.

396. Jaffrey, Madhur. 1981. Madhur Jaffrey's World-of-the-East vegetarian cookery. New York, NY: Alfred A. Knopf, Inc. 461 p. Illust. by Susan Gaber. Index. 20 x 20 cm. A second edition was published in 1983 in London by J. Cape.
 • **Summary:** The Indian woman author of this creative book presents 21 recipes for bean curd (tofu), 7 for tempeh, and some for yuba and miso. Green soy beans with sauce (p. 7). Cabbage with miso (p. 15). Eggplant slices with white miso (p. 22-23). Fresh soy beans, steamed (p. 57). Spinach with fermented bean curd (p. 59). Stuffed yellow squash (with yuba, p. 62-64). Pecel (Vegetable salad with spicy peanut sauce, plus tofu and tempeh; p. 73-74). Tempura (with tofu; p. 75-77). Soy bean sprouts (how to grow; p. 100). Soy-bean and mung-bean sprouts seasoned with sesame oil (p. 105). Tempeh, Fried tempeh, Fried, preseasoned tempeh, Sambal goreng tempeh kering (Sweet and sour tempeh), Tempeh cooked in coconut milk (p. 108-110). Thai fried rice (with Red Bean Curd or Nam Yee [red fermented tofu]; p. 150-51).

One chapter (p. 160-89) is titled "Soy milk, bean curd, and wheat gluten." Making your own soy milk. Making your own bean curd. Udofu (*Yudofu*, simmering bean curd with seasonings). Bean curd with watercress. Korean-style bean curd in a hot water bath. *Hiya-yakko* (Chilled bean curd). Bean curd with Chinese parsley. Bean curd with broccoli. Cabbage cooked with bean curd. Bean curd with a deliciously spicy sauce. Carrots and beans with bean curd dressing. Bean curd, mushrooms, and peanuts in hoisin sauce. Sautéed bean curd. Tofu dengaku (Toasted bean curd with a miso topping). Fried bean curd cubes, soy-bean sprouts sautéed with fried bean curd. Fried bean curd with a sweet-and-sour sauce. Fried bean curd cakes with a mustard surprise. Inari-zushi ("Bags" of fried bean curd stuffed with

sushi rice). Pressed bean curd with cabbage. Salad of pressed bean curd, mung-bean sprouts, and agar-agar. How to make fried and baked wheat gluten balls (plus 5 gluten recipes). Buddha's delight (with yuba and fried bean curd).

Chawanmushi (Steamed savory custards, with tofu; p. 192-94). Omelette with bean curd (p. 198-99). Soy sauce eggs (p. 209). Paneer (milk cheese; p. 237-40). Hot or cold noodles with a soy-sauce dressing (p. 248). Noodles with a hot-and-sour bean sauce (p. 250). Vegetarian mee krob (Crisp noodles with pressed bean curd and eggs, from Thailand, p. 255-56). Noodles with quail eggs, mushrooms, spinach, and yuba (Japan; p. 256-57). Hoppers (yeast pancakes from Sri Lanka). Roti (Flat whole-wheat bread). Delicious stock made with soy-bean sprouts. Clear soup with enok mushrooms, bean curd skins [yuba], and spinach (p. 297). Clear soup with soft bean curd and celery cabbage (p. 298). Miso soup with bean curd (p. 307). Miso soup with carrots and mushrooms (p. 308). Fried, munchable soy beans [soynuts] (p. 321-22). Potato and tempeh patties (p. 339). Dipping sauces (with soy sauce; p. 357-59). Kombu relish (with soy sauce, p. 374). Shoyu daikon (White radish pickled in soy sauce). Ginger quick-pickled soy sauce (p. 375). Aomidaikon (Quick pickled small white radishes, with slightly sweet yellow miso; p. 377-78). Chinese-style jellied bean-curd sweetmeat with a peanut topping (p. 399-400).

General information (p. 418-36; lots on soyfoods, see: bean curd [regular, fried, fermented (Nam Yee), pressed, pressed seasoned], kochu chang [jang], miso, soy-, tempeh, yuba). Sources (of ingredients; p. 437-40). Address: New York City, NY.

397. Mangold, Helmut K. 1981. Lipoproteins and lipid-protein interactions in oilseeds. In: D.W. Stanley, E.D. Murray, and D.H. Lees, eds. 1981. Utilization of Protein Resources. Westport, CT: Food & Nutrition Press, Inc. 403 p. See p. 110-28. Chap. 5. [58* ref]

• **Summary:** "For decades the world's annual output of oilseeds has been increasing steadily. At present it amounts to about 125 million tonnes, more than half of this crop being soybeans... Most studies on the physiology of developing seeds and the biosynthesis of their constituent compounds have been carried out with soybeans."

Discusses yuba and cereal-soy blends. Address: Federal Center for Lipid Research, Inst. for Biochemistry and Technology, Piusalle 68, D-4400 Muenster (Westfalen), Germany.

398. Soei, Zenni. 1981. Shôjin no osôzai: Tôfu ryôri [Zen vegetarian cookery, daily recipes: Tofu cuisine]. *Kurashi no Sekkei (Designs for Living)* No. 140. 168 p. Illust. No index. 29 cm. (Tokyo: Chuo Koronsha). [Jap]

• **Summary:** Contents: Preface. Takenogoshô and tofu cookery. How to make momen [regular Japanese style] tofu using the easy home method. Nutrition of tofu and

prevention of adult diseases. Non-tofu tofu. Introduction to Sanko-in temple. Tofu recipes: Broiled tofu, deep-fried tofu, okara, dried-frozen tofu, yuba. Meaning of inertia. Watching the moon.

399. Stobart, Tom; Owen, Millie. 1981. The cook's encyclopedia: Ingredients and processes. New York, NY: Harper & Row, Publishers, Inc. xii + 547 p. Illust. 25 cm. [20 ref]

• **Summary:** Soy related entries include: Bean curd (incl. tofu). Bean-curd cheese [fermented tofu]. Bean paste and bean sauce (incl. Red bean paste) is sweet and made from adzuki beans. Yellow bean paste is made from soybeans and is salty and pungent. "Fermented salted black beans" is made from a black variety of soybeans; these salted black beans can be used to make "black bean sauce" which can be used as a flavoring in fish, lobster, chicken, and pork dishes.

Soybean (incl. soya bean, soja bean, flour {"pork soya links" used in Britain during World War II}, sprouts, soy oil, soy sauce, soymilk, vegetable yogurt [soy yogurt], vegetable cheese [soy cheese], tempeh, bean curd skin [yuba], miso, tamari, soy sauce, soy protein isolate, soy granules or grits, textured plant protein [textured soy protein]). The name in four European languages is given.

Soy sauce or shoyu (It "is said to be one of the ingredients of Worcestershire sauce." Incl. the "very heavy Indonesian *ketjap* {*ketjap manis* or *ketjap benteng*}, which is a type of soy sauce,..."). The name in four European languages is given.

Textured plant protein (a high-protein foodstuff manufactured from plants (soybeans, peanuts, wheat, cottonseed, etc.). "Originally it was aimed at the vegetarian market." Also called "textured vegetable protein" in the USA. Incl. textured soy flour, textured soy protein gel and fibers).

Worcestershire sauce: Begins with a history (starting in 1837) based on the fanciful story so widely known. "Thus was born what is probably the world's best-known and most ubiquitous bottled sauce, one which has become a standard ingredient." Note: How about soy sauce? "The exact formula is secret. Although it is much imitated, nobody seems to be able to get quite the taste of the original."

Also contains entries for adzuki, ketchup ("Javanese *katjap* [ketjap], for example, is a very sweet soy sauce"), peanut (groundnut or monkey nut), pulses, seaweed, sesame seed, tahini.

Note: Millie Owen prepared the American edition of this book. Address: 1. Hassocks, Sussex, England; 2. Northfield, Vermont.

400. Yan, Martin. 1981. The Yan can cook book. Garden City, New York: Doubleday & Company Inc. 355 p. Illust.

• **Summary:** This Chinese cookbook, published in both hardcover and paperback, contains at least 15 recipes using



bean curd (tofu), especially in the chapter titled “Bean Curd, Eggs, and Other Protein-Rich Foods” (p. 179-99). Tofu is usually referred to as “soybean curd” or “bean curd.” Pages 185-87 contain a recipe for making tofu at home, and give a nutritional comparison of firm bean curd, chicken eggs, ground beef, and cottage cheese. In the chapter “Saucy Dips” is a recipe for “Black Bean Sauce” using “salted black beans” [fermented black soybeans].

The glossary (p. 313-) gives good descriptions of the following soyfoods: Black beans salted, brown soy sauce, Hoisin sauce, Hot bean paste, MSG (monosodium glutamate), soy sauce, bean curd, and soybean sheets dried (yuba).

The author is the star of a popular daily Chinese cooking show named “Yan Can,” which he has hosted since 1978. Born and raised in Kwongchow, China, he left China in 1963 and began cooking at the age of 13 as an apprentice in a popular Hong Kong Restaurant (owned by his uncle) and at age 18 he had earned a diploma from the Overseas Institute of Cookery. Arriving in the USA in 1969, he earned a masters degree from the University of California at Davis.

401. Jaccard, Anne-Marie; Krieger, Verena. 1982. Une graine pour l’an 2000 [A grain for the year 2000]. *Illustré (Lausanne, Switzerland)* No. 4. p. 59-63. Jan. 27. [Fre]
 • **Summary:** This grain is the soybean, which is imported in huge quantities from the USA to Europe. The article discusses the soybean plant, tofu, miso, tamari and shoyu, tempeh, homemade soy sprouts, and yuba.

A photo shows Paul Simon, a specialist in macrobiotic food at Lausanne. He makes tofu in the traditional way using nigari, and serves it with tamari and ginger. “Fresh tofu, prepared on the spot, is difficult to find in Switzerland. In the French-speaking cantons of Switzerland, there are only two places: (1) The macrobiotic Center of Lausanne, 7 ruelle de Bourg, and (2) Le Grain d’Or, 7 rue Voltaire, Geneva.” Recently a factory opened at Zurich, and another will open

soon at Nyon. In the two macrobiotic restaurants of French-speaking Switzerland (Romandie), tofu is found regularly à la carte: at “The Bio” in Lausanne, and “La Moisson” in Geneva.

402. Shurtleff, William; Aoyagi, Akiko. 1982. Tofu & soymilk production: A craft and technical manual. Lafayette, California: Soyfoods Center. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Feb. 28 cm. [223 ref]

• **Summary:** The contents is identical to that of the original Aug. 1979 edition, but the publisher’s name has changed to Soyfoods Center from New-Age Foods Study Center. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

403. **Product Name:** Furama Bean Curd (Yuba) [Fresh Frozen Sheets, or Dried Sticks].

Manufacturer’s Name: Soyfoods of America.

Manufacturer’s Address: 1091 E. Hamilton Rd., Duarte, CA 91010. Phone: 213-223-4473. Later: 213-681-5393.

Date of Introduction: 1982. February.

Ingredients: Soybeans, water.

Wt/Vol., Packaging, Price: 8 oz.

New Product–Documentation: Soyfoods Center. 1980. Sept. Tofu shops and soy dairies in the West (2 pages, typeset). Gives the company’s name, address, and phone number (213-223-4473). The owner is Mr. Ken Lee. “A yuba factory.” Another listing at Los Angeles says: “Lee Way Industries, 658 N. Broadway, 90012. Phone: 213-223-4473 (Ken Lee, a yuba factory).”

Leviton, R. 1982. “Soyfoods of America.” *Soyfoods*. Summer [July]. p. 30-31. Ken Lee’s tofu plant opened in Sept. 1981, with nearly a million dollars in startup capital. Ken took several trips to Japan and Hong Kong to study process and machinery. Yuba production is currently 1,000 lb/week, working 5 days a week with 3 workers. It is sold in dry rolls and semi-moist frozen form. Lawrence Wu

was hired to supervise yuba production and new product development. He plans to make “Yubaloney” (Buddha’s Chicken) from marinated yuba sticks, wrapped in tight cloth bundles and steamed under pressure for 40 minutes until the yuba has congealed into a sausage-like roll.

Ad in *Soyfoods*. 1984. Summer. p. 3. The dried yuba comes in 8-oz. brittle sticks with 6-months unrefrigerated shelf life. The fresh yuba has 5 soft sheets per package with a 6-month frozen shelf life.

Talk with Ken Lee. 1988. Aug. 29. His company started production in Nov. 1981, making yuba, soymilk, and tofu. Of the yuba, 90% is fresh frozen sheets and 10% is dry sticks. See 1988 interview. Mrs. Lee recalls the introduction date to be Aug. 1981.

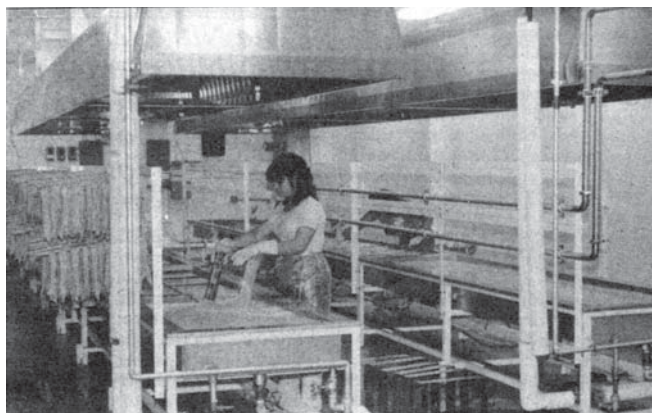
Labels. 1988. 7 by 2 inches. Paper. Letter from Ken Lee. 1988. Oct. 10. Now states he started marketing the yuba in Feb. 1982, before Chinese New Year. So the starting date is somewhere between Nov. 1981 and Feb. 1982.

404. *Soyfoods*. 1982. California yuba plant opens. Winter. p. 7.

• **Summary:** “Soyfoods of America’s Ken Lee and Lawrence Wu, of Duarte, California, plan to make yuba far more available, visible, and talked about as they launch America’s first semi-mechanized (and only) yuba plant.



“The yuba operation, which precedes tofu production in their daily schedule, begins with a low density, low solids soymilk which is pumped automatically across the plant from the tofu line to a series of shallow heating tubs in a 30 foot long stainless steel yuba forming machine. The soymilk is heated and a worker manually lifts off the skins and hangs them on metal drying tiers. Lawrence Wu reports that as many as 22 skins can be obtained from a 2¼ inch basin of soymilk but that as the oil portion is used up, more carbohydrates comprise the yuba and it darkens slightly.



Wu’s yuba has 51% protein, 20% oil, and 2% lecithin on a dry weight basis. Ken Lee plans to package his yuba semi-moist with a nitrogen flush to increase shelf life, but he’s experimenting with vacuum-packing as well. Yuba in its dry form can last up to 2 years at room temperature... Yuba will be positioned in natural foods and supermarket outlets as a sandwich wrapper, eggroll-style, for entrees, as a dry soup mix powder, or as a steamed bologna-like yuba roll flavored with shoyu.”

405. Fundación Tao-Fu. 1982. Proyecto piloto para la produccion e introduccion de los productos derivados de la soya en Quito, Ecuador [Pilot project for the production and introduction of soyfoods to Quito, Ecuador]. Quito, Ecuador. iii + 21 p. March 1. Unpublished manuscript. [Spa]

• **Summary:** Proposal submitted by Richard Jennings and Ismael Janisch. In Feb. 1980 la Fundacion Tao-Fu began its work to introduce soy protein foods to Ecuador. To date, they have developed tofu (seasoned and natural), tempeh, soy yogurt, and soymilk. Address: Casilla 252-A, Quito, Ecuador.

406. Shurtleff, William; Aoyagi, Akiko. 1982. History of yuba. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 15 p. April 26. Unpublished typescript. Available online at www.soyinfocenter.com.

• **Summary:** A comprehensive history of the subject. Contents: Introduction, definition. Etymology. Part I: History of yuba in East Asia. China and environs. Japan. Part II: History of yuba in the West. Europe. United States.

Japan: There has been considerable speculation about when and how yuba was introduced to Japan. Some have said that it was brought by Chinese Buddhist monks as early as the 10th century, others that it was brought back by Japanese monks visiting China in the 13th century. It is also said that Masashige Kusunoki, a famous samurai, used it as provisions during the siege of Chihaya castle during the 14th century. Yet the earliest known written reference to the food appears in the *Wakan Sanzai Zukai* (1711), with the next known references being in the *Isei Teikun Ourai* (c. 1730), *Kyonan Rubetsu-shi* (1813), and *Kotto-shu* (Santo

1815). Japan's oldest existing yuba shop started in 1716, so it is quite likely that yuba existed on a commercial scale by the late 1600s, if not earlier. It may well have been used from time to time as a food in Buddhist temples centuries earlier. As noted at Etymology above, it was probably introduced from China, but it may also have been developed independently in Japan.

Japan's earliest center of yuba production and utilization was in Kyoto, the ancient capital, which remained the center during the 1980s. Yuba has the strongest gourmet image of all Japanese soyfoods, and Kyoto yuba soon developed strong associations with both the vegetarian cuisine of the Buddhists and with the elegant cuisine of the nobility and aristocracy. It soon became one of the indispensable delicacies in both Zen Temple Cookery (*Shojin Ryori*) and in the exquisite Tea Ceremony Cuisine (*Kaiseki Ryori*). In the *Shojin Ryori Kondate-shi*, published between 1818 and 1830, about half the recipes included yuba in one form or another, eloquently attesting to its popularity. A children's song (whose date or origin is probably in the early 1800s) sung in Kyoto near the base of Mt. Hie, the home of a famous complex of Buddhist temples, asks "What do the monks eat on Mt. Hie?" The response is "Yuba no tsukeyaki," the name of a yuba preparation. During the 1970s and 1980s in Kyoto, in restaurants serving Shojin or Kaiseki cuisine, yuba might well appear in more than half the dishes in a typical six-course meal. Some Japanese restaurants, such as the beautiful Sorin-an near Kyoto, specialize in yuba cuisine. Gradually the Japanese developed many unique forms and ways of folding yuba, plus a number of ready-to-eat yuba delicacies (deep-fried chips, pouches, and rolls) that were unknown in China and which have become popular tourist items in Kyoto. Shurtleff and Aoyagi (1975) have given illustrated descriptions of each of these types.

The Kyoto yuba industry traces its origins to at least the early 1700s. The four oldest existing yuba shops started in 1716, 1791, 1804, and 1833. The owner of the oldest shop is now the ninth generation. A picture of one of the oldest and most beautiful shops, Yuba Han, appears on the cover of *The Book of Tofu* (Shurtleff and Aoyagi 1975). Kyoto's yuba shops have always been small, family-run operations, often connected with the family home. Of the 20 shops existing in 1981, 4 started during the Edo period (1600-1868), 5 during the Meiji period (1868-1912), 4 during the Taisho period (1912-1926), and only 6 started after 1926. Thus the industry is old and well established. In 1874 the German Ritter gave a nice 85-word description of how yuba was made in Kyoto, noting that a little wood ash was added to the soymilk to raise the pH."

"The number of yuba shops in Kyoto has gradually decreased from the peak of 67 in 1911. It fell to 35 in 1919, then climbed to 55 in 1929, and finally decreased slowly to 20 in the late 1970s. Number of employees ranged from 172 in 1911 to 71 in 1925, then back up to 151 in 1955, the

last year for which we have data. Sales reached a peak of 183,506 yen in 1929 and were 52,433 yen in 1955 (Tanaka 1955). By the 1970s the Japanese yuba industry used less soybeans than any other Japanese soyfood industry, only several hundred metric tons a year (Watanabe 1969). And a typical shop used only 50-150 pounds of dry soybeans a day to make 400 to 1,200 sheets of yuba. One pound of dry soybeans yields about 0.5 pounds of yuba on a dry weight basis. Partly because it is still made on a very small scale by slow, traditional, labor-intensive methods, and partly because of its image as a gourmet food (rather than a food for the people, as it is in China), yuba in Japan in 1975 sold for about 15 times as much per pound (fresh or dry) as it did in China. Starting in the mid-1970s some modernization of the small shops (especially heating the soymilk with pressurized steam) took place, but most traditional yuba craftsmen prefer their traditional and very beautiful methods. In 1982 there were two yuba trade associations in Kyoto. One, consisting of the six oldest companies, was the *Kyoto Yuba Kumiai*; the other, consisting of 10 shops in Kyoto and one in nearby Otsu was the *Kyoto Yuba Seizo Hanbai Jigyō Kyōdo Kumiai*. The two do not cooperate much with each other.

"In 1980, in addition to the 20 yuba shops in Kyoto, there were 3 in Utsonomiya and Nikko (the other main yuba center, 60 miles north of Tokyo), 1 in Otsu (just east of Kyoto), and an estimated 7 elsewhere in Japan, for a total of 31. Gross net sales of the yuba produced in Kyoto were 520 million yen, or about \$2.3 million. This was estimated to be 80% of the total sales and production of all yuba in Japan." Address: Lafayette, California. Phone: 415-283-2991.

407. Leviton, Richard. 1982. Discovering Japanese soyfoods. *Vegetarian Times* No. 57. May. p. 60-62, 65. [1 ref]

• **Summary:** Recently Richard Leviton traveled to Japan with a group of Americans to get a firsthand look at the Japanese soyfoods industry. There he got his first look at the fabled neighborhood corner tofu shop. He discusses tofu (the Japanese consume 10 million cakes a day) and tofu manufacturers (large and small), types of tofu include silken tofu (called kinugoshi), fresh soft tofu called momen. "In the typical supermarket we counted as many as 60 different soyfood items (often several brands or product sizes), ranging from fresh miso and tofu to packaged soymilk and shoyu, natto, dried frozen tofu, yuba rolls and kinako powder."

Also: Takatsuka Marugo (a large tofu maker that churns out 100,000 lb/day of tofu), Yuba Han (a traditional yuba shop in Kyoto), Asahimatsu Kori-dofu Co., natto, Hamanatto, soymilk, cooked soybeans with wakame, soy sprouts, kinako powder, packaged green soybeans in the pods, miso (fresh and freeze-dried), Linda Barber (an American home economist who is teaching at Kobe Girl's College in Nishinomiya, and also teaching American-style tofu recipes to Japanese housewives via television and the

print media), and Sasa-no-Yuki, a 279-year old restaurant that specializes in tofu cookery.

Photos show: (1) Eleven different tofu dishes in bowls as served at Sasa-no-Yuki restaurant in Tokyo. (2) A man hanging up fresh yuba at Yuba Han. (3) Members of the group seated on tatami mats on the floor around a huge table enjoying dishes served at Sasa-no-Yuki. Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

408. Shurtleff, William; Aoyagi, Akiko. 1982. Soyfoods directory and databook. 1st ed. Lafayette, California: Soyfoods Center. 21 p. May. 28 cm. 2nd ed. published in June as Soyfoods Industry: Directory and Databook. 56 p. [24 ref]

• **Summary:** A detailed study of the rapidly emerging soyfoods industry and market. Contains original statistics compiled by the Soyfoods Center through interviews with companies. Contents: 1. Names and addresses of soyfoods manufacturers in the Western world, plus major soymilk, miso, shoyu, and yuba manufacturers in East Asia. 2. Analysis of the soyfoods industry in the U.S. 3. Soyfoods production statistics for America and the West. 4. America's prime soyfoods market regions. 5. The tofu industry in the West: Three-year analysis of the tofu industry in the West. The U.S. Tofu market: overview and outlook. Graph of number of tempeh and tofu manufacturers in the West. North America's twenty largest tofu manufacturers. 6. Analysis of the soymilk industry in the United States. 7. Key institutions working with soyfoods in the West.

Note: This is the first market study published by Shurtleff and Aoyagi. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

409. Shurtleff, William; Aoyagi, Akiko. 1982. Soyfoods industry: directory and databook. 2nd ed. Lafayette, California: Soyfoods Center. 56 p. June. 28 cm. [24 ref]

• **Summary:** A detailed study of the rapidly emerging soyfoods industry and market. Contains original statistics compiled by the Soyfoods Center through interviews with companies. Contents: 1. Terminology: The many types of soyfoods. I. Traditional low-technology soyfoods. 1A– Nonfermented soyfoods: Fresh green soybeans, whole dry soybeans, soynuts and soynut butter, soy sprouts, whole soy flour & grits, roasted soy flour [kinako] & soy coffee, soymilk and dairylike soymilk products, tofu (eight types), okara or soy pulp, yuba.

1B–Fermented soyfoods: Tempeh, miso, soy sauce, shoyu & tamari, natto & thua-nao, fermented tofu & soymilk, soy nuggets [fermented black soybeans] (Hamanatto & tou-ch'ih).

II. Modern soy protein foods: Defatted soy flour, grits & flakes, soy protein concentrates, textured soy protein products, soy protein isolates.

III. Soy oil products: Soy salad oil & cooking oil, soy oil

margarine & shortening, soy lecithin.

2. Soyfoods industry directory: Names and addresses of over 850 soyfoods manufacturers in the Western world, plus major soymilk, miso, shoyu, and yuba manufacturers in East Asia. 3. Analysis of the soyfoods industry in the U.S.

4. Trends in U.S. and world soybean production: Graph of world soybean production (1922-1979) including graphs for the world total, USA, Asia total, and Latin America. Graph of U.S. soybean production, yields, and exports (1924-1979).

5. Analysis of the tofu industry in the West: The U.S. tofu market: overview and outlook. Graph of the number of tofu (and tempeh) manufacturers in the West from 1975 to 1982. Four-year analysis of the tofu industry in the West. Listing of North America's largest tofu manufacturers and their weekly tofu output. Japan's largest tofu manufacturers and their daily output. Favorite tofu, soymilk, and tempeh recipes as served at U.S. soyfoods, delis, cafes, and restaurants, or marketed as ready-to-serve products. Books on tofu published in America.

6. Analysis of the tempeh industry in the West: Graph of number of tempeh manufacturers. Recipes. Listing of North America's largest tempeh manufacturers and their weekly output.

7. Analysis of the worldwide soymilk industry: Analysis of the soymilk industry in the United States. Analysis of the soymilk industry in Japan. Major Japanese soymilk companies and their products.

8. Analysis of the soy sauce / shoyu and miso industries worldwide. Statistics on fermented soyfoods in East Asia. The soy sauce market in the United States (1981). U.S. imports of soy sauce. Graph (1947-1981. Source: U.S. General Imports, Schedule A. Commodity by Country. U.S. Dept. of Commerce, Bureau of Census). U.S. imports of soy sauce. Table (1947-1981. Source: U.S. General Imports, etc. See above). The shoyu / soy sauce market in Japan. Graph. (1886-1980. Includes: Number of manufacturers. Per capita consumption. Shoyu production. Kikkoman's market share (%)). The miso market in Japan. Graph. (1930-1980. Includes: Per capita consumption. Total miso production. Factory production. Number of manufacturers. Home production. Amount of soybeans used). Overview of the miso market in the United States. Miso exports from Japan (1981). Japan's ten largest miso manufacturers and their output.

9. Other: Analysis of the soynuts industry in the U.S. North America's larger soyfoods delis, cafes & restaurants. The soybean crushing industry; overview.

10. Soyfoods terminology and standards (Glossary of soyfoods terms): I. Traditional nonfermented soyfoods: Fresh green soybeans, okara, roasted soy flour (soy coffee, soy chocolate), soybeans, soymilk (soymilk ice cream, soymilk soft serve, frozen soymilk yogurt, soymilk mayonnaise, soy shakes, soy nog, soymilk whipped cream), soynuts, soy

sprouts, tofu (regular tofu, deep-fried tofu {deep-fried tofu cutlets called nama-age or atsu-age in Japan, deep-fried tofu burgers or burger balls, called ganmodoki or hiryozu in Japan, deep fried tofu pouches (called aburage in Japan; the words “deep-fried” may be dropped from the names after the initial usage, and in recipes or on package labels, if desired}), silken tofu {made without separation of curds and whey, called kinugoshi in Japan; modern types, all made with glucono delta-lactone as coagulant, and all known in Japanese as juten-dofu, are packaged lactone silken tofu, bagged lactone silken tofu (fukuro-dofu), sealed lactone silken tofu (buro-dofu), and Ever-Fresh Lactone Silken Tofu (in Tetra-Pak)}, grilled tofu, frozen and dried-frozen tofu. (Note 1. It is illegal to describe the latter product as “freeze-dried tofu,” since freeze-drying is a completely different process), terms associated with making tofu {fresh soy puree, a coagulant or curdling agent, forming box, filter bag or pressing sack, tofu comes in cakes, not blocks}), whole soy flour, flakes and grits, yuba.

II. Traditional fermented soyfoods: Fermented soymilk products (soymilk yogurt {Soy Yogurt, Soyogurt, Soygurt}, acidophilus soymilk, soymilk kefir, viili, piima, buttermilk {Soy Kefir, etc.}), fermented tofu (wine-fermented tofu, brine-fermented tofu), miso (rice miso, barley miso, soybean miso, Chinese soybean chiang), natto (thua-nao from Thailand and kinema from Nepal; all are non-salted), fermented black soybeans [fermented black soybeans] (Chinese fermented black soybeans know as shih, tou-ch’ih, tou-shih, or dow-si; savory fermented black soybeans called Hamanatto in Japan, Daitokuji fermented black soybeans called Daitokuji natto in Japan, Philippine fermented black soybeans called tausi or tao-si in the Philippines, Indonesian soy nugget paste called tauco, formerly spelled tao-tjo, Malaysian soy nugget sauce called tao-si), soy sauce (shoyu). The five basic types of Japanese shoyu are: regular shoyu called koikuchi shoyu in Japanese, light-colored shoyu called usukuchi shoyu, tamari shoyu, clear shoyu called shiro shoyu, and rich shoyu called saishikomi shoyu), tempeh, other fermented soyfoods.

Note 2. This is the earliest document seen (Sept. 2012) that uses the word “Soygurt” to refer to soy yogurt.

III. Soy oil and modern soy protein foods: soy oil, defatted soy flour, flakes and grits, soy protein concentrate, soy protein isolate, textured soy protein products (TSP, TVP is a registered trademark of the Archer Daniels Midland Company and cannot be used as a generic name for this product), meat analogs (foods typically made from spun soy protein fibers to resemble meat, fish, or poultry products).

11. Names of soyfoods around the world: Names of 40 products. Brazilian / Portuguese names. British English names. Chinese names (fermented tofu is Toufu-ju or Sufu). French names, German names. Japanese names. Spanish names.

12. Key institutions working with soyfoods in the

West: The Soyfoods Center, Soyfoods Association of North America, INTSOY, American Soybean Association, Bean Machines, Inc., Soycrafters Apprenticeship Program, USDA Northern Regional Research Center, Sojaquelle.

About The Soyfoods Center.

Note 3. This is the 2nd market study published by Shurtleff. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

410. Dominguez de Diez Gutiérrez, Blanca. 1982. Re: Names of soyfoods around the world: Spanish. Form filled out and returned to William Shurtleff at Soyfoods Center, July 9. 1 p. Handwritten. [Eng]

• **Summary:** Gives the names of all the various soyfoods in Spanish. Note: A typed list of these names is published in *Soyfoods Industry and Market: Directory and Databook*, 1985. 5th ed. p. 164.

“Fresh green soybeans–Frijol de soya tierno o ejote de soya. Whole dry soybeans–La soya, Frijol de soya. Black soybeans–Frijol de soya negro. Fresh soy puree–Pure de frijol de soya. Soy sprouts–Germinados de soya. Soynuts–Soya-nuez (nuez means walnuts or pecans), Soya-huate (means peanuts from cacahuate). Oil roasted soynuts–Soya nuez tostada (meaning nut). Dry roasted soynuts–Soya-huate tostado (meaning peanuts). Soynut butter–Mantequilla de soya. Roasted soy flour–Harina de soya tostada (kinako). Soy coffee–Soyafee. Soy chocolate–Soyalate. Soymilk–Leche de soya. Soymilk ice cream–Helado de leche de soya. Soymilk curds–Cuajada de soya, Jocoque de leche de soya. Tofu–Tofu, Queso de soya, Cuajada de soya. Soft tofu–Tofu blando. (Regular) Tofu–Tofu comun. Firm Tofu–Tofu firme. Extra firm tofu–Tofu extra firme. (Deep fried) Tofu cutlets–chuletas de tofu. (Deep fried) Tofu burgers–Hamburguesas o tortitas de tofu. (Deep fried) Tofu pouches–Saquitos de tofu. Silken tofu–Tofu sedoso. Pressed silken tofu–Tofu sedoso prensado. Grilled tofu–Tofu a la parrilla. Dried frozen tofu–Tofu seco congelado. Okara or soy pulp–Okara, pasta de soya, pulpa de soya. Yuba–Yuba. Fermented black soybeans–Palanquetas de soya. Miso or soybean jian–Miso (el). Soy sauce–Salsa de soya. Shoyu–Shoyu (el). Tamari–Tamari. HVP soy sauce–Have not found it. Tempeh–Tempeh (el). Fermented tofu–tofu fermentado. Fermented / cultured soymilk–Leche de soya fermentada. Natto, thua-nao, kinema–Natto (el). Soy oil–aceite de soya. Soy lecithin–Lecitina de soya. Soy flour–Harina de soya. Whole (full fat) soy flour–Harina de soya entera. Defatted soy flour–Harina de soya degasada. Soy grits and flakes–Soya martajada y hojuelas de soya. Cereal-soy blends (CSM, WSB, etc.)–Soyavena (with oatmeal). Soy protein concentrate–Concentrado de proteina de soya. Soy protein isolate–Aislado de soya. Textured soy protein products–Productos de soya texturizada. Textured soy flour, TSF, or TSP–Harina de soya texturizada. Textured soy concentrates–Concentrados de soya texturizada. Textured soy isolate–Aislados de soya

texturizada. Spun soy protein fibers—Fibra de proteína hilada de soya. Soy casmar, Soya Cocoa, Coco soya—Beverages made with chocolate or cocoa. Patisoya—Like spaghetti or noodles of different kinds made with soy flour—commercial products. Vegesoya—Commercial products for soups. Soya mex and Chocosoya—for beverages. Soya pac—Textured soya like meat, also a commercial product.” Address: Apdo. Postal 226, Jalapa, Veracruz, Mexico.

411. Leviton, Richard. 1982. Soyfoods of America. High volume Duarte company takes on California market. *Soyfoods*. Summer. p. 30-31.

• **Summary:** America’s first yuba plant opened in September 1981, requiring nearly one million dollars of startup capital. They move 18,000 lb/week of tofu in the very competitive Los Angeles market. Their lines are Furama and Nature’s Touch.

Photos show: 1. The company’s line of yuba, tofu, and soymilk products; 2. Ken Lee with his innovative semiautomatic yuba machine and freshly packaged sheets; 3. The part of the plant that makes tofu and soymilk; 4. Ken Lee and sales manager Doug Fiske holding water-packed and vacuum-packed tofu. Address: Colrain, Massachusetts.

412. *SoyaScan Notes*. 1982. Chronology of soybeans, soyfoods and natural foods in the United States 1982 (Overview). Dec. 31. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Jan. White Wave in Colorado is the first company to get its tofu placed in the yogurt / dairy case in supermarkets.

Jan. Legume, Inc. launches Tofu Lasagna, frozen in a box. It is soon followed by Tofu Ravioli.

Jan. *The Incredible Tofu Cookbook, California Style*, by Immegart and Dansby self published.

Jan. New England Soy Dairy launches “Year of the Dog” Chinese New Year tofu promotion and nets 47% immediate sales increase.

Jan. Island Spring survives industry’s first publicized tofu recall and the discovery of new tofu spoilage microorganism, *Yersinia enterocolitica*.

Jan. ADM becomes sponsor of “This Week with David Brinkley” on Sunday ABC TV, with 4.4 million viewers.

Jan. Soyfoods Unlimited in California introduces tempeh burgers and ships them air freight to East Coast markets; Pacific Tempeh in California follows suit.

Feb. Yuba is first produced and sold commercially in the Western world by Ken Lee of Soyfoods of America, in Duarte, southern California. Trial production had begun in Nov. 1981.

Feb. *Soyfoods* magazine No. 6 (yellow cover) published.

Feb. Many large ads run by San-J (tamari), New England Soy Dairy, and Legume in major national trade journals.

Feb. Unicorn Restaurant in Miami has \$15,000 gourmet, soy / natural foods banquet to welcome chef Ron Pikarski, who makes elegant tofu dishes and carves a swan from soy butter.

Feb. Nasoya buys \$50,000 Kutter vacuum-packaging machine, which helps to popularize this packaging style for tofu.

March. *Tofu Fantasies*, by Juel Andersen published by Creative Arts.

March. USDA issues new school lunch regulations, fails to approve tofu for use.

March. Inaccurate, damaging article on iron binding by soy proteins appears in San Francisco Chronicle and Los Angeles Times.

March. Fifteen soyfoods companies exhibit at Natural Foods Expo, Anaheim, CA. Richard Leviton gives key speech. 5,000 visitors see expo. Pacific Tempeh unveils new full-color tempeh burger poster.

March. Big increase in European soyfoods companies; there are now 11.

March. Name of *The Beanfield* newsletter changed to *Soyfoods Monthly*.

March. Great Eastern Sun trading company founded in North Carolina by Barry Evans.

April. At New York’s International Food Show, Quong Hop, Yeo’s, and President brand soymilks, and Veda’s Bayou Delights (tofu / tempeh pot pies) exhibit. ADM serves soy isolate ice cream and soymilk.

April. Quong Hop unveils new Soy Deli marketing concept for retail using posters and frozen tofu entrees.

April. Jack’s Beanstalk in Utah does creative work at introducing tofu to institutions. Develops 30 bulk recipe cards scaled to 100 servings.

April. ADM unveils work with glucono delta-lactone (GDL) and soy isolates in making tofu.

April. *Toyo Shimpō*, Japan’s tofu newspaper, gives extensive coverage to upcoming Soyfoods Come West conference in Seattle.

May. Island Spring releases two 5-minute color video tapes demonstrating tofu cooking for showing in supermarkets.

May. Public schools in Hawaii granted permission to use tofu in meals.

May. *Soyfoods Directory and Databook*. by Shurtleff and Aoyagi published by Soyfoods Center, the first book of its type listing all soyfoods companies and industry and market statistics, 21 pages. Second edition published in June as *Soyfoods Industry: Directory and Databook*, 52 p.

May. William Shurtleff and Mark Fruin receive a grant from Kikkoman to write a book on soy sauce.

May. *Cook with Tofu*, by Christina Clarke is 2nd runner-up in R.T. French’s Tastemaker awards for cookbooks.

May. Clearway Tofu sponsors the first Mother’s Day Tofu Fair in Santa Cruz, California, with tofu recipe

competition, music, and prizes.

June. Vitasoy USA runs color display ads for soymilk on San Francisco buses.

June. Kibun of Japan exhibits four flavors of soymilk in Tetra Pak cartons at National Restaurant Show in Chicago.

June 16. *The New York Times* runs an article on Dieter Hannig, Director of Food Research for Hilton Hotels. His many tofu recipes on microfiche are sent to 86 Hiltons worldwide.

June. Bestways magazine begins 3-part series on soyfoods by Bonnie Mandoe.

June. *The Soy Dairy: A Way to Save the Small Farm*, by MacCormack published by Sunbow Farm.

June. *The Book of Nigari Technique* (in English) published by Yoshikawa Kagaku in Japan.

June. Metta Tofu Products in Denman Island, B.C., Canada, introduces Frozen Buddha soymilk ice cream.

June. Haarmann & Reimer debuts flavors for tofu and okara at IFT convention in Las Vegas.

June. Royal American Foods is launched in Kansas City with \$1 million startup capital to sell TVP entrees, tofu-like products via multi-level marketing system.

June. Granny Goose Potato Chips does extensive radio advertising in California for a new potato chip. Ad makes frequent, positive reference to tofu. First national radio ads mentioning tofu.

June. Farm Foods presents Ice Bean at American Booksellers Convention at Anaheim, California, along with previews of their new tofu cookbook.

July. "Discover Tofu" published by *Cosmopolitan* magazine.

July. Farm Foods receives a U.S. trademark for "Ice Bean" as a soy ice cream.

July. Light Foods excites NNFA convention in New Orleans with debut of Light Links, the world's first tofu hot dogs.

July. Eden's Orchard tofu / soymilk ice cream introduced in New York by Heller Enterprises.

July. Richard Jennings announces new formula for okara / barley tempeh; later purchases Southwest Soyfoods, relocates company in Santa Fe, New Mexico. Continued.

413. Tsuchiya, Kanji. 1982. *Tônyû. Shinban* [Soymilk. 2nd ed.]. Tokyo: Shoku no Joho-sha. 223 p. First edition was published in 1980. Illust. 17 cm. [Jap]

• **Summary:** Continued. Pages 31-32. In the literature of Japan's Muromachi period it is written that after eating confections (*tenshin* such as okashi, oyatsu) they ate light and simple food (*tanpaku na tabemono*). One of the latter was called *tofu no uwamono*, which means yuba.

A flow diagram (p. 35-36) gives Chinese names of soymilk, yuba, fermented tofu, etc.

Part III (p. 39-64) titled "Soymilk around the world," has chapters on the USA, Korea, Hong Kong, China, Taiwan,

Southeast Asia, and Europe. Soymilk in America (p. 47-52) includes a 1975 table showing major manufacturers of soymilk and soy-based infant formula, their location, and the names of their products. Soymilk in Korea (p. 53-54): In 1968 the Keijo Shison Shokuhin Kenkyujo made soymilk using the regular tofu making equipment adjusted to make a product as similar as possible to dairy milk, then bottled it in cider bottles, pasteurized it, and sold it. They made 500 to 800 bottles a day and sold it nationwide. It was brownish in color and tasted like soybean cooking liquid; there was no comparison between that and today's soymilk in quality. The head of this research lab was Dr. Son Zaien, who also ran the children's hospital and was a professor of pediatrics at Seoul Medical University. As a pediatrician his concern was that the soymilk promote the growth and health of children; he was not concerned about its acceptance among adults. The children accepted it within 2-3 days. Later, in May 1982, Tsuchiya visited Korea again. They had developed their own method of making soymilk and the soymilk plant had been expanded. Now they produced 500,000 bottles a day (180 cc each, retort sterilized); they call it Vegemil / Vegemeal. It contains added fat and sugar to make it closer to dairy milk., but the sugar content is 10%, which is sweeter than Japanese soymilk. The plant is built on a lot of 4-5,000 tsubo and has 24 retort sterilizers; each machine has 2,500 bottles capacity. Tôhō Yuryô, as part of a Korean technical joint venture with Kibun in Japan, is going to make 120-130,000 Tetra Brik cartons (each 200 cc). Also other dairy milk makers (Sojû and Sangan) are going to have some sort of equipment to start making soymilk. Also, I head that Tôa Shokuhin (K.K.), a pharmaceutical company, is planning a joint venture with Meiji in Japan to make soymilk.

Also, Lotte Chilsung Beverage Co. is planning to use Marusan's (Japan) technology to make soymilk. They are constructing a plant to start to making soymilk in Feb. 1983.-The population of Korea is about 40 million and the GNP 24,000 million won (unit of currency) a year; it is the largest in Asia. But it is a tough war for market share among these fine companies.

Soymilk in Taiwan (p. 57-61): People who were born in Taiwan [the former Japanese colony of Formosa (1895-1945)] have Japanese food habits and don't like soymilk as much as the Chinese. Also, Taiwanese young people don't like soymilk much. In mainland China people only drink water that has been boiled and cooled—just as they do with tea. The same with soymilk. They boil soymilk in a flat pan (*hira-nabe*) for 20-30 minutes before selling it. The buyers don't buy it without seeing that it has been properly boiled. If you cook soymilk in a flat pan for a long time, you can eliminate much of the beany smell and flavor, the antidigestion substances, and harmful bacteria. They don't care about a little burned flavor, bitterness, or beany flavor. But this is ancient wisdom. There they continue to drink soymilk up to this day and it is still very popular. It is said

that the annual sale of soymilk in Taiwan is about 5,000 million yen.

In China, sellers of ice candy (like ice Popsicles) call out loudly *kaishui bing*. *Kaishui* means boiled and cooled water. *Bing* means Popsicle.

In the Philippines, about 10 years ago, the University of the Philippines developed soymilk and a blend of soymilk and coconut milk for American children. It was test marketed among the students and teachers of elementary schools, junior and senior high schools, and universities. It was acceptable only to comparatively well educated people. A 200 ml bottle (about 7 ounces) sold for 15 cents, making it more expensive than most other drinks. The taste was plain but the bean smell was not completely removed. In October 1982 Dr. William G. Padorina and other economically influential people came to Japan at the request of President Ferdinand Marcos and studied Marusan's soymilk plant. They are planning a Food Development Symposium in Feb. 1983 and they would like to have nutritious soy products that contain coconut oil (they account for 70% of the world's production). They have asked Marusan to cooperate in the effort.

In Denmark, a company named Starna [Nutana?] makes various soyfoods such as textured soy flour (*daizu nikku*), defatted soymilk, and soymilk. They are selling these products in Denmark and neighboring countries. *The Book of Tofu* by Shurtleff and Aoyagi is mentioned on pages 46 and 117.

Okazaki Marusan makes a soy yogurt named *Tôgurt / Tôguruto* in Japanese. The character *tô*, which means bean, is also the first character in the word *tôfu* (p. 71). Address: Technical consultant, Okazaki Marusan, Japan.

414. An, Tzu-chieh (An, Zijie). 1982. Cracking the Chinese puzzles. 5 vols. Hong Kong: Stockflows Co. 24 cm.

• **Summary:** Vol. 2, p. 1099 contains an entry for the Chinese character "Fu," which means "rotten, putrid, stale, corroded, bean curd,..."

Doufu is "bean curd."

Furu is "fermented bean curd." *Fuzhu* is "dried bean milk cream in tight rolls" [i.e., shaped into tight rolls—called "dried yuba sticks]."

Note: Vol. 2 contains pages ix + p. 675-1358.

415. Aykroyd, Wallace R.; Doughty, Joyce. 1982. Legumes in human nutrition. 2nd ed. Revised by Joyce Doughty and Ann Walker. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO). viii + 152 p. Illust. 28 cm. The original edition was 1964. [293* ref. Eng]

• **Summary:** Contents: Preface. Introduction. History of legumes. Production and consumption. Composition and nutritive value. Methods of processing and cooking. Effects of processing on nutritive value. Toxic substances. Legume proteins. Observations on the value of legumes in human

feeding. The place of legumes in human diets. Appendixes. References.

On pages 49-51 are sub-sections on: Traditional fermented soybean products (methods of home preparation are detailed in Appendix 5, p. 120-22): Soy sauce (shoyu), soy paste (miso), tempeh, natto, Hammanatto. Protein separation and other extraction techniques. Soy-milk. Soybean curd (tofu). Modern products from soybeans. Soy flour and grits. Soy protein concentrates. Isolated soy protein.

Under tofu (p. 50): "The curd may also be fermented to make soy-cheeses, which resemble the more highly flavoured European cheeses. These are known in China as *chou tofu*, which means stinking bean curd." See also p. 120, where yuba is mentioned.

Note: This 1982 edition was made by revising the original 1964 edition. Ann Walker is from the Dep. of Food Science, University of Reading. Dr. Wallace Aykroyd died in Feb. 1979 just as he was taking the first steps toward this revision. Address: 1. Dep. of Human Nutrition, London School of Hygiene and Tropical Medicine; Former Director, Nutrition Div., FAO, Rome, Italy.

416. Hagler, Louise. 1982. Soja Total. Das vegetarische Kochbuch der Tennessee-Farm [Total soya. The vegetarian cookbook of the Tennessee-Farm]. Hamburg, West Germany: Papyrus Verlag. 200 p. Translation by Elizabeth Leih of *The Farm Vegetarian Cookbook* (1978, English). Illust. 21 cm. [Ger]

• **Summary:** This interesting vegan cookbook book is loaded with creative recipes, illustrations (line drawings), and black-and-white photos. Contents: Beans. Soyameat (TVP). Italian dishes. Chili rellenos, nixatamal and masa. Nutritional yeast. Knishes. Soups. Uncle Bill's recipes. Gluten. Tempeh. Miso. Soymilk. Ice Bean (Soymilk ice cream, p. 4, 96-98). Soy yogurt. Tofu. Pureed tofu. Yuba. Soy coffee. Soynuts. Soya pulp (okara). Soy flour. Vegetables. Bread. Cereal grain recipes. Breakfast breads and pancakes. Desserts. Nutritional advice.

Note: This is the earliest German-language document seen (March 2007) that mentions soy ice cream, which it calls *Soja-Eiskrem*, *Eis-Bohnen*, or *Schokoladen-Bohnen-Eiskrem*. Address: Summertown, Tennessee.

417. Re: Names of soyfoods around the world: French. 1982. Form filled out by William Shurtleff based on sources given below. 1 p. [Eng; Fre]

• **Summary:** Gives the names of the main soyfoods in French. Sources: Bernard Sturup; Bau & Debry, of France. "Soyfoods—Aliments à base de soja. Fresh green soybeans (edamamé)—Edamamé. Soja frais. Whole dry soybeans—(haricots de) Soja sec / secs. Black soybeans - Fresh soy puree—Purée de soja.

Soy sprouts–Pousses de soja. Soja germe.
 Soynuts–Soja grillé. Graines de soja grillées.
 Oil roasted soynuts–Graines de soja grillées (à l’huile).
 Soja grillé, revenu dans l’huile.
 Dry roasted soynuts–Soja grillé à sec. Graines de soja grillées à sec (or sans huile). Haricots de soja, grillés à sec.
 Soynut butter–Buerre de soja grillé.
 Roasted soy flour–Farine de soja grillé.
 Soy coffee–Café de soja.
 Soy chocolate–Chocolat de soja.
 Soymilk–As of Feb. 2012 only the terms “boisson au soja” or “jus de soja” or “tonyu” (the Japanese word for “soymilk”) can be used legally on commercial soymilk products in France–because of dairy lobby protests. The term “lait de soja” is generally used in cookbooks, books, articles, etc.
 Soymilk ice cream -
 Soymilk curds -
 Tofu (regular)–Tofu or Tofou (le). Note: Many French speakers, who are also soyfoods experts, prefer “Tofou.”
 Soft tofu–Tofu mou.
 Firm Tofu–Tofu ferme. Extra firm tofu–Tofu très ferme.
 (Deep fried) Tofu cutlets–Tranches de tofu frites.
 (Deep fried) Tofu burgers–Tofuburgers frits. Burgers de tofu (frits).
 (Deep fried) Tofu pouches–Poches de tofu (frites).
 Silken tofu–Tofu soyeux.
 Pressed silken tofu–Tofu soyeux.
 Grilled tofu–Tofu grillé.
 Dried frozen tofu–Tofu séché. Tofu déshydraté.
 Okara or soy pulp–Okara (l’).
 Yuba–Yuba (le).
 Dried yuba sticks -
 Sweet dried yuba -
 Fermented black soybeans -
 Miso or soybean jiang–Miso (le).
 Soy sauce–Sauce de soja. Sauce soja. Shoyou (le).
 Chinese sauces -
 Tamari–Tamari (le).
 Tempeh–Tempeh (le).
 Fermented tofu–Tofu fermenté (au vin).
 Fermented soymilk–Lait de soja fermenté.
 Natto, thua-nao, kinema–Natto (le).
 Soy oil–Huile de soja.
 Soy lecithin–Lécithine de soja.
 Soy flour–Farine de soja.
 Whole (full fat) soy flour–Farine de soja entière.
 Defatted soy flour–Farine de soja dégraissée.
 Soy grits and flakes–Flocons et granule de soja.
 Cereal-soy blends (CSM, WSB, etc.) -
 Soy protein concentrate–Protéine de soja concentrée.
 Soy protein isolate / Isolated soy protein–Isolat de protéines de soja. Protéine de soja isolée.
 Textured soy protein products–Protéines de soja

texturées (Produits à base de protéines de soja texturée).
 Textured soy flour, TSF, or TSP–Farine de soja texturé.
 Textured soy concentrates–Concentrat de soja texturé.
 Textured soy isolate–Isolate de soja texturé.
 Spun soy protein fibers. Address: Soyinfo Center, Lafayette, California 94549.

418. Simonds, Nina. 1982. *Classic Chinese cuisine*. Boston, Massachusetts: Houghton Mifflin. xi + 353 p. Illust. Map. Index. 23 cm.



• **Summary:** This is a remarkable book by one who is part “of a new generation of American chefs and food writers.” The Pinyin system of romanization, “which was officially adopted by the People’s Republic of China in 1979, has been used for most of the Chinese words in this book” (p. vi).

A map of China (facing page 1) shows the individual provinces and the four main culinary schools: northern, western, eastern, and southern—as explained on pages 1-4. Taiwan is considered part of the eastern school. The southern school is comprised of only two provinces: Guangdong (which includes the city of Guangzhou—formerly named Canton) and Guangxi.

Soyfoods are used and discussed liberally throughout this book. The section titled “Condiments, seasonings, and special ingredients” (p. 5-11) gives detailed discussions of hoisin sauce, oyster sauce, soy sauce (the three grades are light, medium and heavy, with light having a delicate and slightly more subtle flavor than the other varieties), sweet bean sauce (and bean pastes including brown bean paste and yellow bean paste), fermented black beans (and black bean sauce).

The next section, “Selected fresh and pickled vegetables” (p. 11-14) has an entry for bean sprouts (the two main types are sprouted from mung beans {which are green}

and soybeans {which are yellow}; soybean sprouts have a stronger flavor and require longer cooking).

Soy related recipes: Beef with noodles in a pot (with “2 cakes bean curd,” p. 76). Cold spicy noodles (with “2 cakes bean curd, about 3 inches square and 1 inch thick,” p. 80).

One chapter, titled “Soybeans and bean curd” (p. 113-29) begins with a charming introduction to “stinky bean curd” (fermented tofu). As evening fell after dinner, luscious scents and fragrances filled the air. Yet there was “a putrid smell that defied classification. What was that baffling, pungent odor, present in every part of the city.” After a bit of research she soon discovered that it came from “stinky bean curd (*chou dou fu*), a favorite snack of the Chinese.” Vendors of this unusual “delicacy ran rampant all over the city with their portable deep deep-fryers. My Chinese surrogate sister and brothers, who were great fans of the stuff, used to race outside, armed with empty bowls and chopsticks, at the sound of the stinky bean curd man’s call. (The smell usually preceded him by two blocks, giving everyone plenty of notice.)” It is “made by fermenting fresh bean curd squares in a brine with assorted spices and pickled vegetables.” The resulting cakes are deep-fried... until golden and eaten with soy sauce, vinegar, mashed garlic, or chili paste.”

The soybean is used to make various Chinese seasonings including soy sauce, hoisin sauce, sweet bean sauce or paste, and hot bean paste. Fresh green soybeans are cooked and served with soy sauce and sesame oil. Whole dry soybeans are fried and eaten as a snack.

“The nutritious properties of the soybean further explain why it is so popular with the health-conscious Chinese.”

Heating soybean milk gives “bean milk sheets (*fu pi*)” [yuba]. Also mentions “bean curd sticks (*fu zu*)” [dried yuba sticks], bean curd sheets (*bai ye*),” and “bean curd noodles (*gan si*).” In terms of consistency, the three basic types of bean curd are soft, medium, and hard (*dou fu gan*).” “Bean curd is also fermented in rice wine and spices to make a popular seasoning (*dou fu ru*), which has a “slightly cheeselike flavor.”

Nina concludes the introduction: “As most nutritionists will agree, the soybean and its many by-products are the foods of the future.” Line drawings show: soybeans, bean curd, bean milk sheets, bean curd sheets, bean curd sticks, and bean curd noodles. Recipes in this soy chapter: Meatball and soybean casserole (with “4 cups dry soybeans, p. 116). Sweet soybean milk (How to make at home; the Chinese equivalent of America’s cup of coffee for breakfast, with 2 cups dry soybeans and 1 cup sugar. Typically accompanied by a sesame flat bread {*shao bing*} and a fried cruller {*you tiao*}). Stir-fried soybean sprouts with red-in-snow. Stuffed bean curd rolls (with “8 dried bean curd sheets or bean milk sheets”). Sweet-and-sour fish slices (with “10 dried bean milk sheets”). Eggplant rolls (with “6 dried bean milk sheets”). Buddha’s delight (a well-known vegetarian dish, with “2 ounces bean curd sticks”). Cold tossed bean curd and

celery shreds (from Sichuan, with “8 cakes bean curd, about 3 inches square and 1 inch thick”). Red-cooked bean curd. Braised bean curd with black mushrooms in oyster sauce (from Sichuan). Stuffed bean curd (from Canton). Ma po bean curd (from Sichuan). Eight-treasure stir-fried vegetables with meat (with “3 cakes bean curd, about 3 inches square and 1 inch thick”). Northern-style bean curd (p. 129).

More soy related recipes: Steamed fish fillets in black bean sauce (with “1 tablespoon fermented black beans, rinsed, drained, and minced,” p. 183). Double-cooked pork slices (with “3 cakes bean curd,” p. 230). Steamed spareribs in black bean sauce (with “2 tablespoons fermented black beans, rinsed, drained, and coarsely chopped,” p. 234). Stuffed peppers in black bean sauce (with “1 tablespoon fermented black beans, rinsed, drained, and minced,” p. 272).

One entire chapter is titled “Vegetarian dishes” (p. 279-94). The introduction discusses the Kuantu Temple (a Buddhist-Taoist sanctuary about 1 hour drive from Taipei), and the origin of vegetarian cuisine in China in early Buddhist and Taoist monastery kitchens. Wheat gluten (*mian jin*) and related preparations such as deep-fried wheat gluten balls (*mian jin pao*) steamed wheat gluten chunks (*kao fu*), plus seasonings such as “pickled bean curd (*dou fu ru*)” are often used. Soy related: Broccoli in mock crabmeat sauce (with “1 cake bean curd,” p. 285). Vegetarian lion’s head (with “4 cakes bean curd,” p. 287). Mock goose (with “20 bean milk sheets” [yuba], p. 290-91). Vegetarian eight treasures (with “2 cakes bean curd,” p. 291). Wheat gluten (how to make at home from wheat flour, p. 292).

More soy related: Eight-treasure mixed soup pot (with 2 cakes bean curd,” p. 310-11). Hot and sour soup (with “2 cakes bean curd,” p. 316).

About the author: A photo of Nina Simonds (in Chinese clothing) appears on the inside rear dust jacket. She studied Chinese food and cooking, language and culture, in Taiwan for more than three years (she arrived there at age 19) with Chinese master chefs at the Wei-Chuan school in Taipei, while living with a Chinese family. She subsequently received the Grand Diplôme from La Varenne École de Cuisine in Paris, where she also taught Chinese cooking. “For the past eight years (prior to 1982) she has taught in cooking schools all over the United States and Canada and her articles have appeared in *Gourmet* and *Cuisine* magazines and the *Boston Globe*” (from the inside rear dust jacket). Address: Salem, Massachusetts.

419. Yoneda, Soei; Hoshino, Koei; Schuefftan, Kim. 1982. Good food from a Japanese temple. Tokyo, New York, and San Francisco: Kodansha International. 224 p. Illust. Index. 27 cm.

• **Summary:** An outstanding, beautiful book, the best seen to date on Buddhist Vegetarian Cookery (*shojin ryori*)—after you get past the poor, almost embarrassing introduction, written by Robert Farrar Capon of New York. The author,

GOOD FOOD from a JAPANESE TEMPLE



Soei Yoneda
Abbess, Sankō-in Temple



introduction by
Robert Farrar Capon



a 600-year
tradition of simple,
elegant vegetable
cookery

Sôei Yoneda, is a great Zen Abbess and cook, and a visit to Sankô-in, a Rinzai nunnery, is an unforgettable experience. The recipes are arranged by season: Spring, summer, autumn, winter, all seasons. For every recipe, both a Japanese and an English-language name are given. Soy-related recipes include: Soybean rice (*mame gohan*, p. 73). Unohana rice (with fried okara, p. 75). Thick-rolled sushi (with dried-frozen tofu, p. 75). Tofu rice (p. 80). Soy bean dashi (p. 82). Miso soups (p. 85-88; 14 recipes, one for each month but two for Jan. 1 and 2—White miso Ozoni and Zen temple ozoni—and one for all seasons—Saké lees soup). Pickling with miso (p. 89). Rape blossoms with miso-mustard dressing (p. 93). Bamboo shoots with vinegar-miso dressing (p. 98-99). Quick oden (with tofu, p. 107-08). Green beans with miso dressing (p. 113-14). Eggplant with miso sauce (p. 123). Zucchini with sesame-miso sauce (p. 129). Steamed zucchini with three-color miso (p. 130-31). Jade nuggets (*kizami nattô no ao-jiso age*, p. 136). Pine cones (*matsukasa*, with tofu, p. 151). Miso-pickled vinegared konbu kelp (p. 153). Crisp turnip with sesame-miso dressing (p. 158). Amazake (p. 162). Daikon with miso sauce (*daikon oden*, p. 170). Brussels sprouts with miso sauce (p. 179-80). Dried-frozen tofu mélange (p. 181-82). Not exactly hamburger (“patties” with dried-frozen tofu and okara, p. 182). Simmered dried-frozen tofu (p. 182-83). Dried-frozen tofu tempura (p. 183). Konnyaku in miso dressing (p. 184). Fried unohana (*iri unohana*, with thin deep-fried tofu and okara, p. 187; “The mash or lees (*okara*) remaining after making tofu are inexpensive, plentiful, and nourishing—ideal everyday temple food. By itself *okara* is not interesting, but it is brought to life by the addition of a little oil and a few other ingredients”). Inari-zushi (p. 189-90). Grilled usuage (with thin deep-fried tofu, p. 190). Deep-fried usuage (p. 190-91). Golden sushi rolls (with usuage, p. 191). Rôbai (Sanko-in fresh wheat gluten, p. 192-93). Deep-fried dried yuba (p. 195). Fried and simmered dried yuba (p. 196). Sesame “tofu” (with kuzu, p. 196-99). Almond tofu (p. 202). Salt-grilled tofu (from old Naniwa, today’s Osaka, p. 203-04). Steamed tofu loaf (p. 206). Salad with white [tofu] dressing (*shira ae*, p. 206-07). Steamed tofu cup (*otôfu no chawan mushi*, p. 208). Deep-fried tofu in thick sauce (p. 209). Tofu sauté (*yaki-dofu no atsuyaki*, p. 213). Bean flowers (*nattô no mochi gurumi*, p. 215). Buckwheat-miso topping (p. 215-16). Miso mayonnaise (with sweet white Saikyo miso, p. 216-17). Contains 17 pages of color photos showing dishes prepared from recipes in this book. The 510 delicate illustrations (both line drawings and simple brush paintings) clarify and enhance the text throughout.

In 1987 this book was re-issued with a new title: *The Heart of Zen Cuisine: A 600-year Tradition of Vegetarian Cookery*. Address: 1. Abbess, Sanko-in Zen temple, Honcho 3-1-36, Koganei-shi, West Tokyo (Musashi Koganei Station).

420. Zhang, De-sheng. 1982. *Doufu cai si bai zhong* [Four

hundred tofu dishes]. Fu Zhou, Fujian Province: Science and Technology Publishing House of Fujian. 280 p. Illust. No index. 19 cm. [Chi]

• **Summary:** A unique collection of Chinese tofu recipes, arranged by type of tofu. Contains a photo of the author and his father. Contents: Soft tofu dishes. Tofu dishes. Ground tofu dishes. Very firm tofu dishes (with doufugan). Yuba dishes. Ground soybean dishes. Dried yuba dishes. Vegetarian dishes. Address: Fujian province, China.

421. Hansen, Barbara. 1983. Cookbook welcomes the new year: A few celebrity recipes added to old favorites. *Los Angeles Times*. Feb. 10. p. L1, L29. [1 ref]

• **Summary:** The Los Angeles Chinese Women’s Club has reissued its cookbook, *Gourmet Celestial*, first published in 1970. Income from sales is used to fund scholarships. The book includes several meatless recipes that are traditionally served during the 24-hour fasting period that runs from midnight of Chinese New Year’s Eve to the sundown of New Year’s day. One of these given here, Chinese meatless dish (Law Hon Jai) includes: “¼ pound dried bean curd stick [dried yuba sticks], soaked overnight and cut into 2 inch lengths,... ¼ pound sweet dry bean curd [probably sweet dried yuba], soaked overnight then halved,... 4 or 5 pieces fried bean curd, quartered,... ½ cup fermented bean curd cake [fermented tofu], ¼ cup red bean curd” [red fermented tofu]. Address: Times staff writer.

422. O’Brien, Jane. 1983. *The magic of tofu and other soybean products*. Wellingborough, England: Thorsons Publishers Ltd. 128 p. April. Illust. by Niall Morris and Clive Birch. Index. 20 cm. [6 ref]

• **Summary:** Written in large letters at the top of the cover: “The Best of Vegetarian Cooking.” Contents. Foreword. Introduction (incl. tempeh, soy flour, miso, tamari). 1. Making your own tofu. 2. A word about the recipes. 3. Recipes. 4. Soymilk. 5. Other soybean products (Okara, gô, yuba, soynuts). 6. Soybeans as beans. 7. Food value of soyfoods. 8. History of the soybean. Further reading.

Jane was a soyfoods pioneer in Ireland. In the Introduction (p. 18-21) Jane explains that “I was frequently ill as a child, and on several occasions I was very near to death’s door.” Yet as she got older, she grew to enjoy gourmet food and gourmet cooking. The man who became her husband gave her the first book she read on natural foods. “As soon as I became aware that food contributed to the maintenance or destruction of health, I began a lifetime of experimentation. I changed from refined foods to whole foods, gave up eating red meat, studied macrobiotics, so much so that over ten years ago I went to Boston [Massachusetts] with two children under the age of four, and pregnant with a third, to study the subject, and I continued from there to develop my own system.” Her husband, an actor, is now quite happy with her cooking, after “an

austerity programme involving giving up meat, cutting down on and nearly eliminating dairy food, getting rid of sugar.”

“I have been working on creating meals that are increasingly more healthful for over seventeen years now [since 1966], and I find it a fascinating study. It is wonderful to witness the vast improvement in my own health...” Her son Quinn is now 15 years old. Her religion is Baha’i. “In furthering my interest in natural foods, I have given cooking classes in Dublin [Ireland] for over ten years [since 1973], not steadily, but from time to time when there were people interested. In the early days of my cooking classes, I also imported the necessary foods: whole grains, beans, miso and natural soy sauce from suppliers in England as they were not available in shops here in Dublin. There was no other way of getting these foods for my family. During the cooking classes I sold much of the stock... That led to the beginning of Ireland’s first natural food store which I started with my husband’s patient assistance, but which we left to someone else for many reasons.”

“Several years ago I began to use tofu and soyfoods and to include them in the cooking classes. Because I was so interested in learning more about them, I attended the soyfoods conference held in Illinois in 1980 and the one in Colorado in 1981... I think that I became so excited about tofu, soymilk and soyfoods really because I had long been a lover of puddings, custard, and creamy toppings, often made with dairy foods. However, because I needed to cut down on my use of dairy foods, I had nearly eliminated all of those things from my diet. When I discovered that it was possible, not only to make tofu and soymilk successfully in my own kitchen, but to use it for very accurate substitutions of my childhood favorites which were far more healthful than the things I had eaten as a child, I was thrilled.”

Note: On 9 November 1979 Mrs. Jane M. O’Brien (7 Woodside Drive, Rathfarnham, Dublin 14, Ireland), ordered books on tofu, tofu & soymilk production, miso, and tempeh from Shurtleff & Aoyagi at Soyfoods Center in California.

Talk with Jane O’Brien. 1980. July 13. She developed the many recipes in this book using soybeans that she imported from England to Ireland, starting in about 1980.

Letter from Jane O’Brien. 1983. May 28. This book was published in April 1983. “It is presently on sale in England but not yet here in Ireland.” Address: 7 Woodside Dr., Rathfarnham, Dublin 14, Ireland.

423. Shurtleff, William. 1983. Talk with Louis Chiang about tofu plants he sold in China (Hong Kong, May 27) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 2-3. Unpublished manuscript.

• **Summary:** Tofu plants he sold in China. He has sold two lines to Guangdong province, the province in which Guangzhou (formerly Canton) is located. One line can

process 500 kg/hour of dry soybeans. Shurtleff asks: Why do they not go low-tech? Answer: Because they want to modernize; they want everything the best and the newest. Tofu is a monopoly in China; only one organization handles it. Louis feels that the large plant is rational. The key is to retrain those who were not educated during the cultural revolution,

Advice: Preparing a catalog and advertizing letters is a waste of time. Best to find a decision maker directly, via the right channel. You need personal connections, built up gradually, which takes time. Finding the right man may take 3-6 months. They must know your background and purpose. Many Westerners get frustrated if they have no orders after 1-2 years; they must be patient. He also feels it is important that old plants should be demolished.

The proper introduction is very important. Beware of making outside contacts. Stick with your invited group. Let them make contacts and allow contacts.

In Beijing there is a “Food Research Institute.” They may be of help.

Ask key contacts for a letter from their organization, on letterhead. Don’t discuss politics or economics—its too sensitive.

In China, tofu production may have increased, but quality may have decreased. Party leaders, not food technology experts, make decisions. They are now trying to change that. Scientists and intellectuals had a very low status, but now some are trying to put them in front. But the masses resist. They either use fast radical means or go slowly.

His tofu equipment was paid for by Chinese money—the equivalent of \$500,000 for two lines.

Louis Chiang would like to work with Takai Tofu & Soymilk Equipment Co., especially if Takai developed a continuous process system. Takai sold a production line to Harbin but it is not working now.

Research people are hungry for knowledge; the bureaucrats are not.

With new private, personal freedoms, people are generally happier.

Hong Kong yuba: See the trade promotion council, a government organization on the 3rd floor of the Connaught Centre, an office tower in Hong Kong. They have a research library.

Mr. Wang says: Ask the trade promotion council to ring and introduce me as a researcher.

They want immediate gain, not long term research, so our soymilk seminars at various places in China may not work.

He likes Deng Xiaoping (who initiated the Four Modernizations, in December 1978 at the Third Plenum of the 11th Central Committee); he is not so fond of Hua Guofeng.

China is now learning about tofu technology from Japan. Adding almond to soymilk improves its flavor.

All his trade is with China. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

424. Shurtleff, William. 1983. Fly from Hong Kong to Guangzhou (Canton); Give seminar on soymilk (May 29-30) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 5-6. Unpublished manuscript.

• **Summary:** On Sunday, May 29. Our group of three (John Davies and Asger Somer Hansen of Danish Turnkey Dairies {DTD}, and I) took an airplane from Hong Kong to Guangzhou, in the far southwest of China. Today is my first day in the People's Republic of China. Canton is very different from the rest of China, more affluent, western, capitalistic. The people speak Cantonese. Seminar rehearsal.

May 30, Monday. In our nice Chinese hotel, built around a big garden, I conduct my first of four seminars on soymilk for government officials China. I have prepared a 2-hour slide show with 60 color slides. The main topics: (1) Ten reasons soybeans will be the protein source of the future (2) The role of soymilk in China's modernization program (3) Various products a soy dairy can make from soymilk (ice cream, tofu, yogurt, yuba, etc.) (4) The advantages of a combined soy-cow dairy (5) Soymilk as a modern food.

Part II: DTD described its soymilk process and we served 3 samples: plain, sweetened, and chocolate. Out of the 35 participants, most liked the plain-unsweetened flavor best. They said it was free of grassy and burnt flavors and was not too thick or too thin. The second favorite was the sweetened. Only 1 person rated the chocolate as the best. The thickness was just right; the sweetness too. They would like to drink it hot in the winter. A general complaint regarding the sweetened and the chocolate was that they coated the mouth and were too thick, but I noted that they were not cold when served.

1. Soymilk could be used to make ice sticks. 2. *Mingun* = a type of firm, deep-fried tofu. 3. Bamboo yuba [dried yuba sticks]-*Fu Chuk* in Cantonese. 4. There is a lot of dried Yuba in Guangzhou. 5. Henan is a major soybean growing region in China.

Lawrence Yung-Lu Li.

1. Dr. Chow (initials = I.C. or En-Tsu) got a PhD on tofu in the USA in the 1930s from Cornell University (Ithaca, New York). See Cal (Berkeley) thesis list of dissertation abstracts. 2. Guangzhou dairy is planning to make soymilk. 3. There are no books on tofu in China, new or old.

May 31. I walk out in the early morning to watch thousands of people doing Tai-chi. I conduct Guangzhou seminar #2. Then drive out into the Guangdong countryside to see proposed DTD dairy site. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

425. Shurtleff, William. 1983. Fly from Guangzhou (Canton)

via Changsha to Zhengzhou (June 1 to 3) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 6-8. Unpublished manuscript. • **Summary:** June 1. Take a long walk around the major market in Guangzhou. I don't see much tofu [*dow foo*]. It is always in 18 inch squares, 2 inches thick. Also saw *dow-gan* (pressed brown tofu squares) and *dow-pok* (small deep-fried tofu cubes).

11:00 Fly to Zhengzhou (capital of Henan province). Turbulent airplane ride; after a very long wait in a small airport, it is decided we must stay overnight at Changsha.

June 2, Thursday. Zhengzhou seminar #1 on ground floor of hotel lobby. Maotai banquet #1 in evening, with ten toasts and a 25-course meal.

Question: How does the cost of aseptic Tetra Pak cartons compare with the cost of other aseptic or sterile pouches, bottles or cans?

Ching-sha Fujook is Bamboo yuba [dried yuba sticks] in a medium-thick tan sauce at the Maotai banquet.

Question: Is China now a net importer or exporter of soybeans?

June 3, Friday. Zhengzhou. 6:00 a.m. walk with Eddie Siu to the big Zhengzhou market (largely indoors). See lots of soft tofu and soymilk. For each type of product you must stand in a different line, and each line is very long—sometimes requiring a wait of 20-30 minutes! I thought the Communist motto was "Serve the people." What a huge waste of everyone's time.

Types of tofu: Most is soft tofu (*Shui-doufu*, like Japanese Momen-dofu, made with the separation of curds and whey) 15 slabs on wood boards 18 x 18 x 4 to 5 inches thick. Pieces are cut with a knife, weighed in a scoop on a hand held lever arm, and put into customer's bag. (b) Dofu-gan, tan squares 1.5 x 1.5 x 3/8 inches. (c) "Thousand sheets" are very thin (like paper). 10-inch squares called *qian zhang*. (d) Tofu rolls (dou-fu? = maki) 3 inches in diameter and 8 inches long made of tofu wrapped in cloth and boiled (illustration). (e) Doufu-ru = fermented tofu in jars. (f) Doufu-fen = soy flour (full fat?) used to make tofu and soymilk. (g) A semi-firm tofu.

Buying: You must present a ration ticket and also pay money. 500 grams of *shui-dofu* costs 10 cents (i.e., ¥0.10). If you use up your tofu ration tickets, you may go to a separate place and use a grain ration ticket, but it costs more.

Sprouts: Saw 2 baskets (wicker 18 inch diameter, 14 inch deep) sold outdoors next to 5 baskets of mung beans. *Lu Dou-Ya* = mung sprouts. *Huang Dou-Ya* = soy sprouts.

Flour: *Doufu-fen*. Probably whole soy flour? In a plastic bag containing 500 grams? Instructions read (in Chinese):

1. To make soymilk (*dou-jiang*): Add 13-15 *jin* (6.5 to 7.5 kg or liters) of water (cold or hot) to contents of bag, adding a little at first to make a paste. Then, add the rest and mix/beat until contents of bag are smooth and bring to a boil.

2. To make *doufu-fa* (tofu curds): Proceed as for soymilk using any 3-4 kg of water per bag. Then, add coagulant (what coagulant? No pack of it in the bag) to 0.15 kg of water. Pour boiled milk into coagulant solution and let stand for 5-10 minutes.

3. To make doufu: Wrap tofu curds (#2) in a cloth and press for 20 minutes. (Made in Zhengzhou: Tel. 26644)

This product is widely sold. 1 bag cost ¥0.40?

Soymilk is now one of the hottest subjects in the food field in China. Interest has grown rapidly since 1982 because (1) Vitasoy's success in Hong Kong (yet Vitasoy still has no plant in China and no joint venture). (2) Japan and Southeast Asia's soymilk success. (3) Alfa Laval-Kibun and DTD's competing efforts to sell soymilk plants to China. I predict that there will soon (in 3-10 years) be many modern soymilk plants in China, most run by the Ministry of Light Industry.

One of the new AB-9 Tetra Pak machines sells for about \$665,000 in July 1983. It has a capacity of 3,000 liter/hr of milk.

Jiaozi = (Chiao-tsi) = meat dumplings.

Tetra Pak is a family-run business. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

426. Shurtleff, William. 1983. In Harbin (June 6-7) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 10-12. Unpublished manuscript.

• **Summary:** 6:00 a.m. I walk to the local market. See one stall (a mobile cart) selling gelled tofu curds (*doufu-fa*) over which is poured a sweet brown sauce then topped with some diced red chilies and green herbs. Served with deep-fried breadsticks. One other place serves soymilk hot with deep-fried breadsticks. No tofu at all in the market. Some say it is sold only in winter. No other soyfoods seen.

Soymilk terminology: (1) Dou Nai—it sounds more modern than “Dou Jiang.” Implies or connotes no beany flavor, is thicker and has a higher protein content. (2) Dou Ru—(Alfa Laval used this) is harder to pronounce.

[Henan Area grows lots of soybeans]: more than Heilongjiang? The money to build soymilk plants in China is partially foreign capital. People and institutions are falling all over each other to help China develop “China Orient Leasing.” 50% are Japanese.

Eaton [Eton], A consortium from Cleveland, Ohio, is planning to build a \$50 million oil extraction and protein refining plant in Jiamusi. Oil = extract, refine, make margarine, shortening, etc. Protein = feed, isolate, concentrate, tofu and soymilk production.

Tuesday June 7, 1983 (Harbin): Min-Lite = the Ministry of Light Industry is interested in a soymilk plant. Also, the State Farm Bureau (Bean processing division) and the Soybean Institute is working in breeding (for both protein and oil), diseases, and physiology.

Soymilk Taste Tests in Harbin: Chocolate was vastly the first choice, second was sweetened, third was plain / dairy-like. They dislike added oil in soymilk and would like to try fruit-flavored soymilk (apple, pineapple). Added fat coats the mouth with a greasy / gummy film. Vitasoy has no added fat.

Dou Ru Fen: Niu Nai Mai Jing. 205 gm. This product consists of a white powder containing 10% cow's milk powder, 40% soymilk powder (spray-dried traditional soymilk, not soy flour), and 50% (!) sugar. 1000 tonnes a year are made, starting in 1978 or 1979. Sold to housewives who use it to make breakfast soymilk. Costs RMB 0.78–0.80 = 70–80 cents. Cow's milk powder is stirred into hot soymilk. The mixture is concentrated and spray dried. Also made in Beijing, but this one is the best quality.

Pure: Soymilk powder is made in Beijing by Beijing Foodstuff Corp. since 1980. Called Doujiang-Fen (Soymilk powder) and also retailed to housewives for breakfast use. It is 50% powdered soymilk and 50% sugar. It is spray dried.

Fresh green soybeans (Maodou = Hairy bean): Mostly eaten by farmers. Also sold in markets. Not packaged or canned. Whole dried soybeans: some canned in China. It is sold in Beijing.

Tofu in Heilongjiang: None is sold during the summer because it spoils easily and people do not like to eat tofu in the summer. A lot is sold in winter.

Soybean use: Of China's 9 million tonnes produced, one man estimates that 80% of soybeans are crushed. The meal is used mainly for feed, but some for tofu, soy sauce, and textured vegetable protein (TVP).

Main uses for foods made with whole soybeans in approximate order: (1) Tofu and kan-dofu. (2) Soymilk. (3) Soy sauce. (4) Miso = Doujiang. (5) Yuba. (6) Fermented tofu.

Main uses for foods made with defatted soybean meal: (1) Tofu. (2) Soy Sauce. (3) Miso. (4) Soymilk.

Soy nuggets [fermented black soybeans] are made only in the south of China. This state farm bureau man estimates that there are 200,000 tofu shops in China, one in every village, but there are no statistics on tofu.

Big tofu factory in Harbin. Ministry of Light Industry people in charge. He does not think as many soybeans will ever be used for soymilk as for tofu.

Many government groups are doing research on soyfoods, such as tofu and soy sauce, but no single group. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

427. Shurtleff, William. 1983. In Beijing (June 10-11) (Document part). In: William Shurtleff. 1983. Log of Soyfoods Research Trip to China and Japan: 29 May to 10 July. Lafayette, California: Soyfoods Center. 117 p. See p. 20-23. Unpublished manuscript.

• **Summary:** Soy sauce, miso, and fermented tofu (*doufu-ru*) are all sold at one type of store, a pickle shop that sells salted

foods. I visited one of these named *Tien Yuan Jiang Yuen*. A color photo shows various types of soy sauce sold in Beijing.

In the market, the sign above the soyfoods section reads *Douzhi Shipin*. In this section they sell *fuzhu* (bamboo yuba [dried yuba sticks]), Doufu-fen (a type of soy flour made in Beijing), cubes of fried tofu (1 inch on a side, called *doubao*).

Note: This is the earliest English-language document seen (May 2012) that contains the term *doubao*.

In 1949 the East Asiatic Co. (which is owned by rich Danes) was the leading exporter of soybeans from China. They started exporting soybeans from China in the 1920s. When exporting, they had offices in Dalian (Dairen), Harbin, etc. The company now has about 80,000 employees worldwide. It is the biggest company in Denmark and the biggest foreign trading company in China, except for several Japanese companies such as Marubeni, Nissho Iwai, etc.

June 11, Saturday. Beijing seminar #1 in downstairs room. Talk with Mr. Chen of the Food and Fermentation Research Institute. Mr. Chen says the most popular vegetable oils in China are: 1. Peanut. 2. Soy (not generally refined). 3. Rapeseed.

Two organizations do research on soyfoods in Beijing: (1) His Food and Fermentation Research Institute (under MinLight, the Ministry of Light Industry); three people who work there are Mr. Chen, Mr. Dai Jiakun, and Mrs. Xu Lin. (2) Beijing Municipal Food Research Institute; contact Mr. Dai Xinjun (Dong [East] Zongbu Lane, Beijing).

Four acid tests for the buyer of any soymilk process and equipment: (1) Equipment cost (fixed). (2) Processing cost (including labor, energy, water, etc.). (3) Soymilk flavor. (4) Protein and solids recovery (percentage).

The Chinese name for thin pressed tofu sheets ("1,000 sheets / 1,000 folds) is Qianzhang or Baiyeh.

The best local markets (which have more variety of produce in the winter) are: Chongwen Vegetable Market and Xidan Vegetable Market (Chinese characters are given for both). The Chinese term for "soyfoods" is *dadou shipin* ("soybean products").

There is a new Chinese method (in Shanghai) for continuous pressed tofu sheets.

Commercial soy products made by Mr. Chen's institute: (1) Formulated soymilk for infant food. (2) Soy protein concentrate. (3) Later a modern soymilk plant will use this to make (1). Plain and sweetened soymilk in glass bottles, plus fruit (citrus = orange flavor) and malt. There are some technical problems with using plastics bags as soymilk containers; they leak and are fairly expensive. Later he will work on a lactic soymilk drink.

Research on soy sauce: Improved method. Low salt, done in factories in Beijing and Shanghai.

Most soy oil in Beijing is not refined. People like the flavor OK, but they do not know the refined flavor. Rapeseed oil is used mostly in South China. In Beijing, mostly peanut

and soy oil; peanut is more expensive and has a higher class image. Rapeseed is the cheapest but people don't like it.

The debate over more meat vs. more protein. Recently Chinese officials have come to understand the problem better. Send him *Diet for a Small Planet*, by Lappé.

In 3-4 months, Mr. Chen will send me an article about soyfoods in China—Tell Ira Leviton.

I visit a bookstore and buy a pinyin dictionary and a book (published last year in Chinese) about tofu. Visit the Forbidden City and a very famous square in central Beijing. Address: P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

428. Herrmann, Karl. 1983. Ueber Sojabohnen und Sojaprodukte [On soybeans and soybean products]. *Ernaehrungs-Umschau* 30(6):175-79. June. [17 ref. Ger] • **Summary:** Contents: Introduction, nutritional composition, amino acids in soy sauce. Unfermented soy products: Soymilk, tofu (*sojaquark*), aburage, kori-tofu, yuba, kinako. Fermented soy products: Soy sauce, miso (*sojapaste*), tempeh, sufu, natto. Address: Institut fuer Lebensmittelchemie, Hannover Univ., Wunstorfer Str. 14, D-3000 Hannover 91 [West Germany].

429. Shurtleff, William. 1983. Yuba: The creamy film on soymilk. *Soyfoods*. Summer p. 73-76.



• **Summary:** This is primarily a history of yuba with five black-and-white photos of yuba being made at Yuba Han in Kyoto. Address: Soyfoods Center, Lafayette, California.

430. Guo, Xiang-ao. 1983. Research on heat denaturation of soy protein after solvent extraction, and traditional Chinese soy foods. *INTSOY Series* No. 25. p. 64-66. B.J. Irwin, J.B. Sinclair, and Wang Jin-ling, eds. Soybean Research in China and the United States (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** Solvent extracted soybean flakes and meals (moisture content 9.6%) were subjected to 80°C, 90°C, and 100-105°C temperatures for 15 or 20 minutes. The critical temperature for protein denaturation was 80°C. At higher temperatures, solvent-extracted soybean meal was denatured more rapidly than soy flakes. Preparation of the following traditional Chinese soyfoods was described briefly: Soy sprouts (*dou ya*), soybean jiang (*dou jiang*), fermented black soybeans (*dou chi*), soy sauce (*jiang you*), soy beverage (*dou jiang*), tofu (regular and soft, *doufu*), firm tofu (*doufu gan*), pressed tofu sheets (*doufu yi*), vegetarian chicken (*su ji*), fried tofu (*you-doufu*), fermented tofu (*doufu-lu*), and yuba (*doufu pi*).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term *doufu pi* (spelled in pinyin) to refer to yuba, which he describes as follows: “Soy beverage is poured into a shallow pan and heated slowly. A protein film forms on the surface. This film is rolled and dried until it resembles bamboo. The taste and composition are similar to textured soy protein. It is a very nourishing food.” Address: Zhengzhou Grain College, China.

431. Shurtleff, William; Aoyagi, Akiko. 1983. The book of tofu. 2nd ed. Berkeley, California: Ten Speed Press. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Aug. 28 cm. [321 ref]

• **Summary:** Three parts of this new edition have been extensively revised and updated: (1) “Tofu Makers in the West” (p. 313-16) has been updated and now includes 310 tofu producers in the Western world (with the name, address, phone number, and contact person for each company), arranged by state or foreign country. This is the only tofu book containing such a directory.

(2) The “Bibliography” (p. 319-324) has been greatly expanded and updated. It now contains 321 publications on tofu, including all known scientific and nutritional journal articles, the 33 books about tofu written in North America since publication of the first edition of *The Book of Tofu* in 1975, and other key articles and books about tofu from East Asia and Europe, the earliest from Europe dating back to 1613!

(3) An updated listing of “People and Institutions Connected with Tofu” in the U.S. and around the world, including researchers, major tofu manufacturers in Japan, trade associations, publications, equipment dealers, and tofu apprenticeship programs.

The “Glossary” (p. 325-27) has been condensed to make space for the expanded bibliography and back matter. There is a new page about the Soyfoods Center (p. 333). The page “About the Authors” (autobiographical) has been expanded, and the photograph has been updated. “Sending Tofu to the Four Directions” (p. 335) and the inside rear cover have both been updated. Still contains 500 vegetarian recipes—both western and eastern style.

Note: A news release of 17 Aug. 1983 states: “The Book of Tofu, which introduced the Western world to tofu and inspired the founding of more than 200 tofu shops and soy dairies in North America, has sold 340,000 copies to date, making it the world’s best-seller on this popular new ‘protein source of the future.’” Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

432. Shurtleff, William; Aoyagi, Akiko. 1983. History of soyfoods in China. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 19 p. Aug. Unpublished typescript. Available online at www.soyinfocenter.com.

• **Summary:** A comprehensive history of the subject. Contents: Introduction: Soyfoods widely used in all parts of China. Overview of Chinese food and diet. Animal products and soyfoods as protein sources in China. China’s great cuisines and soyfoods. General characteristics of Chinese soyfoods industry. Information on soyfoods. Soy trade associations. Attitudes toward technology, modernization, and traditional soyfoods. Private enterprise, bureaucracy, and competing ministries. Availability of soyfoods. Address: Lafayette, California. Phone: 415-283-2991.

433. Ito, Kiyoe. 1983. Soy beans as a source of protein in Japan. In: Ajia-Chiku Kokusai Kaseigaku Kaigi Hokoku (Proceedings of the International Asian Conference on Nutrition). See p. 60-61. Held Aug/Sept. 1983. [Eng]

• **Summary:** Rice cultivation began in Japan about 2,000 years ago. Buddhism was imported to Japan from China through Korea, and with it the prohibition against eating meat [of four-legged animals]. “Therefore, the diet and cuisine depended exclusively on rice, bean, vegetables, and fish. Especially, soy beans have been widely used as materials for plant protein foods such as miso (fermented soy bean paste), tofu (bean curd), shoyu (soy sauce), yuba (dried soy milk film) and others.” Also describes the increasing westernization of the Japanese diet, especially after World War II. Address: Tokyo Gakugei Univ., Tokyo, Japan.

434. Leviton, Richard. 1983. Soyfoods in your kitchen: The variety is infinite! *Your Good Health: Review & Digest* 1(6):16-18. Oct.

• **Summary:** An introduction to tofu and tofu products, tofu main dishes, tofu desserts, tempeh, miso, soysage, “green soybean pods in plastic bags,” soynuts, natto, Hamanatto, and yuba.

Gives recipe names and ideas for each soyfood type, but no actual recipes. Concludes with the thought: “If you remember this diversity of applications of tofu and tempeh... never again will you comment, ‘Tofu is nice but it’s just a bland white block.’” Address: Colrain, Massachusetts 01340.

435. Shurtleff, William; Aoyagi, Akiko. 1983. Tofu & soy milk production. 2nd ed. Lafayette, California: Soyfoods

Center. 344 p. Illust. by Akiko Aoyagi Shurtleff. Index. Nov. 28 cm. [223 ref]

• **Summary:** Some information in Chapter 1, Appendix A, and many advertisements have been changed. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

436. *Vegetarian Times*. 1983. From nuts to milk. Nov. p. 35-36, 53.

• **Summary:** Chico-San describes itself as “A company built on a philosophy”—macrobiotics. “Over the past two decades many macrobiotic food companies have come and gone. We are grateful that we have been able to survive a disastrous fire that wiped out our facilities in 1972, plus a couple of severe recessions. Chico-San is now strong and independent.”

“We continue to operate under the belief that it is not enough just to eat brown rice, vegetables and miso soup.”

“Some of you may have already seen the first issue of our free newsletter, *The Crackerbarrel*, which featured articles on subjects ranging from organic miso and soy sauce,... Also included is a message from Lima Ohsawa, and information on processing low-sodium soy sauce (and why it may not be very desirable),...”

The signature of J. Robert Kennedy, President, Chico-San Inc., and the Chico-San logo (a sort of spiral) are shown.

437. Aubert, Emmanuelle. 1983. *Les 9 grains d'or dans la cuisine* [The nine golden grains in the cuisine. 2nd ed.]. Paris: Le Courrier du Livre. 286 p. Illust. by C. Galinet. Index. 22 cm. [Fre]

• **Summary:** The subtitle on the cover reads: 400 simple and savory recipes. Menus and advice on good health. Contents: Introduction. 1. The cereals (see p. 28-31 for instructions for making seitan at home from 500 gm wheat flour, plus 8 seitan recipes). 2. Breads. 3. Legumes: Cooking legumes, lentils, haricots, dry peas, chick-peas, azuki beans, soya. 4. Vegetables. 5. Soups. 6. Animal products. 7. Condiments, aromatics, and sauces (incl. tamari and miso). 8. Desserts. 9. Beverages. 10. 80 menu ideas. 11. Pregnancy and the feeding of young infants. 12. Some natural remedies. Where to buy supplies.

Soy-related recipes include: Making tofu at home (p. 87-91; illustrations and method taken without credit or permission from *The Book of Tofu* by Shurtleff & Aoyagi). Yuba. Grilled tofu (p. 91). Tofu with nuts (*noix*) and miso. Skewered tofu. Tofu salad (p. 92). Tofu with vegetables. Onions with tofu. Okara croquettes. Soymilk with fruits (p. 93). Making tempeh at home (p. 94-95). Tempeh goreng. Tempeh bachem (p. 95). Keripik tempeh (tempeh chips; p. 96). Tempeh croutons (p. 96). Pate of vegetables with tofu (p. 126). Jardinière au tofu (p. 128). Peas with tofu (p. 128). Soy sprouts made from mung beans (p. 129-30).

Pages 191-94 give basic information on the following fermented soya condiments: tamari, miso (Hacho [sic,

Hatcho] miso, barley miso, rice miso). Pages 278-79 list manufacturers and handlers of various foods used in this book, and pages 280-81 give their addresses: Yellow soybeans: Celnat, Les Sept Marches, Le Seuil, Lima. Miso: Celnat, Lima, Les Sept Marches, Le Seuil, le Bol en Bois, Tenryu. Only Lima and Les Sept Marches manufacture miso in France. Tamari: Celnat, Le Seuil, Les Sept Marches, Lima, le Bol en Bois, Tenryu. Nigari: Le Bol en Bois, Tenryu. Tofu: Le Bol en Bois, Tenryu, Soy. Tempeh: Traditions du Grain, Le Bol en Bois. Tempeh culture: Semailles. Koji: Les Sept Marches, Tenryu, Le Bol en Bois. Amasaké: Traditions du Grain. Soymilk: Celnat, Lima.

A photo on the rear cover shows Aubert, a woman.

Note: This is the earliest French-language document seen that mentions amazake, which it calls “Amasaké.” Address: France.

438. Editors of *China Pictorial*, Beijing. 1983. Chinese cuisine from the master chefs of China. Boston, Massachusetts, and Toronto, Ontario, Canada: Little, Brown and Co. 240 p. Illust. Index. 26 x 24 cm.

• **Summary:** An overview with many color illustrations. The section titled “The ingredients” contains color photos of them plus a glossary that includes Chinese names: Dried bean curd stick, dried bean curd sheets, bean curd fresh gluten, fried gluten (p. 42-43). Soybean paste (salted and fermented), fermented bean curd, soy sauce (p. 47). Qingdou (green soybean), huangdouya (soybean sprouts) (p. 51). Doufu (bean curd, tofu), fuzhu (dried soybean milk [dried yuba sticks]), mianjin (gluten), youpi (dried soybean curd sheets [pressed tofu sheets]), kaofu (wheat gluten / vegetable steak) (p. 52). Jiangyou (soy sauce) (p. 54). Huang jiang (soybean paste, salted and fermented), jiangdoufu (fermented bean curd).

White soup (bai tang, with soybean sprouts, p. 56).

Folk nutrition: “All illnesses originate from what is taken into the mouth.” On this page is a description of the therapeutic properties of: “Soybeans: their flavor is sweet, raw; their character is warm, and when fried [or cooked] it becomes hot...”

A long section on soybeans (p. 74) begins: “They are the pivot-point of Chinese flavor and nutrition.” Includes brief descriptions of how to make soybean milk, bean curd, deep-fried bean curds, “bean curd puffs,” and yuba.

Soy-related recipes: Slab bacon with fermented bean curd (Nanru kouru, with “3 cubes fermented bean curd, p. 113). Sweet bean paste sauce (tiendoujiang, for Peking duck; it is made from “fermented black soybeans,” p. 140). Braised “shark’s fin in white sauce (baipa yuchi, with white soup and soy sauce, p. 199). Mrs. Pockmark’s bean curd (mapo doufu, p. 207). Silkworm cocoon bean curd (canjian doufu, p. 208).

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “fermented black soybeans” to refer to fermented black soybeans.

There is a section of seven vegetarian recipes (p. 199-205).

439. Fujimori, Ikuo. 1983. *Daizu. Shizen kindaabukku* [Soybeans. Natural children's book]. Tokyo: Fureberu-kan K.K. 30 p. Illust. by Akira SETO. 26 cm. [Jap]

• **Summary:** A children's book with superb color illustrations. Shows how to make natto, tofu, and soy sprouts at home. A large color photo (p. 10-11; 2-page spread), titled "All made from soybeans," shows kinako, miso, shoyu, soymilk, yuba in a bowl of clear soup, ganmodoki, aburage, cooked whole soybeans (*nimamé*), okara sauteed with vegetables, dengaku (made with tofu and miso), and atsuagé. Address: Daizu kairyo no dai-ichi ninsha [President, Takeya Miso Co., Nagano, Japan].

440. Herrmann, Karl. 1983. *Exotische Lebensmittel. Inhaltsstoffe und Verwendung* [Exotic foods. Ingredients and uses]. Berlin, Heidelberg, & New York: Springer-Verlag. x + 175 p. Illust. 21 cm. See p. 111-19. Sojabohnenprodukte. [18 ref. Ger]

• **Summary:** The chapter on legumes contains brief introductions to soybeans, green vegetable soybeans (*unreife Sojabohnen*), soy sprouts (*Sojabohnensprossen*, *Sojabohnenkeimlinge*), soymilk (*Sojamilch*), tofu (*Tofu*, *Sojaquark*), soy sauce (*Sojasosse*, *Shoyu*), miso (*Miso*, *Sojapaste*), tempeh (*Tempeh*), fermented tofu (*Sufu*, *chinesischer Sojabohnen-Käse*), and natto (*Natto*, *fermentierte ganze Sojabohnen*). Tables shows the nutritional composition of tofu, deep-fried tofu pouches (*Aburage*), dried-frozen tofu (*Kori-Tofu*), yuba (*Yuba*), roasted soy flour (*Kinako*), and miso, plus defatted soybean meal (*entfettetes Sojabohnenmehl*; 51% protein), and soybean concentrate (*Sojabohnen Konzentrat*; 64.9% protein). Address: West Germany.

441. Jaffrey, Madhur. 1983. *Eastern vegetarian cookery*. London: Jonathan Cape. xii + 531 p. Illust. by Susan Gaber. Index. 24 cm.

• **Summary:** This is an expanded version of *Madhur Jaffrey's World-of-the-East vegetarian cookery* (1981, New York). The author of this creative book, a woman, was born in British India on 13 Aug. 1933. She first became known as an actress in India, but later found fame as a food writer. She has lived in America for more than 20 years. She presents 21 recipes for bean curd (tofu), 7 for tempeh, and some for yuba and miso. Soy-related recipes include: Aubergine slices with white miso (Japan, p. 4-5). Green beans with soy sauce (Japan, p. 20), Cabbage with miso (Japan, p. 29). Lotus root with soy-sauce dressing (Korea / Japan / Hong Kong, p. 46-47). Yellow pumpkin cooked with soy sauce (Japan, p. 74-75). Fresh soy beans, steamed (China, p. 76, with "fresh green soy beans in their pods"). Yien Koo's Spinach with fermented bean curd (China, p. 78-79). Pecel (Vegetable

salad with spicy peanut sauce, plus tofu and tempeh; Indonesia, p. 87). Tempura (with tofu; Japan, p. 89-92). Soy bean sprouts (how to grow, p. 119). Soy-bean and mung-bean sprouts seasoned with sesame oil (Korea, p. 123-24). Tempeh, Fried tempeh, Fried, pre-seasoned tempeh, Sambal goreng tempeh kering (Sweet and sour tempeh), Tempeh cooked in coconut milk (Indonesia, p. 127-30). Thai fried rice (with red fermented tofu, p. 176).

Chapter 4 (p. 187-221), titled "Soy milk, bean curd, and wheat gluten," contains the following: Introduction to each ingredient. Soy milk (making your own at home). Making your own bean curd. Udofu (Yudofu, simmering bean curd with seasonings, Japan). Bean curd with watercress (Singapore Chinese). Bean curd with fresh coriander (Taiwan). Korean-style bean curd in a hot water bath. *Hiya-yakko* (Chilled bean curd, Japan). Bean curd with broccoli (Hong Kong). Cabbage cooked with bean curd (Japan). Bean curd with a deliciously spicy sauce (China). Carrots and beans with a bean-curd dressing (Japan). Bean curd, mushrooms, and peanuts in hoisin sauce (Chinese style). Sautéed bean curd (Korea). Tofu dengaku (Toasted bean curd with a miso topping, Japan). Fried bean-curd cubes (Most of East Asia). Soy-bean sprouts sautéed with fried bean curd (China). Fried bean curd with a sweet-and-sour sauce (China). Fried bean curd cakes with a mustard surprise (Japan). Inari-zushi ("Bags" of fried bean curd stuffed with sushi rice, Japan). Pressed bean curd with cabbage (China). Salad of pressed bean curd, mung-bean sprouts, and agar-agar (China). How to make fried and baked wheat-gluten balls. Stew of baked wheat gluten, potato, turnip, carrot, and cabbage rolls (Japan, p. 215). Fried wheat gluten with broccoli, carrot, and mushrooms (China). Fried wheat gluten and potato stew (Indian style). Shredded wheat gluten and Cabbage with fennel seeds (Indian style). Buddha's delight (A mixed Chinese stew, Hong Kong; with yuba, fried tofu, and fried wheat gluten balls).

Chawanmushi (Steamed savory custards, with tofu; Japan, p. 223-26). Omelette with bean curd (Japan, p. 230-31). Soy-sauce eggs (Thailand / China, p. 245). Paneer (Fresh cheese from cow's milk; India, p. 277-78). Hot or cold noodles with a soy-sauce dressing (China, p. 288). Noodles with a hot-and-sour bean sauce (China, p. 290). Vegetarian mee krob (Crisp noodles with pressed bean curd and eggs; Thailand, p. 296-97). Noodles with quail eggs, mushrooms, spinach, and yuba (Japan; p. 298-99). Hoppers (yeast pancakes; Sri Lanka, p. 315). Roti (Flat whole-wheat bread; India, p. 320). Delicious stock made with soy-bean sprouts (p. 340). Clear soup with mushrooms, bean curd skins [yuba], and spinach (Japan, p. 346). Clear soup with soft bean curd and Chinese leaves (p. 346). Miso soup with bean curd (Japan, p. 357). Miso soup with carrots and mushrooms (Japan, p. 358). Fried, munchable soy beans [soynuts] (China, p. 373). Potato and tempeh patties (Indonesia, p. 394). Dipping sauces (with soy sauce, p. 414-

17, incl. kochu chang—Korean soy sauce). Kombu relish (with soy sauce; Japan, p. 435). Shoyu daikon (White radish pickled in soy sauce; Japan, p. 436). Ginger quick-pickled soy sauce (China, p. 436). Aomidaikon (Quick pickled small white radishes, with slightly sweet yellow miso; Japan, p. 438-39). Chinese-style jellied bean-curd sweetmeat with a peanut topping (Singapore, p. 462-63).

General information [like a glossary] (p. 481-506): See: Bean curd (regular, fried, fermented {*fu-ju*, *nam-ye*, *tao-hoo-ye*, red bean curd}, pressed {*doufu kan*}, pressed seasoned {*pai doufu kan*}, dried bean-curd skin or yuba). Beans (azuki, soy). Bean sauce (made from fermented soy beans). Chilli paste with soy bean (and garlic). Hoisin sauce. Miso. Nam yee (see Bean curd, fermented). Nigari. Soy beans, fresh. Soy-bean sprouts. Soy milk. Soy sauce (incl. Japanese, Chinese dark and light, Japanese usukuchi, Indonesian ketjap manis). Tao Hoo Yee (see Bean curd, fermented). Tempeh. Yuba. Sources (of ingredients; p. 507-10). Address: New York City, NY.

442. Rohé, Fred. 1983. *The complete book of natural foods*. Boulder, Colorado: Shambhala. xvi + 491 p. Illust. Index. 26 cm. [120 ref]

• **Summary:** This book is about “The New American Diet,” which is an “omnivarian” diet including some fish and meat. Chapter 14, titled “New and future natural foods,” contains a section titled “Soy foods” (p. 162-65) including tofu, tempeh, miso, soy sauce, soy milk, and other soy products (yuba and sufu). The work of William Shurtleff and Aoyagi, and their Soyfoods Center, is mentioned 2-3 times. Toward the back of the book are many soyfoods recipes.

The Prologue tells Rohe’s life story and pioneering work with natural foods. In 1964, at the ripe old age of 27, he didn’t feel good, didn’t look good, and didn’t like it—the result of years of smoking, drinking, eating bad food and “burning the candle at both ends.” “It was time to do something about it. Adelle Davis became my guru and Thom Hamilton—the health foods store owner who sold me [her book] *Let’s Eat Right to Keep Fit* became my mentor.” Within a few months he was feeling much better. “So in 1965 I bought a small health food store in the Sunset district of San Francisco.” It was named Sunset Health Foods.” He discarded most of the dietetic foods on the shelves and replaced them with “old-fashioned groceries—basic stuff, traditional, simple, whole food... What was evolving was a modern version of an old-fashioned grocery store.” He would provide information instead of hype, bulk retail foods sold out of barrels, crocks, jars, and drawers instead of packaged products, food instead of food supplements. He renamed the store “New Age Natural Foods.”

“My career ended in 1973, after eight years. New Age Natural Foods had served as a model for what were called in those days ‘hippie food stores.’ It is credited as being the prototype natural foods store, as distinct from

a health food store.” Since 1973 Fred continued to work in the natural foods industry. In 1979, in his capacity as a consultant, he met the people of Sunburst Farms, who are his collaborators on this book. “Sunburst is the realization of a vision experienced in 1951 by its founder Norm Paulsen, while he was living as a student monk studying yoga at the Self-Realization Fellowship in Los Angeles. He moved to the Santa Barbara area, and while operating a construction business in 1968 established Sunburst Farms as a group of people living communally under spiritual principles on 160 acres of land in the mountains above Santa Barbara. The community-owned business, Sunburst Natural Foods, grew foods organically and flourished. In 1970 they opened a natural foods retail store in Santa Barbara. The community grew to include a second ranch and a total membership of over 200 people. “The business came to include manufacturing and wholesaling as well as retailing. There are now five Sunburst Farmer’s Markets, two of them—in Goleta and Ventura—large, complete, natural foods supermarkets. Sunburst also owns and operates a natural foods restaurant, ‘The Farmer and the Fisherman,’ 35 miles north of Santa Barbara along the coastal highway.” Then Norm envisioned a new direction and everything changed. They traded their 6,000 acre coastal ranch for land in northeastern Nevada totaling over 500,000 acres. “It could hardly have been a more radical change. But the soil is rich in minerals and there is abundant water from artesian wells. They are responding strongly to the challenge of, as they say, ‘making the desert bloom as a rose.’”

“Appendix eight: Recommended reading list” (p. 470-78) includes a section titled “Soyfoods.”

This book was Re-published in 1986 as *Nature’s Kitchen* by Garden Way in Brattleboro, Vermont.

Interview with Fred Rohe. 1988. Nov. 3. Fred bought Sunset Health Foods in 1965 and transformed it into New Age Natural Foods at 1326 Ninth Ave. in San Francisco. Address: 4014 Lincoln Way, San Francisco, California 94122. Phone: 415-564-7024.

443. Santa Maria, Jack. 1983. *Chinese vegetarian cookery*. London: Rider & Hutchinson Publishing Group. 159 p. Illust. by Kate Simunek. Index. 23 cm.

• **Summary:** A 1987 edition was published in the USA by CRCS Publications, P.O. Box 20850, Reno, Nevada 89515. The recipes fall into 12 categories, one of which is “Bean Curd” (Dòufu, p. 51-66, 30 recipes). There are also many tofu recipes in other chapters, plus recipes using soy beans, “bean curd sheets” and “bean curd sticks” [yuba], “salted black beans” [fermented black soybeans] “Black soya beans fermented with malt [sic, mold], salt and flour are obtained in an almost dry form. They are particularly good for enriching the flavor of a bean curd dish.”

All recipes have both their English and Chinese names, with the latter written in pinyin with the four tonal marks

(very useful). The author notes that “Since 1958, Pinyin (‘phonetic transcription’) has been the officially endorsed romanization of Chinese, although the West has taken some time to abandon the confusing Wade-Giles system. Pinyin gives a more accurate rendering of spoken Chinese.”

444. Wang, H.L. 1983. Oriental soybean foods. In: Ivan A. Wolff, ed. 1983. CRC Handbook of Processing and Utilization in Agriculture. Vol. II: Part 2. Plant Products. Boca Raton, FL: CRC Press, Inc. See p. 91-106. Illust. Index. 26 cm. CRC Series in Agriculture. [10 ref]

• **Summary:** Contents: Introduction. Traditional nonfermented soybean foods. Fermented soybean foods. Tables: (1) Oriental nonfermented soybean foods: Fresh green soybeans, soybean sprouts, soybean milk, protein-lipid film [yuba], soybean curd [tofu], soybean flour (local names: Tou-fen, kinako). (2A) Composition of some indigenous soybean foods, 100 g, edible portion. (2B) Composition of some indigenous soybean foods, 100 g, edible portion. (3) Essential amino acid content of some indigenous soybean foods. (4) Oriental fermented soybean foods. (5) Characteristics of rice miso in relation to fermentation condition. (6) Average composition of soy sauce made from whole soybeans and defatted soybean meal. (7) Composition of various types of miso.

Figures: (1) Flow sheet for the preparation of soybean milk and its related products. (2) Flow sheet for manufacture of soy sauce. (3) Flow sheet for manufacture of miso. (4) Flow sheet for making hamanatto. (5) Flow sheet for preparation of sufu. (6) Flow sheet for tempeh fermentation. (7) Flow sheet for preparation of natto.

Note: Vol. 1 is “Animal products.” Vol. 2 is “Plant products,” Part A. Vol. 3 is “Plant products,” Part B. Address: NRRC, Peoria, Illinois.

445. *Soyanews (Sri Lanka)*. 1984. The Indonesian art of making soyafoods. 6(6):4-5, 9. Feb. [1 ref]

• **Summary:** “Recently the UNDP invited the Soyabean Foods Research Centre in Gannoruwa to send a team of food technicians to study the Indonesian experience. They have now returned to Sri Lanka after a two-month study tour which helped to acquaint them with the home and cottage level processing of soyafoods.”

Fermented foods are highly developed and very important in Indonesia. “The only fermented preparation Sri Lankans are perhaps acquainted with is with the making of hoppers, thosai [dosai], and iddli [idli in south India].”

Those who took part in the two-month study course were: Miss Ellen Jayawardene, Miss H.M. Lalitha Padmini, Mrs. J.M.K. Jayaratna, Mrs. K.G.S. Ariyaratna and Mrs. Soma Weerasuriya.

Five large photos show soyfoods being made in Indonesia on a cottage level. The foods are tempeh, tofu, yuba, and soya sauce; one photo shows a shop that makes

both tofu and tempeh. At least one person appears in each photo.

446. Shurtleff, William; Aoyagi, Akiko. 1984. History of soy protein concentrates, isolates, and textured soy protein products. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 25 p. March 4. Unpublished typescript. Available online at www.soyinfocenter.com.

• **Summary:** A comprehensive history of the subject. Contents: Definition of types of products. Part I: History of modern soy protein products from origin to 1964. Soy protein isolate: Tofu, Nagel in New York 1903, Beltzer in 1911, Ajinomoto in 1919, Cone and Brown patent in 1928, Glidden (first plant in U.S. for production of industrial grade soy protein isolate) in 1935, first study of use of soy isolates in food (Woodruff at University of Illinois, 1938), Glidden first company in the West to produce a soy protein isolate for use in food (1939, enzyme-modified), Glidden first with large-scale production of non-enzyme modified isolates (1957), Worthington Foods introduced Soyamel in 1952 (first soymilk based on isolate). Soy protein concentrates: First developed and introduced in Germany in 1925, first commercial food-grade concentrates and first patent from Griffith Laboratories in 1959. Textured soy protein products: Developed in China 1,000 years ago, made from tofu or yuba, earliest Western meat analogs developed by John Harvey Kellogg about 1896 (without soy), first synthetic industrial protein fiber (Lanital, made from casein) introduced in Italy 1936, first industrial (non-food) soy protein fibers in 1938 from Robert Boyer of Ford Motor Co. (used for upholstery), Boyer got patent for use in food (1951), rights purchased by Worthington, Dr. Harry Miller’s soya loaf in 1939, Worthington first to produce a meat analog based on spun soy protein fibers in 1960, textured soy flour (TSP or TVP) introduced as food ingredient in U.S. in 1964.

Part II: History of modern soy protein products in the U.S. from 1965 to 1981. 1964 Belden report from Harvard Business School *Protein Paradox*. Commercial Protein Foods Studies Program of the U.S. Agency for International Development (AID) encouraged U.S. firms to develop protein foods for the Third World in 1967. General Mills Bac-O’s test marketed 1966. Producers. February 1971 breakthrough when USDA authorized use of TVP in school lunch programs. 1972 *Soybeans. Chemistry and Technology*, edited by Smith and Circle, contained all the research on nutrition and processing up to that time. 1973 high beef prices led to beef-soy retail blends. Appearance of TSP cookbooks, starting in 1971. First World Soy Protein Conference held in Munich, Germany, in 1973. In 1974 Miles Laboratories/Worthington Foods introduced Morningstar Farms meat analogs, the first soy protein meat analog entrees marketed to mainstream America. Textured soy concentrates and other concentrate developments. New developments with isolates. New flavorings. New textured

soy flour development. 1978 Keystone Conference on soy protein and human nutrition sponsored by Ralston Purina. Problems with government regulation.

Part III: History of modern soy protein products outside the U.S. and Europe (1960-1981): Japan. China. Other Asia: Philippines, India, Sri Lanka. Latin America: Colombia, Mexico. Address: Lafayette, California. Phone: 415-283-2991.

447. *Daily Report—China (Foreign Broadcast Information Service)*. 1984. Changes made in Guangdong town, country fairs: Guangdong ranks first in the nation in its turnover at town and country fairs. No. 59. p. P2-P3. March 26.

• **Summary:** “For example, the peasants in the Chayang Commune in Dapu County, Meixian Prefecture, have a tradition of producing rolls of dried bean milk cream [dried yuba sticks]. In order to promote this production, the local Industrial and Commercial Administrative Department established a specialized market for this product so that most of the rolls of dried bean milk cream produced by this commune can be distributed and sold in Chaoan, Jieyang, and other neighboring counties by wholesale methods. In this way, not only were the individual traders provided with more sources of goods, the supply in the cities improved, and the exchange of materials between towns and country promoted, but also the business of those engaging in transport was benefited and the management of the markets was strengthened.”

Note. This is the earliest English-language document seen (Oct. 2012) that contains the term “rolls of dried bean milk cream,” which it uses to mean dried yuba sticks.

448. Chen, W.L. 1984. Soybean processing for food use in Taiwan. *Tropical Agriculture Research Series* No. 17. p. 143-52. March. International Symposium on Soybean in the Tropics and Subtropics. [18 ref. Eng]

• **Summary:** Contents: Abstract. Introduction. Soy milk. Instant soy milk powder. Tofu. Soybean pudding. Hard beancurd. Hard beancurd thread. Spiced and dried hard beancurd. Soy protein-lipid film and its products. Sufu (Chinese cheese). Chou tofu [ch’ou toufu] (fetid tofu, fermented). Dehulled soybean powder (enzyme active, full fat; used to prepare soy milk or soy pudding in factories, schools, and homes).

Note: This is the earliest English-language document seen (Oct. 2011) that uses the term “fetid tofu” to refer to stinky tofu.

In 1982 Taiwan imported 1,150,433 tons of soybeans from the USA, and grew 11,942 tons of soybeans in Taiwan. 80% of the soybeans are crushed to make soybean oil and meal, and the remaining 20% are made into versatile soybean foods. In 1983 two new brands of instant soy milk powder appeared on the market in Taiwan. More than 1,400 small tofu plants are located throughout Taiwan. They make and

sell their products on the same day. Only two large, modern plants produce packaged and refrigerated tofu. A continuous film-forming method for making yuba was developed by FIRDI in 1977. Address: Food Technologist, Food Industry Research and Development Inst. (FIRDI), P.O. Box 246, Hsinchu, Taiwan 300.

449. Wang, Hwa L. 1984. Tofu and tempeh as potential protein sources in the Western diet. *J. of the American Oil Chemists’ Society* 61(3):528-34. March. [22 ref]

• **Summary:** Contents: Abstract (uses the word “soybean foods” several times). Introduction. Traditional soybean foods. Trends in market growth for tofu and tempeh (based on statistics gathered by Shurtleff & Aoyagi of The Soyfoods Center in California, 1983). Tofu. Tempeh.

Traditional soybean foods can be classified as either nonfermented or fermented. Tables show: (1) Oriental nonfermented soybean foods (gives food name, local names, description, uses): Fresh green soybeans (local names: maotou, edamame). Soybean sprouts (huang-tou-ya, daizu no moyashi). Soybean milk (tou-chiang). Protein-lipid film (tou-fu-pi, yuba). Soybean curd (tofu, tou-fu, tubu, tahoo, touhu, tau-foo, dou-fu, dau-fu). Soybean flour (tou-fen, kinako) (Wang 1983).

(2) Oriental fermented soybean foods (gives food name, local names, microorganisms used, substrate, nature of product): Soy sauce (local names: chiang-yu, shoyu, toyo, kanjang, ketjap, see-iu). Miso (chiang, doenjang, soybean paste). Hamanatto [fermented black soybeans] (tou-shih, tao-si, tao-tjo [sic]). Sufu (fu-ru, fu-ju, tou-fu-ju, bean cake, Chinese cheese). Tempeh (tempe kedelee). Natto.

(3) Tofu industry in the United States (No. of manufacturers and annual production in 1975, 1979, 1981, 1982, and 1983).

(4) Soybean solids and proteins in soybean soak water as affected by soaking conditions (temperature vs. time; Lowry protein / Lowry’s protein). (5) Ratio of protein to oil content of tofu and soy milk as affected by protein content of soybeans (for different soybean varieties; the highest ratios come from the varieties Wase-Kogane, Vinton, Toyosuzu, and Coles).

Figures: (1) Flow diagram for the preparation of tofu. (2) Graph: In vitro digestibility of soybean milk as affected by the duration of boiling. Best digestibility is 12-14 minutes. (3) Four graphs: Relationship of concentration and type of coagulant to the yield of tofu. Coagulants are calcium sulfate, calcium chloride, magnesium sulfate, and magnesium chloride. The 4 graphs are: Gross weight of tofu. Moisture content. Total solids recovery. Nitrogen recovery. Calcium sulfate gives the highest values on all four graphs. (4) Four graphs: Relationship of concentration and type of coagulant to the texture characteristics of tofu. Same coagulants. The four graphs are: Hardness. Brittleness. Cohesiveness. Elasticity. (5) Flow diagram for tempeh

fermentation. Address: NRRC, ARS, USDA, Peoria, Illinois 61604.

450. Leviton, Richard. 1984. Japanese soyfoods. In: Camille Cusumano. 1984. *Tofu, Tempeh, & Other Soy Delights*. Emmaus, Pennsylvania: Rodale Press. x + 261 p. See p. 144-49.

• **Summary:** Contents: Brief biography of Leviton and introduction. Deep-fried and grilled tofu treats: age, atsuage, ganmo, yaki-dofu, doufu-gan. Tofu haute cuisine (at 280-year-old Sasa-no-Yuki in Tokyo, dried-frozen tofu, wine-fermented tofu). Delights of soy milk and yuba (incl. Yuba Han). Natto, miso, and savory soy condiments (incl. Hamanatto or “savory fermented black soybeans,” thua nao from Thailand, and natto miso). And still more: Cooked soybeans with wakame, “soy sprouts packed in a sausagelike clear tube, green soybeans in the pods, *kinako* powder (a flour made from dry roasted soybeans, used as a basis for confections or nut butters), freeze-dried instant miso soup powder, instant silken tofu powder (just add water and stir), and dry meat sauces for tofu.” Address: 100 Heath Rd., Colrain, Massachusetts 01340. Phone: 413-624-5591.

451. Hu, Dezi. 1984. The production and development of soybean protein foodstuffs in China. In: S. Wong, et al., eds. 1984. *Proceedings of the Second U.S.-China Soybean Symposium*. Washington, DC: USDA OICD. xix + 464 p. See p. 422-26.

• **Summary:** Contents: Traditional soybean foods. Modern soybean protein food. Meat extenders and analogs. Discussion. Figure 1 shows that traditional soybean foods include tough bean curd (which can be made into fermented bean curd (fu-ru), sauce bean curd, fried bean curd, or vegetable chicken), tender bean curd (to-fu), or bean curd sheet (fu-zu [yuba]). Address: Dalian Oil Industry General Factory, Liaoning.

452. Chandrasiri, Vasina. 1984. Assessment of protein quality in soybean processed foods: Available lysine contents. *J. of the National Research Council of Thailand* 16(1):35-50. Jan/June. [18 ref. Eng; tha]

• **Summary:** Available lysine contents of soybeans and 10 soyfoods was determined as follows: raw soybeans 6.62 g/16 g nitrogen, cooked soybeans 6.12, white tofu 5.64, yellow tofu 6.24, soft curd tofu 5.63, tube tofu 6.17, yuba 8.13, soy milk 4.43, soy sprouts 3.79 (each g/16g N).

Values for fermented soyfoods were as follows: white soybean paste [miso] 4.72, black soybean paste 3.72, fermented curd cake (okara) 5.35. 30 minutes of boiling did not reduce the available lysine significantly. The study concluded that there was no reduction in available lysine content of soybeans before they were made into fermented or non-fermented soyfoods. There was no change in the amount of available lysine in the non-fermented soyfoods,

but there was a small, statistically significant reduction in fermented soyfoods. Address: School of Home Economics, Sukothaithammarat Univ., Thailand.

453. Watanabe, Tokuji; Kishi, Asako. 1984. *The book of soybeans: Nature's miracle protein*. New York, NY: Japan Publications. 191 p. June. Illust. General index. Recipe index. 26 cm. [21 ref]

• **Summary:** Contents: Introduction. Part 1. General information: 1. Characteristic traits: Agronomic and other biological characteristics, physical properties, chemical properties, soybean protein, properties of soybeans as food material. 2. Current ways of using and processing soybeans: Throughout the world, traditional ways of using and processing, new soybean food products. 3. Tofu and other nonfermented soybean food products: Tofu, deep-fried tofu, dried-frozen tofu, soy milk, yuba, roasted soy flour (kinako), soybean sprouts. 4. Miso and other fermented soybean products: Miso, natto, Hama-natto (tera-nattô), soy sauce, sufu, tempeh. 5. Other ways of eating soybeans—Simple traditional Japanese foods: Parched soybeans, boiled soybeans (*budo-mame*; *hitasahi mame*), beaten and mashed [or ground] soybeans (*go*, or (from edamamé) *zunda* or *jinda*), molded soybean mash (*jinta-dôfu*), molded mashed soybeans and rice flour (*shitogi*), soybean soybean-mash paste. 6. New soybean protein products.

Note 1. This is the earliest document seen (Nov. 2008) that mentions *zunda*. The text (p. 84) reads: “When fresh green soybeans (edamame) are used in cooking, they are boiled for from ten to twenty minutes; ground; and flavored with salt, sugar, and soy sauce. The resulting dish is called *zunda* or *jinda*.”

Note 2. *Zunda* is a healthy and tasty snack or treat made from mashed edamamé. It is sweet, rich in protein, high in fiber and emerald green. It is said to have originated hundreds of years ago in Japan in Miyagi prefecture. In and around Sendai (capital of Miyagi prefecture) one can find many shops and booths that sell *zunda* cakes, *zunda* mochi treats, and *zunda* shakes, all made from edamamé (green vegetable soybeans). One well-known company in Japan that markets delicious *zunda* products is Zunda Saryo.

Part 2. Cooking with soybean food products: Tofu, yaki-dofu, kori-dofu, nama-age, abura-age, gammodoki, yuba, natto, miso, soy milk, soybeans, bean sprouts. Afterword. Bibliography.

In the chapter on tofu, pages 43-44 discuss *okara* or *unohana* (the residue remaining after soy milk production); a photo shows it in a glass bowl. “Though it formerly appeared on many Japanese tables seasoned and cooked with vegetables, today it is most often fed to animals. As the number of animals raised in urban and suburban areas decreases, however, tofu manufacturers are finding it harder to dispose of residue.”

Page 99 notes of tofu: “At a certain temple in Kyoto

is a plaque bearing the following inscription, which, while comparing this food to religious faith, clearly shows the esteem in which the Japanese people hold tofu. ‘Religious faith should be like tofu: it is good under any circumstances. It is good boiled, grilled, or fried. Raw, chilled, served with soy sauce and other seasonings, it is good with steamed rice. Simmered in hot water and flavored, it is good with sake. Because it is soft, old people and sick people welcome it, but children and young people like it too. Men like it, women like it; poor and rich both like it. Though common, it has elegance enough to find a place in the upper class.

“It cuts clean and well for use in clear broths. It is good in the meatless diets of religious training. It can be crushed for use in miso soup. It is used all the time and in all seasons. It is inexpensive yet numbered among the delicious treats. It is welcomed everywhere, in mountains as well as in big cities. It is well received at dinners for dignitaries and guests yet is convenient enough for college students who do their own cooking. Women especially should be like tofu. The mature and cultivated person should be tender, yet firm, like tofu. Though apparently tasteless, it is delicious. Though apparently ordinary, it is extraordinary.”

Other ways of eating soybeans (p. 83-84): (1) Parched—“Parched gently in unglazed ceramic dishes made for the purpose,” then tossed by people at Setsubun in February around their houses as they chant “‘Demon out! Good luck in!’ Then they pick up the beans and eat them. Parched soybeans are included in some varieties of *mochi* (glutinous rice cake) and in *okoshi* a confection made of puffed rice bound together with sugar syrup. In the past they were eaten with salt, miso, or soy sauce.”

Note: In the USA, parched soybeans are called “dry roasted soynuts.”

Tables show: (1) World production of soybeans (1977-1982). (2) Price trends in dollars per ton for wheat, soybeans, and corn (1970-1981). (3) Soybean yields in the USA and Japan (1974-1981). (4) Chemical composition of soyfoods: Tofu, abura-agè, kôri-dôfu, yuba, kinako, soybean sprouts, nattô, miso (dark yellow), soy sauce (common), soybean (Japanese). (5) Statistics on production of modern soybean products in Japan (1975-1981). (6) Annual production and prices of modern soy protein products in the USA (May 1983).

Japan once produced a million tonnes (metric tons) of soybeans annually. This figure decreased dramatically during World War II. After the war, as soybean imports from the United States steadily increased, Japan’s domestic crop gradually fell to the level of no more than 100,000 tonnes. In 1977 it was 111,000 tonnes, yet by 1982 it had jumped to 226,000 tonnes as rice acreage was reduced.

All photos are black and white. Figures show: (2) Line drawing of soybean plant with flowers and leaves. (2) Cross section of soybean seed-coat and cotyledon. (3) Graph of protein solubility (NSI) of defatted soybean meal at different

pH values. (4) Graph of protein solubility (NSI) of defatted soybean meal at different concentrations of calcium chloride. (5) Graph of relationship between time and temperature of soaking soybeans in water (colder water temperature requires longer soak time). (6) Flow sheet for making regular tofu. (7) Photo of regular (*momen*) “cotton tofu.” (8) Line drawing of grinder (horizontal type) used with soaked soybeans when making tofu. (9) Photo of continuous filter for soy-milk preparation. (10) Photo of small-scale soy-milk processing plant. (11) Line drawing of molding box [forming boxes with lids] for making regular tofu. (12) Photo of yaki-dofu [grilled tofu]. (13) Photo of okara in a glass cup. (14) Line drawing of molding box [forming box] for silken tofu. (15) Photo of silken tofu. (16) Flow sheet for packaged tofu production [GDL]. (17) Photo of packaged tofu in package. (18) Flow diagram of large-scale process for making tofu and abura-agè with 26 pieces of equipment labeled. (20) Flow diagram of continuous process for making packaged tofu [GDL]. (21) Photo of 2 pieces of abura-agè. (22) Photo of deep fryer for making abura-agè. (23) Photo of nama-agè [deep fried tofu cutlet]. (24) Photo of two types of ganmodoki. (25) Line drawing for tofu kneader for ganmodoki production. (26) Photo of kôri-dofu [dried frozen tofu]. (27) Flow sheet for making dried-frozen tofu. (28) Flow diagram of process for making large-scale dried-frozen tofu. (29) Photo of aseptic carton and glass of soy milk. (30) Flow sheet for making aseptically packaged soy milk. (31) Photo of 5 different forms of dried yuba. (32) Photo of kinako in two clear glass bowls. (33) Photo of soybean sprouts in a woven bamboo basket. (34) Flow sheet for making miso. (35) Three different types and colors of miso on 3 bamboo rice paddles (*shamoji*). (36) Line drawing of cut-away view of traditional pressure cooker (*koshiki*) for rice cooking. (37) Diagram of continuous rice cooker with 7 parts labeled. (38) Line drawing of *Aspergillus oryzae* with conidia (spores), sterigmata, and mycelium labeled. (39) Photo of pieces of koji. (40) Diagram of modern fermentation room for making koji. (41) Cut-away view of miso fermenting in a wooden vat with stone weights above vinyl film on top. (42) Line drawing of a mashing machine for miso. (43) Photo of natto in rice straw wrapper and polystyrene tray. (44) Cross sectional view of pressure cooker for soybeans. (45) Line drawing of rotating mixer to combine cooked soybeans with pure-cultured *Bacillus natto*. (46) Photo of soy sauce table dispenser. (47) Flow sheet for making Japanese soy sauce (shoyu). (48) Transparent view of crusher (roller) for roasted wheat in making soy sauce. (49) Photo of modern stainless steel fermentation tanks / vats (indoors). (50) Photo of a jar and a cup of sufu [fermented tofu]. (51) Diagram showing relationships between modern soy protein foods.

Note: Surprisingly, edamamé, one of the most popular soyfoods in Japan, is mentioned only once, in passing (p. 84) in this book.

Photos on the rear cover show Tokuji Watanabe and

Asako Kishi. A brief biography of each is given.

Tokuji Watanabe: Born in 1917 in Tokyo, he graduated from the Faculty of Agriculture of Tokyo University in 1941, with Doctor of Agriculture. In 1945 he entered the National Food Research Institute (NFRI), of which he became director in 1971. In 1977 he resigned that position and became a professor at the Kyoritsu Women's University, where he now teaches. Address: 1. D. Agr., Kyoritsu Women's Univ., Tokyo.

454. Miller, Bryan. 1984. Diner's journal. *New York Times*. Aug. 3. p. C18.

• **Summary:** This is a brief review of Toons, a Thai restaurant, at 417 Bleecker St., at Bank St. "One of the better appetizers was shrimp fritters, a tasty combination of ground shrimp with herbs that have been wrapped in bean curd skin [yuba] and deep-fried (\$3.95)." They came with a mild sweet-and-sour sauce.

455. Chan, Fred. 1984. General uses of soybeans in Hong Kong and competition from Chinese soybeans. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 15-17. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** Tofu: The two major types of tofu in Hong Kong are soft tofu (which is displayed in water to maintain its form) and mild tofu (which is firmer, is displayed on wooden planks, and is the most common type). Chinese soybeans are preferred to Canadian soybeans because after a maximum of 5 hours on display in the open market, water will start to weep from the tofu made from Canadian soybeans. In 1983, about 6,000 tonnes of imported soybeans were used to make tofu in Hong Kong; this was about 33% of the total soybeans imported.

Bean curd sheets and bean curd sticks [yuba] are very common snacks and dishes in Hong Kong. "Canadian soybeans have an advantage in this market because they produce whiter soymilk which in turn will produce whiter colour products. However, the bigger size of the Chinese soybean results in a higher yield... Manufacturers will normally mix 60% of Canadian soybeans with 40% of Chinese soybeans in order to achieve a higher output of whiter sheets... Total utilization was around 4,000 tonnes in 1983, with Canadian soybeans representing 78%.

Soy sauce and bean paste: The market is dominated by Chinese soybeans because bigger beans produce more sauce and paste. In 1983 approximately 6,000 tons of soybeans were used to make soy sauce and bean paste, with Chinese soybeans representing 75%, Vietnamese 14%, and Canadian 11%.

Soymilk: In 1983 about 1,800 tonnes of soybeans were used to make soymilk in Hong Kong, mostly by Vitasoy.

Chinese and Canadian soybeans each share about 50% of the market.

Discusses various reasons that Chinese soybeans are very competitive in Hong Kong. The Chinese Oil, Cereal and Foodstuff Company in Hong Kong has an office in Hong Kong. Under this national organization are two agents specializing in Chinese soybeans. Transport time from China to Hong Kong is 7 days versus 32 days from Canada. Address: Director, Chung Hing Co., Hong Kong.

456. Chen, Steve. 1984. Soyfoods in the Far East and USA: Products, markets, trends. In: American Soybean Assoc., ed. 1984. First European Soyfoods Workshop, Proceedings. Brussels, Belgium: ASA. 36 p. See p. C1-C38. Held Sept. 27-28 at Amsterdam, Netherlands. [11 ref]

• **Summary:** Contents: Summary. 1. Introduction: Ten reasons why soybeans will be a key protein source for the future. 1. Soyfood products. A. Non-fermented soyfoods: Fresh green soybeans, soybean sprouts, soynuts, soymilk, soy flour, yuba or soy protein film, tofu. B. Fermented soyfoods: Soy sauce, miso, tempeh, natto, fermented tofu, fermented black soybeans (tou-shih, hamanatto). 3. Soyfoods markets and trends in the Far East: Taiwan, China, Japan, South Korea, Indonesia, Malaysia, Singapore, Thailand, Philippines. 4. Soyfoods markets and trends in the U.S. 5. References. Plus 15 tables and 8 figures.

"It is our [American Soybean Association's] strong intention that marketing and consumption of soy protein should not in any way deter the expansion of the production and sale of as much animal protein as the world can be expected to produce in the years ahead. Soy protein foods are being intentionally brought to the market to complement and not necessarily to replace animal protein products."

"Taiwan imported 1.41 million tonnes (metric tons) of soybeans in 1983 and used about 250,000 tonnes as soyfoods for direct human consumption, which made Taiwan one of the highest in per capita consumption of soyfoods (13.2 kg or 29 lb) in the world. In the past 10 years (1974-1983), the consumption of traditional soyfoods showed an average increase of 3% per year as compared to 12% and 8.1% for poultry and soy oil, respectively. The market for packaged soymilk, soy pudding and tofu has also been expanding rapidly in recent years in Taiwan." Table 7 shows the production of soymilk in Taiwan, which grew from 103,600 tonnes in 1974 to 210,000 tonnes in 1983, for an average growth rate of 8.2% a year.

China produces about 9 million tones of soybeans a year, and about half of these are consumed as soyfoods, giving a per capita consumption of 4.5 kg of soyfoods. "An improvement in the general economy and soyfood technology and equipment will bring a sharp increase in soybean demand and more soyfoods consumption."

In South Korea soymilk consumption has increased more than seven-fold in the last 4 years. Currently about

10,000 tonnes of soybeans are used to make 70,000 tonnes of soymilk. "It is projected that soymilk production in Korea will double in 1984 as compared to the previous year."

Indonesia continues to be Southeast Asia's largest consumer of soybeans as food. In 1982/83 soybean consumption was 6.7 kg per capita. Indonesia consumes about 1 million tonnes of soybeans annually, 60-65% of them in the form of tofu and 35 to 40% as tempeh.

Malaysia consumes only about 30,000 tonnes of soybeans per year as food. In Singapore, more than 75% of the population of 2.5 million are Chinese. Therefore tofu, soysauce, and soymilk are the predominant traditional soyfoods consumed.

Thailand consumes about 40,000 tonnes of soybeans a year as food, mainly in the form of tofu. The Philippines uses only 5,000 tonnes of soybeans annually for food, mainly as tofu.

To summarize (Table 6), annual per capita consumption of soybeans in various East Asian countries, in descending order of the amount consumed, is as follows: Taiwan 13.2 kg (population 19 million); Japan 8.3 kg (population 120 million); South Korea 7.5 kg (population 40 million); Indonesia 6.7 kg (population 150 million); Singapore 6.25 kg (population 2.4 million); China 4.5 kg (population 1,000 million); Malaysia 2.1 kg (population 14 million); Thailand 0.8 kg (population 50 million); Philippines 0.3 kg (population 15 million). Address: Director, American Soybean Assoc., Room 603, Kwang-Wu Building, No. 386, Tun Hua South Road, Taipei, Taiwan.

457. Loh, Michael. 1984. An overview of export markets for edible soybeans. In: Ontario Ministry of Agriculture and Food, Market Development Branch. 1984. Workshop on Export Markets for Ontario Soybeans: Edited Proceedings. 45 p. See p. 1-9. Held 5 Sept. 1984 at Wheels Motor Inn, Chatham, ONT, Canada. 28 cm.

• **Summary:** "Ontario first exported edible soybeans in 1972 and over 12 years have built it into a \$40 million business. 1981 was our best year when exports totalled \$46 million... The bulk of Ontario's soybean exports are sold to the Far East [East Asia]-Japan (\$8 million in 1983), Singapore (\$6 million), Hong Kong (\$3.5 million), Malaysia (\$1 million), Indonesia, and Korea." In these countries soybeans are consumed in the daily diet of the people. In Japan, for example, they are made into miso, tofu, natto, soymilk and shoyu. Korea also makes soy sprouts, Indonesia makes tempeh, and Singapore, Malaysia, and Hong Kong make dried yuba. In addition, sales to the Netherlands, United Kingdom, and France are quite significant.

Concerning Ontario's market share of soybean imports for food use: Japan imports 877,300 tonnes, of which 27,000 tonnes or 3.1% is from Ontario. Singapore and Malaysia import 36,000 tonnes, of which 20,000 tonnes or 55.0% is from Ontario. Hong Kong imports 20,000 tonnes, of which

10,000 tonnes or 50.0% is from Ontario.

Japan's sources of its 877,300 tonnes of imported soybeans are as follows: USA 570,000 tonnes (65%), China 280,000 (32%), Canada 27,000, South America 300.

Japan uses its 877,300 tonnes of imported soybeans as follows: tofu 485,000 tonnes (55.3%), miso 180,000, natto 185,000, soymilk 25,000, cooked soybeans 10,000, shoyu 6,500, other 85,800. Within these figures, Ontario's soybeans are used as follows: Miso 20,000 tonnes (11.1% of the total), natto 5,000 tonnes (5.9%), and tofu 2,000 tonnes (0.4%). Address: Export Development Specialist, Ontario Ministry of Agriculture and Food, Toronto, Canada.

458. Barber, Linda; Lampert, Junko. 1984. *The tofu gourmet*. Tokyo: Shufunotomo Co. 129 p. Oct. Illust. Index. 27 cm. [Eng]

• **Summary:** A beautiful book, packed with superb color photos. Contents. Preface. Preparing, buying, and storing tofu. Recipes-1. Dips, sauces, main dishes. 2. Desserts. On the inside back dust jacket are biographies of Linda Lee Barber and Junko Lampert.

The color dust jacket of the first printing (1984) shows sculpted green kiwis atop a refrigerator tofu cheesecake, whereas that of the second printing (1989) shows a layered "Man's cake" topped with delicate alfalfa sprouts, thinly sliced red radishes, and slivered carrots.

The book was published in London, England in 1986 by Portland House/Windward. Address: Japan.

459. Reed, M.H. 1984. Shanghai regional cooking. *New York Times*. Dec. 16. p. WC37.

• **Summary:** This is a restaurant review of Shanghai City, 152 South Hudson Ave. (Route 9A), Croton-on-Hudson, New York. Recommended dishes include: Watercress with beancurd soup. Beancurd house style. Beancake with black mushrooms.

"The kitchen's delicate frying technique was nowhere better illustrated than with fried roll fish with beancurd sheet [yuba]. This essentially bland fish wrapped with a beancurd 'skin,' took on flavor as one dipped the small bundles of fish into an accompanying mound of peppered salt."

460. Bhumiratana, Amara. 1984. ASEAN Protein Project, 1974-1984. Bangkok, Thailand: ASEAN Subcommittee on Protein. 111 p. Illust. 29 cm. [Eng]

• **Summary:** The ASEAN nations are Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Contents: 1. Malnutrition problems in ASEAN countries (incl. Soy-based products as a solution to malnutrition). 2. Administration of the ASEAN Protein Project. 3. Objectives. 4. Methodology. 5. Results of ASEAN member country research: Soy products developed (high-protein, low-cost foods for infants and children, soy milk and soy milk powder, full-fat soy flour), fermentation products developed (tempe: from

shophouse business to modern factory, oncom chips and flour, soy sauce, the ASEAN culture collection), other related projects, exchange of information (incl. details on the 15 ASEAN protein workshops held between July 1975 and Oct. 1984, and the publications resulting from each). 6. New ASEAN projects. 7. Conclusion.

This book, which contains many color photos and focuses on soybeans, describes one of the most successful ASEAN programs, emphasizing cooperation among the ASEAN nations in an attempt to solve the problem of malnutrition common to the region. The project, conceived in Aug. 1971, receives major funding and technical assistance from the Australian government. In May 1978 the ASEAN Full-Fat Soy Flour (FFSF) Factory in Chiang Rai, Thailand, was completely installed and has been producing continuously since then. It has a capacity of 100 tons/month. Numerous photos of the facility are shown. A pilot plant has produced up to 50 tons/month of Kaset Infant Food, which has been well accepted in 573 health centers throughout Thailand and is being evaluated in other ASEAN countries. A photo of the package (plastic bag) is shown. Address: Bangkok, Thailand.

461. Brennan, Jennifer. 1984. *The cuisines of Asia: nine great oriental cuisines by technique*. New York, NY: St. Martin's Press. ix + 542 p. Illust. (line drawings). Index. 24 cm.

• **Summary:** The "Nine great Oriental cuisines" are those of "China, India, Indonesia, Japan, Korea, Malaysia, The Philippines, Thailand, Vietnam" (as stated on the book's cover). The book contains many recipes, yet it is largely organized into chapters by cooking techniques: barbecuing, steaming, stir-frying / using a wok, deep-frying, etc.

The chapter on "Japan" discusses soybeans, miso, tofu, and shoyu on pages 44-45. Soyfoods are said to be the 2nd largest source of protein in the Japanese diet.

The section on "Soybeans" (p. 97-104) includes a discussion of the names of various soyfoods in different Asian languages and countries. For example: "The basic bean curd is called *tau-fu* in Cantonese, *tau-hu* in Hokkien, and *tofu* in Japanese." Or consider this (p. 99): "During the basic process of making bean curd, at the stage where the bean and water mixture is boiled, a skin or residue forms on the top. This skin [yuba] is skimmed off and dried. It is commercially available in sheets... and in the form of sticks that bear the picturesque name of 'second bamboo' [dried yuba sticks] in Chinese, meaning that they are the second residue from the curd."

There follows a 3-page table titled "Soybean products" (p. 101-03) which has four columns: Description, Chinese name [Cantonese], Japanese name, comments.

Note: Before proceeding, we believe that the design of this table is fundamentally flawed. (1) Why are the names of the basic soyfoods not given in the other languages with

which this book is concerned, including Mandarin Chinese, Korean, Indonesian, Vietnamese, Filipino, etc.? (3) Why is no English name given for each basic soyfood product? Sometimes the description is the English name, yet that name is rarely the name a person would use if they were selling the product in an English-speaking country. (3) Why are so many common "soybean products" omitted from this table, such as the various basic other types of Japanese miso and of Japanese shoyu (besides koikuchi shoyu), fermented black soybeans (douchi, dow see), soymilk, soy sprouts, roasted soy flour, whole soy flour, soybean oil, textured vegetable protein, etc. These problems are easily solved with alternate table designs. For example, have one table for each language, with the name of each soyfood product given first in English and then in the language of that country. Put the description and comments in a glossary to avoid repetition. Or, have a glossary entry for each soyfood, with the English name, description, comments.

The table is divided into four basic types of soybean products. After each, we will give the Cantonese name and then the Japanese name, and we will indicate disagreements using [sic]. NL = Not listed.

(1) Bean curd: Tau fu fu [sic] = kinugoshi tofu. Tau fu = momen tofu. NL = yaki tofu [sic, yaki-dofu]. NL = koya tofu or kori tofu [sic, koya-dofu or kori-dofu]. Tau fu pok = abura age. Fu chu = yuba [sic, fu chu is dried yuba sticks. Yuba in Mandarin is doufu pi]. fu joke [sic, fu jook] (bean curd sticks) = NL. Tim joke [sic, tiem jook] (sweet bean curd sticks) = NL. tau fu kon [Mandarin: doufu gan; pressed tofu].

(2) Soy sauce: Light = chan ch'an or sang chu = usu kuchi shoyu [sic, not the same]. Dark, medium = see yu chan yan = shoyu [sic, see yu is soy nugget sauce, not made in Japan. Japanese shoyu is not traditionally made in China]. Dark, heavy, sweet = chu yan = NL.

(3) Fermented bean pastes and cheeses. Black bean paste = dau see tau ch'ih = NL. Sweet, white bean paste = NL = shiro miso. White soy cheese [fermented tofu, should be classified under tofu] = pai doufu-ru or foo yee or foo yu = NL. Red soybean paste = NL = aka miso. Red soy cheese or spiced red bean curd = hung doufu-ru or nom yee or nam yu.

(3) Miscellaneous soybean productions. Soy jam = yun shi jeung = NL. Whole fermented soybeans = NL = nato [sic, natto]. Red bean sauce = saang see jeung = NL. Soybeans and malted rice = NL = moromi miso. Hoisin sauce = hoisin = NL.

In the "Basic recipes" section is a recipe for Indonesian dark sweet soy sauce (*ketjap manis*).

The Glossary (p. 499-515) contains the following soy-related entries: "Bean Curd (*tofu*, Japanese; *tao foo*, Chinese; *tahu*, Indonesian and Thai; *tokwa*, Philippines): A curdled, soft, cheeselike preparation made from soybean milk. Used as a source of protein in Asian cooking. Available loose or in packages."

Bean paste, red sweet [from azuki beans]. "Substitute

Chinese sweet red bean paste, p. 132.”

Bean paste, yellow (Chinese).

“Beans, black salted fermented. (Called dow see in Chinese) These are very salty soybeans, sold in cans in Chinese markets. Used with garlic as a flavoring for fish and pork dishes. substitute: Soybeans, cooked until soft and seasoned with plenty of soy sauce.”

Bean sprouts: Usually refers to mung bean sprouts, “although alfalfa and soybean sprouts are also used.”

Hoisin sauce: Soybeans are a major ingredient, along with garlic, chili peppers, and various other spices and ingredients.

Miso. Oyster sauce: “A Chinese sauce, made from oysters cooked in soy sauce and brine.” Used as a seasoning with cooked foods and as a table sauce. See recipe p. 146.

Red bean sauce: “A strong table sauce made from mashed soybeans.” Available in cans from Chinese stores.

Soy sauce

Also contains entries for: Kombu. Monosodium glutamate (MSG; “I do not use it nor do I recommend its use”). Mung beans.

The index contains 28 entries for soybean, 22 for soy sauce, 14 for miso, 6 for bean paste, oyster sauce, teriyaki, 4 for bean curd—deep fried, hoisin sauce, vegetarian dishes, 2 for ketjap, and 1 each for beans—black salted fermented, bean curd—fermented, jam—soy, jang (see miso), milk—soybean, ragi, shoyu (see soy sauce), soybean oil, sukiyaki, tahu, tau-fu or tau-hu (see bean curd), tempe [tempeh], textured vegetable protein (TVP), tofu (see bean curd), tou shih [fermented black soybeans],

About the author (from the rear cover): “Jennifer Brennan grew up in Pakistan and India and has spent many years in Southeast Asia. She is the author of *The Original Thai Cookbook*.” She is “Winner of the IACP [International Association of Culinary Professionals] Award for the Best Literary Food Writing.”

462. Hapgood, Fred. 1984. Log of soyfoods research in Japan, Sri Lanka, and China, Oct/Nov., for *National Geographic* magazine (Log—unpublished). 85 p. Unpublished log.

• **Summary:** Fred was researching an article about the soybean for *National Geographic* magazine. This handwritten log is filed in Soyinfo Center file cabinets by country keyword. Thus, the portion concerning Sri Lanka (p. 13-43, 57-64) is filed with the documents concerning South Asia (AsSo) in 1984. The first person he met in Sri Lanka was Mr. S. Pathiravitana, editor, *Soyanews*.

463. Kagaku Gijutsu-cho, Shigen Chosa-kai (Science & Technology Bureau). 1984. *Shitei shokuhin seibun hyô* [Standard tables of food composition in Japan. 4th ed.]. Tokyo. 370 p. Introduction by R. Kagawa, Joshi Eiyo Daigaku. 28 cm. [Jap; Eng]

• **Summary:** Pages 76-80 gives a nutritional analysis of the following Japanese soyfoods: Soybeans: whole domestic (dry, or boiled), USA whole dry, Chinese whole dry. Green immature: raw, or boiled. Soybean sprouts: raw, or boiled. Defatted soybeans: whole, or dehulled. Kinako (roasted, ground soybeans). Budô-mame. Tofu: regular (momen), silken (kinugoshi), soft, packed, Okinawa tofu, grilled (yaki-dofu), nama-agé (deep-fried tofu cutlets), abura-agé (deep-fried tofu pouches), ganmodoki, kori-dofu, Tofu chikuwa (steamed, or roasted). Natto: Itohiki natto, goto-natto, tera-natto (fermented black soybeans). Miso: Rice koji miso (ama miso, light yellow miso, dark yellow miso), barley koji miso, soybean koji miso, dried miso, kinzanji miso, hishio miso. Okara. Soymilk: regular, reconstituted, soft drinks. Yuba: Fresh, or dried.

Page 254 gives the amino acid composition of soybeans, tofu, dried frozen tofu, yuba, okara, natto, and 3 types of miso. Address: Japan.

464. So, Yan-kit. 1984. *Yan-kit's classic Chinese cookbook*. London: Dorling Kindersley Ltd., London. 240 p. Illust. (color photos). Index. 24 cm. [1 ref]

• **Summary:** This is a remarkable Chinese cookbook. Although the text of this book was copyrighted in 1984, the photographs, layout and design have been updated to 1993. For a summary, see the 1993 edition. Address: England.

465. Soybeans and soybean products. Quick & easy nutritious Japanese cooking no. 1. 1984. Chiyoda-ku, Tokyo: Joie, Inc. 116 p. Illust. No index. 27 cm.

• **Summary:** A beautiful cookbook, in which every recipe is illustrated with a color photo. Contents: Preparation tips. Metric tables. Soybeans with meat. Soybeans with eggs. Soybeans with fish. Soybeans with vegetables. Soybeans with seaweed. Yuba. Unohana [okara]. Natto. Koya-dofu. Ganmodoki. Aburage. Atsuage. Grilled tofu. Tofu salads. Deep-fried tofu. Tofu with oysters or kelp. Tofu with shrimps. Tofu with fish. Tofu with meat. Tofu with vegetables. Tofu soups. Tofu. Preparatory techniques for tofu. Information: Glossary, basic recipes.

Note: The publisher is also listed as Japan Publications, Inc. Address: Joie, 1-8-3 Hirakawa-cho, Chiyoda-ku, Tokyo 102, Japan.

466. Xinhua Publishing House. comp. and ed. 1984. *The China directory of industry and commerce and economic annual*. 2 vols. 2nd ed. Translated by Xinhua Publishing House. Boston, Massachusetts: Science Books International. Distributed by Van Nostrand Reinhold Co. 1956 p. See p. 12 = p. D-3, col. 3.7. 29 cm.

• **Summary:** Entry #11 (p. 12) is Guangzhou General State Agro-Industrial Commercial Corporation. Address: Liuhuaxincun, Guangzhou, Guangdong. The name and address are also written in Chinese characters. The name of

the “Leading member” and the telephone number are also given.

Under “Business scope and main products” we read: “This corporation serves the city and undertakes export trade as a diversifying complex.”

“Foodstuff and light industrial goods are the main industrial products: rice wine, tea, condensed milk, extract of malt and milk, dried bean milk cream in tight rolls [dried yuba sticks], pancakes, biscuits, pastry...” Address: Beijing.

467. Boyer, Robert A. 1985. *Reminiscences: Automotive design—Oral history project*. Dearborn, Michigan: Henry Ford Museum and Greenfield Village. 130 p. Accession #1673.

• **Summary:** This is the transcript of an interviews conducted by Dave Crippen of the Henry Ford Museum on 7 Feb. 1985 at Mr. Boyer’s home in Dunedin, Florida. It covers all aspects of Boyer’s work with soybeans at the Ford Motor Co., including: Growing up in Royal Oak, Michigan; his father worked in the accounting department of the Ford Motor Co. at Highland Park, Michigan (p. 1). Boyer’s first meeting with Frank Campsall (p. 2). Growing up at the Wayside Inn (the oldest hotel in America, in South Sudbury, Massachusetts, p. 1-6). Attending high school in Framingham, Massachusetts (p. 6). First meeting with Henry Ford when the two ice skated together on the mill pond behind the Wayside Inn (p. 7). Moving to Dearborn in Sept. 1927 to attend Ford’s Trade School (p. 7-11). Early work at the chemical plant (quarter-size model of Iron Mountain plant) in Greenfield Village (p. 12-13). Ford’s trip to Germany [Peace Ship to Europe, in 1915 during World War I?] crystallized a lot of his thinking. The Great Depression and the origins of his chemurgic thinking. In 1934 the first National Chemurgic Conference was held at Dearborn Inn; Boyer was in charge of the program. Mr. Irene DuPont attended and Mr. Ford spent a lot of time with him. Before that, the DuPonts and the big banks did not trust Ford. (p. 14). Opening of Greenfield Village in late 1929 on the 50th anniversary of Edison’s first successful light bulb (p. 15). Chemical experiments on truckloads of farm crops using a retort; Frank Calvert (p. 16-19).

Experiments starting in about 1933 using hexane as a solvent to extract the oil from soybeans; the Ford Extractor (p. 20-23). Boyer’s group wanted to get pure protein from soybeans. So “in the lab we developed our own process for extracting the oil... We used hexane solvent, like dry cleaning. We’d flake the beans and run them through a pipe that was full of hexane on an angle with a screw in it.” Hexane solvent is “distilled out of petroleum. It has a very narrow boiling point—66° centigrade. The Ford extractor... got quite a lot of attention. We built it across the street from the chemical plant. It was about 150 feet away. Mounted it all by itself because everybody was afraid of fire.” A roof was built over it but no walls. It was probably built in about

1933.

In 1933 at the World’s Fair [sic, the Ford Exposition of Progress] in New York City, Boyer’s group had a glass model (on a table) of this extractor that used hexane solvent.

Note: Ford boycotted Chicago’s A Century of Progress Exposition which opened in 1933, in part to call attention to the company’s 30th anniversary; he held his own “industrial fair,” first in Detroit and then in New York, in late 1933. *Business Week* described it as “the greatest industrial show ever held.” Some 2.3 million people attended the two-week show in New York.

A working model of the Ford extractor, using hexane solvent, was at the Chicago World’s Fair, starting in mid-1934, in the Ford Industrial Barn. “They would never let you do that today. Too dangerous.”

Research on purified soy protein and soy plastics with formaldehyde; Bakelite (p. 24-25). Use of soy oil for foundry core binders for casting the Ford V-8 engine block; thus, the soy experiments are now commercialized. Building a 50 ton/day extractor (p. 26-27). Spinning soy protein fiber like rayon, based on spinning milk protein in Italy. Using the fibers to make wrinkle resistant synthetic wool, a suit of clothes for Henry Ford and others, overcoats, neckties, felt hats. “We also found that these fibers blended in very well with rabbit fur for making men’s felt hats. So the Hat Corporation of America took all the fiber we could make. It wasn’t very much and they would blend it in with rabbit fur. And they actually had them [the men’s felt hats] on the market.” Rabbit fur is very expensive (p. 29-36). Ford’s suit of clothes contained 65% wool and 35% soy fiber. Boyer leaves Ford Motor Co. in 1943. Problem with fiber was tensile strength, especially wet strength. Ford’s interest in this fiber work, and his fitness at age 75 (p. 37-38). Ford “was not a true vegetarian but he was pretty close” (p. 38). Edsel Ruddiman’s work with foods (p. 39-47). Boyer and Ruddiman attend American Soybean Assoc. soybean conference in Washington, DC [in Sept. 1932] where they saw “leather-like products that the Chinese make” [yuba]. Boyer tried unsuccessfully to use the idea to make “synthetic leather.” USDA’s experimental farm in Holgate, Ohio, where many soybeans sent back by W.J. Morse were tested (p. 40-42). Work with soybean milk (p. 43-46). The executive dining room in the Engineering Laboratory. Henry Ford invited Boyer to lunch there about 6 times (p. 45). Development of soy ice cream; lipoxidase enzyme inactivation (p. 45-46).

Visits to Battle Creek, Michigan and Dr. John Harvey Kellogg (p. 47). Boyer’s work was with industrial products; the plastic car and structural plastics with hemp, flax, and phenol formaldehyde (soya protein Bakelite resin) (p. 47-64, 70). Making trunk lids using a hydraulic press (p. 50). Ford’s famous axe demonstration on a trunk lid (p. 50-52). Lowell Overly and Joe Stewart (p. 53-56, 61, 78-79). Boyer drives the plastic car home (p. 63). Ford’s aim with the plastic car:

to provide industrial markets for farmers (p. 65). World War II stops plastic car development (p. 65-66). Contract to build an airplane wing of plastic (p. 66-70). The plastic lid and car contain little or no soy (p. 70). Fiberglass and the Chevrolet Corvette (p. 71). Plexiglas and the B-24 bomber made at Willow Run (p. 72). Edsel Ford's death of stomach cancer in the spring of 1943 and its effect on his father, Henry (p. 73-74). Ending work with soy fiber (p. 74).

Boyer leaves Ford in 1943 and goes to work for Drackett Co. in Cincinnati, Ohio. Wife needs to leave Detroit. After 1943 Boyer's career really takes off. Dr. Gangloff (p. 75-77). Use of soy fiber by Drackett in felt hats. "We sold them a lot of fiber and we decided to build a bigger plant." Building a protein plant and a fiber plant in Cincinnati big enough to supply the hat company's demands and larger "than we needed just to supply our fiber operation." They also had a big operation in Cincinnati for high-impact (not structural) plastic (p. 78-80). Drackett's marketing people knew how to market Windex and Drano "but they had no feeling for the soybean operation. So when Mr. Drackett died, they sold the whole soybean plant to Archer-Daniels-Midland (ADM, p. 81-83). Before Mr. Drackett died, Boyer's division had developed commercial soy products, and Drackett was making money on the plastic (phenol formaldehyde plus hemp) and the fiber (p. 81). Use of soy protein as a paper coating (p. 83). ADM finally closes the old Drackett protein plant and sells it to Central Soya, which used the million bushel elevator capacity for storage (p. 83-84).

Shortly after Mr. Drackett died, Boyer left Drackett to work on his edible soy fiber, where he owned patents. "If we can make a fiber from soy protein that resembles the outside of a sheep, why not make a fiber that will resemble the inside (p. 84-86). Idea of building an edible soy protein plant is in Cincinnati, with Mr. Drackett's approval (p. 87). Boyer tries to find companies to license rights to his landmark patent: Virginia Carolina Chemical (Taftville, Connecticut, p. 88); Swift & Co. (p. 89-92); Unilever, which was interested in peanut protein in Africa and at Port Sunlight near Liverpool (p. 92-94, 112-13); General Foods and Nabisco (Fairmont, New Jersey research lab) (p. 94, 99). Unilever and Swift pay licensing fees of \$20,000 a year plus consulting fees. General Mills and Ralston Purina (p. 94-95). Why Swift dropped its interest (p. 95-96). General Mills and Bacos (p. 96). Patent expires in 1971 after 17 years (p. 96). Worthington Foods (p. 97). Ralston Purina was getting into protein. In about 1956-58 they "had bought Procter & Gamble's protein plant in Louisville [Kentucky], which was making industrial protein for paper coating" (p. 98). Worthington Foods was too small to make their own soy protein fibers, so Ralston Purina made it for them (p. 78-80). Ralston Purina's great success with edible soy protein and their small conflict: pet food vs. human food (p. 100-01). From 1961 to 1971 Boyer was receiving licensing fees / patent royalties from Ralston Purina, Worthington, and General Mills (p. 102). General

Mills and Bacos (p. 103-04). Ralston Purina's patent lawsuit against Far-Mar-Co. Ralston won \$8 million. Boyer testified as an expert witness (p. 104-05).

Boyer remarries and retires in 1971 (p. 102, 105, 107). Subsequent work with Miles and Worthington; the Morningstar Farms line (p. 105-08). Companies now spinning soy protein fiber (two in the Netherlands, one in Japan, one in Australia). Ford Foundation was not interested in his work with soy protein for Third World nations (p. 110). Central Soya bought the ADM plant that was located in Chicago (p. 113-14). Kellogg's Corn Soya breakfast cereal (p. 114-15). Worthington's Soyloin Steaks; all early Kellogg and Worthington vegetarian products based on wheat gluten (p. 119). When Worthington bought Battle Creek they got their lady research director; she worked at Worthington until she was quite elderly. Boyer visited her in her lab at Battle Creek several times (p. 119-20. Note: Josephine F. Williams was in charge of the lab and product development at Battle Creek, where she worked closely with Dr. John H. Kellogg. She kept similar positions at Worthington Foods, according to Ron McDermott). Henry Ford as a soybean pioneer and visionary. The soybean is now America's No. 2 cash crop and also our second largest earner of foreign exchange. "That really started from Ford. When we first started in 1931, hardly anybody ever heard of the soybean, and Henry Ford's penchant for publicity publicized the soybean... He certainly made it popular and made people become aware of it. Today it's darned important." He should be remembered as the "Father of the Soybean." "I always thought it would be nice if they would rebuild the [Soybean] laboratory [in Greenfield Village] or restore it like it was when we were doing the soybean work and give it the real credit that it deserves..." (p. 120). After Henry Ford died in 1947 his family wanted no part of any of his pet projects. They completely eradicated the old Ford company (p. 121). Henry Ford was deeply interested in the welfare of American farmers. His tractors and Model T were of great use to them (p. 121). Origins of Ford's interest in chemurgy; William Hale and Dow Chemical Co. in Midland, Michigan; the first three chemurgic conferences in Dearborn, Michigan, in May 1935, 1936, and 1937 (p. 122-27). Ford and Ruddiman establish a complete canning line for good-tasting green soybeans on the outskirts of the Ford estate. The equipment was quite expensive. When World War II threatened, Ford gave it to Michigan State University to teach canning to students. (p. 129-30). Boyer's personal impressions of Henry Ford (p. 128-30). Address: 632 Edgewater Dr. #731, Dunedin, Florida 33528.

468. Byrne, Maureen. 1985. The future for soyfoods. The first European Soyfoods Workshop was held in Amsterdam by the American Soybean Association, and papers covered subjects from marketing to microbiological standards. *Food Manufacture (London)* 60(3):49, 51, 53. March.

• **Summary:** This workshop was held on 27-28 Sept. 1984 at the Krasnapolski Hotel, Amsterdam, the Netherlands—organized by the American Soybean Association. Gives a brief summary of each paper presented.

Contains an interesting full-page table (p. 51) in which Oriental soyfoods are classified into two types: Non-fermented and fermented. For each non-fermented food is given the local names, description, and uses. The non-fermented soyfoods are: Fresh green soybeans, soybean sprouts (huang tou ya, Chinese), soynuts (hueh huang tou, Chinese; iri-mame, Japanese), soymilk (tou chiang or tounai, Chinese; tonyu, Japanese; kongkuk, Korean), soy flour (huang tou fen, Chinese), soy protein-lipid film (yuba, tou-fu-pi), soybean curd (tofu).

For each fermented soyfood is given the local names, organisms used, description, and uses.

The fermented soyfoods are: Soy sauce, miso, tempeh, natto, fermented tofu, and fermented black soybeans.

Soy sauce includes chiang-yu from China, shoyu from Japan, ketjap from Indonesia, kanjang from Korea, toyo and see-ieu from Southeast Asia.

Fermented black soybeans include tau-shih from China, tao-si from the Philippines, tau-cheo from Malaysia, tauco from Indonesia, and Hamanatto from Japan.

469. Jacobson, Max. 1985. Discovering Good Shine. *Los Angeles Times*. June 6. p. H37.

• **Summary:** This is a restaurant review of Good Shine Kitchen in Monterey Park, Los Angeles County. Long life egg roll (\$3.60) “is a long ground pork roll wrapped in dried tofu skin” [yuba].

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term “dried tofu skin” to refer to yuba.

470. Kushi, Aveline; Jack, Alex. 1985. Aveline Kushi’s complete guide to macrobiotic cooking: For health, harmony, and peace. New York, NY: Warner Books. xvii + 414 p. June. Illust. Index. 23 cm. [36 ref]

• **Summary:** Index entries include: Miso 61, Tofu 50, Tamari 19, Tempeh 17, Whole dry soybeans 6, Natto 3, Soymilk 3, Yuba 1. This book calls ganmodoki “Tofu Croquettes” and further states that “*Gan* means ‘crane’ and *modoki* means ‘looks like.’” Among the 31 chapters are ones titled Beans (incl. basic black soybeans, and brown rice with black soybeans); Tofu, Tempeh, and Natto (including yuba); Sea Vegetables; Condiments and Garnishes (incl. miso), and Fish and Seafood.

Under “Black Soybeans” (p. 257) we read: “These nice shiny beans are also called Japanese black beans. They have a strong, delicious taste. Their juice is said to make the voice clear and beautiful. Throughout Japan, mothers prepare their children for music tests and singing lessons with this dish. Black soybeans are also used medicinally to

help discharge animal toxins from the body.” Note: This is the earliest macrobiotic cookbook seen that uses the term “Black soybeans” in a recipe title. All previous macrobiotic cookbooks called them “Black beans.”

Contains recipes for homemade tofu, tempeh, and natto. Address: Brookline, Massachusetts.

471. Kawakami, Kozo; Kimura, Eiichi. 1985. Daizu ryōri kotoba no rekishi. Tōfu wa mukashi “tōfu” to kaita [History of soyfoods terminology in Japan. “Tofu” was previously written with different characters]. *Daizu Geppo (Soybean Monthly News)*. July. p. 34-39. [8 ref. Jap]

• **Summary:** A full-page table (p. 39) lists all of the major Japanese soyfoods and gives a citation for the earliest Japanese-language document seen by the authors in which each of their names first appears. Address: 1. Nōgaku Hakase, Shusai, Ryori Genten Kenkyukai; 2. Daizu Geppo Staff.

472. Jacobi, Dana. 1985. Tofu: Its history, nutritional virtues, how to buy it and how to cook it. *Wok Talk (Great Neck, New York)* 9(4):4-8. July/Aug. [1 ref]

• **Summary:** Contains 4 recipes (including one for Lemon Tofu Cheesecake) and a description of how to make tofu at home. A table describes 13 brands of tofu purchased by Dana at Kam Man, a big retail store in New York; the manufacturers are Morinaga (Japan), Mandalay, Monsoon, and Orifood (New York), Tomsun, and Nasoya (Massachusetts), Bud (Maryland), The Bridge (Connecticut), and Kamé (Taiwan). Photos show: Tofu being cut with a Chinese cleaver on a kitchen cutting board. Many varieties of tofu and yuba sold in New York City.

Talk with Dana Jacobi. 2000. May 3. This was the first article Dana wrote about soy. This newsletter was published at 15 Barstow Rd., Great Neck, New York. Address: New York.

473. *Sunday Times (Singapore)*. 1985. Fowl play with the soya bean. Sept. 15.

• **Summary:** William Soh runs Kiat Lim vegetarian stall at #01-563 Blk 91, Whampoa Hawker Centre, Whampoa Drive, Singapore. He makes meatless entrees, such as goose, fish, chicken, and five spice roll from *tau kee* (bean curd skin [yuba]), which is molded and stuffed. He also uses gluten flour to make vegetarian pork. A photo shows Soh with his meatless meats.

474. Culioli, J. 1985. Les procédés de texturation des matières protéiques végétales: Aspects technologiques [The processes of texturization of vegetable protein materials: Technological aspects]. In: B. Godon, ed. 1985. Protéines Végétales [Vegetable Proteins]. Paris: Technique et Documentation—Lavoisier : APRIA. xxvi + 629 p. See p. 489-522. [99 ref. Fre]

• **Summary:** Contents: Introduction. Traditional foods based on textured soy protein: Tofu, dried-frozen tofu, yuba, sufu (fermented tofu), tempeh. The principles of protein texturization. Spinning: Historical, processes, aptitude of proteins for spinning, the texture and structure of spun proteins, the techniques of spinning derived from the Boyer process. Cooking—extrusion. Other processes for texturization of protein. Conclusion. Address: Institut National de la Recherche Agronomique, Station de Recherches sur la Viande, Theix 63110 Beaumont, France.

475. Findlater, Evelyn. 1985. Making your own home proteins: Tofu, tempeh, soft cheeses, yoghurt and sprouted seeds. London: Century Publishing. 151 p. Illust. Index. 20 cm.

• **Summary:** Contents: The soya dairy (The soya bean, products of the soya bean {soya flour, shoyu and tamari, miso, cooking with miso}, soya milk, how to make it at home, recipes, tofu, silken tofu, yuba, soya milk yoghurt, soya milk yoghurt cheese, tempeh). Gluten (wheat protein). Goat's milk dairy produce. Sprouting beans, grains and seeds (beans: aduki, alphantoco, chick peas, flageolet, lentils, mung beans, soya beans).

A portrait photo of the author appears on the front cover; a brief biography is found on the first page and in the introduction. Address: England.

476. Hsiung, Deh-Ta. 1985. Chinese vegetarian cooking. London: The Apple Press; Secaucus, New Jersey: Chartwell Books. 128 p. Illust. (color). 29 cm.

• **Summary:** Every page of this excellent book is in full color on glossy paper, loaded with color photos. Contains over 70 recipes. Contents: Introduction: History of Chinese vegetarian cooking, essential tools and utensils, basic techniques and cooking methods, regional cooking styles (northern, eastern, western, and southern groups), special ingredients and seasonings (with a photo of each), how to plan your menu. Cold dishes. Soups. Quick stir-fried dishes. Braised & steamed dishes. Rice, noodles & sweets.

History (p. 8): “Vegetarian cooking has a long history in China,” and Chinese have traditionally been highly aware of it because of their deep interest in the connection “between food and health, whether physical or spiritual.” Chinese Buddhists are vegetarians because they abhor the killing of all living creatures.

“Until quite recently, many people believed that vegetarian cooking in China originated in the Buddhist temples, and that it was first introduced into China with Buddhism from India during the reign of the Han emperor Ming (AD 58-75).” However scholars in China have now found that the earliest known mention of vegetarianism on record was during the Zhou Dynasty (beginning ca 1028 B.C.). Other “references also exist in ancient texts all pre-dating the introduction of Buddhism into China by several

hundred years.”

“It is generally agreed that the development of vegetarianism in China owed more to the introduction of many foreign fruits and vegetables during the Han Dynasty (206 BC–AD 222) than to Buddhism. Many Chinese vegetarians were influenced by the indigenous philosophy of Taoism, which developed the hygienic and nutritional science of food closely related to the basic yin-yang principles. The appearance of bean curd (tofu)—also during the Han dynasty—and many other soy bean products, together with the discovery of making gluten from dough, helped to enrich and further diversify the vegetarian diet.”

It is interesting and important to note “that despite their continual introduction, milk and dairy products are, to date, not prominent in Chinese cuisine. Therefore, unlike their counterparts in the West, Chinese vegetarians will not use butter, cheese, or milk in their cooking, and a true Buddhist will eat neither eggs nor fish.” However this book uses eggs (p. 33, 40, 64, 78 etc.).

“One of the best known poets of the Southern Song period, Lu You (1125-1210; W.-G. Lu Yu) was a noted vegetarian. He lived to the ripe old age of 86.

The section on ingredients (p. 13-14) includes concise descriptions of: Bean curd (tofu). Gluten. Red bean paste (also called “sweetened red bean paste,” p. 124) [azuki, sweet]. Salted black beans [fermented black soybeans]. Sesame seed oil. Soy sauce (“Use Light Soy Sauce which has more flavour and does not discolour the food as much as the Dark or Rich Soy Sauce”). Sweet bean paste or Hoi Sin sauce (Made from soy bean sauce...). Yellow bean sauce (“This thick sauce is made from crushed yellow [soy] beans, flour and salt”). Photos here show (p. 15, 19): (1) Dried bean curd skins [yuba]. (2) Six squares of tofu on a rectangular wooden cutting board, and many cubes of deep-fried tofu on a sieve [for deep frying]. A can of “Black beans with ginger” under the label Yang Jiang Preserved Beans with Ginger.” With very few exceptions, the Chinese drink neither water nor tea during the meal; they drink soup instead. A surprisingly large percentage of the recipes in this book call for “bean curd (tofu).”

Soy related recipes: Five spice bean curd (tofu) (with “4 cakes bean curd,” p. 34). Hot and sour soup (p. 42). Spinach and bean curd (tofu) soup (p. 43). Deep fried bean curd (tofu) and wood (tree) ear soup (with 50 gm / 2 oz deep-fried bean curd or 1 cake fresh bean curd (tofu), p. 48-49). Dried bean curd (tofu) skin and vermicelli soup (with 15 gm / ½ oz dried bean curd skin [yuba], p. 50-51). Bean curd (tofu) with mushrooms (quick stir fried, p. 68). Stir-fried spinach and bean curd (tofu) (p. 70). Vegetarian chop suey (with tofu, p. 81). Chinese cabbage casserole (with deep-fried or fresh tofu, p. 82, 84). “Buddha’s delight—Eight treasures of Chinese vegetables (with 15 gm / ½ oz dried bean curd (tofu) skin sticks [dried yuba sticks], p. 92-93). Fried gluten (Mianjin, homemade, starting with 2 lb flour, p. 95). Kao fu—Sewed

gluten in sweet bean sauce (with 1 tablespoon sweet bean paste or hoi sin sauce, p. 96). Casserole of vegetables (with 1 cake bean curd (tofu), p. 97). Fu-yung bean curd (tofu) (with 1 cake bean curd (tofu), 4 egg whites, and 50 ml / 2 fl oz milk, p. 98-99; Fu yang usually means omelette, but literally means scrambled eggs). Sichuan bean curd (tofu) (with 3 cakes bean curd and 1 teaspoon salted black beans, p. 100-01). San shian—"The tree delicacies" (with 275 gm / 10 oz fried gluten or deep-fried bean curd, p. 104-05). Braised "three precious jewels" (with 2 cakes bean curd (tofu), p. 106-07). Vegetarian "lion's head" casserole (with 4 cakes bean curd and 100 gm / 4 oz fried gluten, p. 108-09). Shanghai vegetable casserole (with 2 cakes bean curd (tofu) or 50 gm / 2 oz deep-fried bean curd, p. 110-11. "For some reason, the best vegetarian restaurants in China are found in Shanghai...").

"Rice and noodles provide the bulk of the Chinese meal. The best plain boiled rice is obtained by using only the long grain [white] rice known as patna." Photos show that many dishes are served with a small bowl of white rice. Chow mein—Fried noodles (with 25 gm / 1 oz dried bean curd skin sticks, p. 119). Vegetarian spring rolls (handmade using 1 pack of 20 frozen spring roll skins, p. 122-23).

Note: Many, if not most, recipes call for soy sauce—either light, dark, or both.

About the author (inside rear dust jacket): "Deh-ta Hsiung is a native Chinese who gained his knowledge of Chinese cooking directly from some of the great Chinese chefs. He has made several television and radio appearances in connection with his expertise on Chinese foods and now writes widely on the subject and teaches at Kenneth Lo's Chinese Cookery School [in London]."

From Gareth Jones' Food blog (posted 9 Feb. 2011) titled "'Kung Hay Fat Choy' Deh-Ta Hsiung." "Cooking Chinese food at home—complete with wok, steamer and all—took off in the early 1980s. Deh-Ta was at the spearhead of the movement, along with Ken Lo and Chef But from the Ken Lo Cook School. His Chinese Regional Cooking was published in 1979 and was out of print before it got to take off." "Eating Chinese home cooking, for me, is far superior to most restaurant food—dim-sum excluded."

477. Lo, Kenneth H.C. 1985. New Chinese cooking school. Tucson, Arizona: HP Books. 288 p. Illust. Index. 28 cm.

• **Summary:** On the cover, below the title we read: "An illustrated course in contemporary Chinese cuisine." A gorgeous book, packed with superb color photos on glossy paper. One chapter (p. 98-115), titled "Bean curd and eggs," contains many tofu recipes. Other tofu recipes are scattered throughout the book.

The section titled "Soy beans and bean-based products" (p. 26) gives brief definitions of: Bean curd [tofu], bean curd cheese [fermented tofu], bean curd skin [yuba], salted black beans [fermented black soybeans] ("Cooked, salted

and fermented whole soy beans. Mash them with other ingredients or mix into dishes for color" and rich, earthy, piquant flavor), Sichuan chili paste (yellow soy bean paste mixed with dried chilies and their seeds, sugar, and garlic), soy bean paste (crushed soy beans mixed with sugar, salt, and chili), sweet bean paste (made from cooked, puréed, sweetened red beans [azuki]), and yellow bean paste (made of fermented, salted puréed yellow [soy] beans with salt, flour and water). Also contains recipes for: Bean-curd cheese [fermented tofu], p. 88, 89. Bean curd skin [yuba] (p. 200, with color photo of "dried bean curd skin" on p. 18).

Recipes and photos for "salted black beans" [fermented black soybeans] or black bean sauce are: Steamed scallops with black bean sauce (p. 132, 138). Quick-fried crab in black bean sauce (p. 144). Cantonese steamed spareribs with black beans (p. 186, 188). Sliced beef in black bean and chili sauce (p. 201). Ho-fen noodles with beef in black bean sauce (p. 270, 273). Soy sauce is used in recipes throughout the book.

A color photo on the rear dust jacket cover shows Kenneth Lo. His biography, on the inside rear dust jacket, states that he is acknowledged the world over as an authority on Chinese food, and is a graduate of both Peking and Cambridge universities. He is also the founder of one of London's best-known Chinese restaurants.

478. Richie, Donald. 1985. A taste of Japan: food fact and fable. What the people eat. Customs and etiquette. Tokyo, New York, San Francisco: Kodansha International. 112 p. Illust. (some color photos). Index. 27 cm.

• **Summary:** This book contains a nice chapter titled "Tofu" (p. 34-41) in which the different types are described including *momengoshi-dofu* ("cotton" tofu) and *kinugoshi-dofu* ("silk" tofu). It also discusses okara, noting: "Now mainly used as livestock feed, it once also nourished one of Japan's greatest scholars. Arai Hakuseki, who lived during the Edo period (1615-1868), proudly related that in his impoverished student days he lived almost entirely on *okara* and that in gratitude he later, rich and famous, gave large sums of money to his charitable tofu maker."

On pages 38-39 are color photos of: "(1) Atsu-age. (2) Koya-dofu. (3) Ganmodoki. (4) Unohana or okara. In Kyoto, this humble food is rounded into balls and sold. (5) *Yudofu* course in a Kyoto restaurant. The course includes yuba tempura, simmered *hiryozu* (known as ganmodoki in the Kanto [Tokyo] area) and *goma* (sesame) tofu. (6) Aburage (two sizes).

Even today, Chinese and Japanese view tofu in very different ways: "... Chinese cooking tends to regard tofu as an additive, as something which enhances something else. The Japanese, on the other hand, relish the taste of tofu itself..." for example as *Hiyayakko* [chilled tofu; summer] or *Yudofu* [simmering tofu; winter]. Each is seasoned with soy sauce or a soy-based dipping sauce. The names of various

popular Japanese tofu recipes are given (p. 40).

“Freeze-dried tofu” is said to have originated one cold night in a temple at the summit of Mount Koya [*Kōya-san*] when a forgetful acolyte left the tofu offering of the day on the altar. The next morning it was found frozen. It was also found that this tofu had a completely different texture from ordinary tofu and it could be kept for a long dried since it contained very little water. This tofu has at least four different names: (1) Koya-dofu. (2) Misuzu-dofu. (3) Shimi-dofu. (4) Kori-dofu.

Note 1. This is the earliest English-language document seen (May 2012) that contains the term *shimi-dofu* (written as two words, regardless of hyphenation, without diacritics).

A large illustration (p. 40-41) shows tofu being made from the *Kinsei Shokuhin Zukushi Ekotoba* (1805). The basic process has not changed to this day.

The copyright page notes: “The text of this book is based on a series of articles that appeared in *Winds* magazine, 1981-83.” “In this book, all twentieth-century Japanese names appear in Western order, and all earlier names appear in traditional order, surname first.”

Note 2. There are also chapters on sushi, sukiyaki, tempura, menrui (noodles), onigiri, mochi, tsukemono (pickles), okashi (Japanese sweets, confections). Saké. Ocha (tea). Address: Japan.

479. Yan, Martin. 1985. *Martin Yan: The Chinese chef*. Garden City, New York: Doubleday & Company Inc. 179 p.
 • **Summary:** “From the National Public Television Series “Yan Can Cook,” now in its sixth season, with 560 shows he has hosted since 1978. One of the show’s sponsors is Kikkoman. The recipes in this book are divided by geographical region. “The best way to grasp the diversity of China’s cuisine is to consider the land as divided into four major culinary regions [north, south, east, and west], each boasting its own cultural identity. Contents: Introduction. Canton. Szechuan and Hunan. Peking. Shanghai. Nouvelle cuisine.

On pages 8-9 is a gorgeous color photo (2-page spread) showing all the foods and seasonings described in the “Glossary” that follows (p. 11-15). On page 10 is the numbered “key” to the names of items shown on pages 8-9. These include:

Bean curd (“Also known as ‘tofu.’ Types include: dried [yuba] {in sheets or sticks}; fermented {either red or white and fermented in rice wine}; fresh {in cakes or blocks}; and fried {in small pouches or cubes}. See also p. 79.”
 Bean paste, sweet (“Sweetened fermented soy bean paste used as a seasoning in many Szechuan and Hunan dishes”).
 Bean sauce, brown (“Also referred to as yellow bean sauce. Thick sauce made from fermented soy beans”).
 Bean sprouts (“Tender sprouts from mung beans or soy beans”).
 Black beans, fermented (“Small, fermented black [soy] beans with pungent aroma and salty taste. Used in Cantonese-style

dishes. Sold canned or bulk in plastic bags... Rinse before using”).
 Hoisin sauce (“Dark brown, thick sauce with a sweet, spicy flavor; made from fermented soy beans, flour, vinegar, sugar, garlic, and spices”).
 MSG (“... not called for in this book”).
 Soy sauce. Tofu (“See Bean curd”).

A recipe for “Black bean sauce” (p. 32) calls for “¼ cup fermented black beans,” 2 tablespoons vegetable oil, 3 cloves minced garlic, 3 tablespoons dry sherry, 2 tablespoons dark soy sauce, 1 tablespoon brown sugar, and 2 teaspoons sesame oil. It is made in a wok.

Contains 9 recipes for tofu (the term now preferred by the author to “bean curd,” though he uses both). These include: Crabmeat & bean curd soup (with “1 package {about 1 pound} soft tofu {bean curd}, drained and cut into ½-inch cubes,” p. 47). Szechwan preserved vegetables with tomato (with “1 package {about 1 pound} firm tofu {bean curd}, drained,” p. 77). Vegetarian tofu casserole (with “2 tablespoons fermented bean curd, mashed” and “8 ounces pressed bean curd, cut into thin slices,” p. 80). Pressed bean curd with beef (with “1 package {7 ounces} pressed soy bean cake, cut into thin slices,” p. 89). Peking pork & mushroom soup (with ½ package firm tofu, p. 108). Tofu & green bean salad (with “1 package {about 1 pound} firm tofu {bean curd}, drained,” p. 136, photo p. 151). Shanghai fish soup (with ½ package firm tofu, p. 137). Bean curd family style (with 1 package firm tofu, p. 141). Vegetarian bean curd roll (with “6 dried bean curd [yuba] sheets,” p. 155). “Red fermented bean curd” is mentioned on page 10 (no. 48 in list) and as an optional ingredient (“for more exotic flavor”) in a recipe for Chinese BBQ pork (p. 38).

On page 79 is a description of the many uses of the soybean, including dark/thick and light/thin soy sauce, tofu (fresh bean curd), deep-fried bean curd, dried bean curd sheets or sticks (yuba), and fermented bean curd [fermented tofu] in red and white versions.

“Dark soy sauce has a heavier consistency and is somewhat sweeter. Its dark color imparts a reddish-brown hue to the foods cooked in it, so it is used in ‘red-cooked’ dishes. Light soy is an all-purpose soy sauce often used in marinades and in stir-fry dishes.” Address: Yan Can & Company, Inc., P.O. Box 4755, Foster City, California 94404.

480. Frentz, Jean-Claude. 1986. *Le tofu [Tofu]*. *Filiere Viande* 9(85):49-50. Jan. [1 ref. Fre]

• **Summary:** Discusses the composition of tofu and the processes used to make it. A table gives the nutritional composition of the following: Tofu, firm tofu, tofu burger (fried), soymilk, grilled tofu, dried-frozen tofu, okara, dried yuba, pressed tofu, whole dry soybeans. Address: Directeur technique, Soussana SA, France.

481. *Eiyo to Ryori (Nutrition and Food, Tokyo)*. 1986. Daizu, daizu seihin: Mijika na tanpakushitsu-gen [Soybeans and



soyfoods: A protein source which is close at hand]. Feb. p. 22-34. [Jap]

• **Summary:** A collection of recipes, each accompanied by a color photo, using tofu, deep-fried tofu pouches, tofu cutlets, dried-frozen tofu, boiled soybeans, tofu burgers (ganmodoki), okara, and yuba. Address: Japan.

482. Fang, Fang. 1986. She lives to make village rich. *China Daily*. March 4. p. 5. [Eng]

• **Summary:** Liu Zhihua started has started two factories making fuzhu (dried soy cream paste [dried bean curd sticks]) in rural Xinxiang County, Henan Province, China. She is now widely known as one of the first woman entrepreneurs in Henan Province. She went into business in 1980 and within 5 years was managing six factories in her village. “She has led a 353-member production team from the depths of poverty to a prosperity that challenges the living standards of the big cities.

Liu, age 48, graduated from a local high school and is the mother of 3 sons. A large photo shows Liu, with two woman workers on each side, all standing behind a rack of drying yuba, as she holds up and inspects a dried yuba stick. Behind them, the huge factory and many racks of drying yuba are clearly visible. Address: China.

483. Ying, Tian. 1986. Trading transforms farmers’ fortunes [Baiyunshan Agriculture, Industry and Trade Joint Corp. in Guangdong aids yuba exports]. *China Daily*. March 24. p. 2. [Eng]

• **Summary:** Dongping Fuzhu factory, which produces dry yuba now has annual exports of 200 tons versus only 70 tons a few years ago. Address: Staff reporter.

484. Forman, Gail. 1986. Where’s the beef? Just substitute bean curd skin. *Washington Post*. June 15. p. K1, K6.

• **Summary:** Special to the Washington Post: Bean curd has a 2,000 year history [sic] as a dietary staple all over East Asia and recently it has developed a following in the United States. Less well known is a relative of bean curd called “bean curd skins.”

Before the coagulant is added to hot soy milk to make bean curd, “a thin skin forms on top, much like the skin that forms when cow’s milk or cream is heated... This very thin skin, carefully lifted off and hung up to dry, is called tiem jook [sweet dried yuba] by the Chinese, yuba by the Japanese. In English it goes by the various names of bean curd skin or tofu skin, bean curd sheets and bean curd robes.”

Note: This is the earliest English-language document seen (Oct. 2012) that uses the word “robes” or the term “bean curd robes” to refer to yuba.

The thinner the bean curd sheets, the better. Oriental groceries stock them in various dried forms: flat sheets, rolls, folded sticks, strips, circles, and small triangles. They are brittle and break easily, but last almost indefinitely without refrigeration. Some grocery stores now also sell fresh and frozen bean curd skins, which are easier to handle and more flavorful than dried.

Bean curd skins first became widely used millennia ago in Chinese Buddhist vegetarian cuisine, where they were used in place of meat—as in mock Peking duck. They are widely used as wrappers of almost any small packet of tasty ingredients. Steamed bean curd sticks [dried yuba sticks], made of rolled or folded sheets, add substance to a bowl of

vegetable broth.

Contains the following recipes, from various restaurants, for using bean curd skins: China Harbor lobster roll (a good way to stretch a small amount of lobster). Meat stuffed bean curd skins (calls for "2½-inch square pressed bean curd"). Yellow birds (vegetarian). Mock Peking duck (vegetarian). Bean stick soup. Steamed fish with bean curd sticks (calls for "2 ounces bean curd sticks, broken into 2-inch sections"). Fukien stuffed shrimp in bean curd skins. Buddha's delight (vegetarian).

Note: This very creative article is the first to mention the word "yuba" in a major American newspaper. Address: Japan.

485. Gowland, Hermione. 1986. Wheat gluten bears a remarkable resemblance to real meat. *Guardian (England)*. Aug. 8. p. 14.

• **Summary:** The corner stones of the Buddhist vegetarian cuisine called Shojin Ryori "were beancurd [tofu], beancurd skin [yuba], and wheat gluten" [fu].

486. Barnett, Mark; Barnett, Gail. 1986. Four Rivers. *Washington Post*. Aug. 10. p. SM26-27.

• **Summary:** This is a review of the restaurant Four Rivers, 184 Rollins Ave., Rockville, Maryland. "Even more delicate (perhaps bland to some tastes) are the cold bean sprout rolls, sushi-pretty, in which fresh, crisp sprouts are rolled in a very thin tofu skin [yuba] and served with a hot peanuty sauce." Also tasty is the tofu and greens soup. Address: Japan.

487. Saio, Kyoko. 1986. Interactions among traditional and emerging processing technologies observed in Japanese food industries. In: V.H. Potty, et al. eds. 1986. *Traditional Foods: Some Products and Technologies*. 292 p. See p. 209-15. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India.

• **Summary:** Contents: Soybean food technologies: Traditional but local products include Rokujo-dofu (made in a small mountainous region of Yamagata prefecture), Hoshi Abura-age or Kanso Abura-age (made in Matsuyama city, Ehime prefecture), Yuba (made fresh mostly in Kyoto), and Shimi-dofu (made in cold, mountainous regions of northern Japan). Emerging soybean food technologies related to traditional foods: Soymilk (tonyu), Daizu-no-Hana (developed by Asahimatsu Shokuhin; marketed with help from Takeda Yakuhin Kogyo; a flowchart is given). Traditional foods prepared from vegetable products: e.g. Tofu derivatives. Address: National Food Research Inst., 2-1-2 Kannondai Yatabe, Tsukuba, Ibaraki 305, Japan.

488. Watanabe, Tokuji. 1986. Traditional foods: Their values, problems and research and development. In: V.H.

Potty, et al. eds. 1986. *Traditional Foods: Some Products and Technologies*. 292 p. See p. 201-08. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India. [7 ref]

• **Summary:** Contents: Introduction (ways of classifying traditional foods). Structural characteristics of traditional food industries in Japan. Traditional food processing technologies. Problems and reevaluation of traditional foods. New food processing technologies applied to traditional foods. Technologies applicable to traditional foods. Assessment in modernization of traditional food production. Some activities related to traditional foods. Conclusion.

Traditional foods can be classified as staple or non-staple, fresh or processed (processing technologies include fermentation [e.g. miso, soy sauce, natto], salting, acidifying, drying after freezing [kori-tofu], sun-drying, fractionation [tofu], fabrication [ganmodoki], simulation of animal foods [soy milk, ganmodoki, su-ho-tai made from yuba in China]), animal or vegetable origin, and region or national production.

In Japan, rice consumption is decreasing year after year. It is thus not surprising that consumption of traditional foods closely associated with rice production are also decreasing. The reevaluation of traditional foods and their advantages and disadvantages are discussed. New food processing and packaging technologies are being applied to traditional foods, including tofu, miso, natto, and koji. Recently a method has been found to extend the shelf life of natto beyond the traditional 1-2 day period. Miso has been freeze-dried.

"Another application of a new process for the traditional foods is the emulsion curd which is a semi-solid mixture with definite proportion of soybean protein, oil and water. It keeps its form without flow. Even the dried or frozen product recovers its original texture by hydration or thawing. Therefore, it is used as a substitute in dried or frozen *Tofu*. Regular *Tofu* cannot recover its texture once it is frozen or dried...

Miso can be enriched with vitamin B-2 and calcium, and its salt content lowered. Since 1980 the Laboratory of Food Science at Kyoritsu Women's University has been conducting a research survey on traditional foods and dishes in Japan in cooperation with the Cooking Research Laboratory. "This project consists of three components: (a) survey of the present status of traditional foods on local basis at respective regions by visiting prefectural research organisations—universities and colleges; (b) sending questionnaires to students for seeking information on the position of the traditional foods in the dietary patterns of individual homes and also to obtain their comments on the future prospects of the local traditional foods; (c) and documentation regarding local traditional foods, followed by

classification according to preparation or cooking method for analysis. On the basis of the collected data, the relationship between each local traditional food and its natural, cultural and historical background has been studied and published in the university's journals. More efforts are being made to identify the reasons as to why and how some traditional foods have survived in certain regions, while the others have disappeared or reached the verge of extinction.

"Another related activity is the one carried out by Ajinomoto Company, a major food manufacturer in Japan, which has got the modern audio-visual media, video-tapes and 36 mm-films. Their team has been documenting the processing of some selected traditional foods like *Tofu*, *Yuba*, *Fu* and such other foods as demonstrated by professionals by using the old traditional methods and facilities. This would help in the documentation of traditional technologies before they disappear in the event of modernisation of such foods. Such tapes and films have been made available by the company...

"Traditional foods, especially those of plant origin, are prepared by such complex multi-step processes as to be called 'products of human wisdom.' Therefore there is so much to learn from such products if serious attention be paid. Indeed they have great potential for developing new food industries." Address: Kyoritsu Women's Univ., Tokyo, Japan.

489. Yin, Zong Lun. 1986. Development and industrialization of traditional food production in China. In: V.H. Potty, et al. eds. 1986. *Traditional Foods: Some Products and Technologies*. 292 p. See p. 191-200. Aug. Presented at the UN University Workshop on "Traditional Food Technologies: Their Development and Integrated Utilisation with Emerging Technologies." Held June 1983 at CFTRI, Mysore, India.

• **Summary:** Under "Oilseeds, Soy products," the author discusses soymilk, soybean curds (tofu; soft tofu is popular in south China and hard tofu in North China), fried bean curd, smoked bean curd, "stink" flavoured bean curd, soymilk skin sheet [yuba], dried soymilk skin sticks [dried yuba sticks], fermented bean curd or soy cheese, and soybean powder.

Under "Condiments," soy sauce is discussed. Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "soymilk skin" or "soymilk skin sheet" to refer to yuba, or that uses the term "dried soymilk skin sticks" to refer to dried yuba sticks. "These products form an important part in a vegetarian's diet and are used in conjunction with other ingredients to prepare imitation meat and fish like products for vegetarian dishes" (p. 194).

"Soymilk is a very popular breakfast beverage. In order to supplement milk supplies and also meet the special needs of those who, for some reason cannot drink milk, processing factories have been set up with relatively large-scale production capacities for soymilk. With the same distribution

pattern as milk, soymilk is supplied to various catering departments, schools, kindergartens, nurseries and families. The process employed for soymilk ensures destruction of trypsin inhibitor and effective deodorization to reduce the unpleasant bean-taste...

"Fermented bean curd or soy cheese can be produced by the fermentation of bean curd. The fermented bean curd may differ in shape (square bits, cubes), colour (white, red), flavor and smell; the products can also be steeped in seasoned rice wine or preserved with drags of rice wine. Sometimes they contain added pepper, rose leaves or shrimp spawn. The traditional production procedure is very subtle. The aging process requires high levels of skill and experience. The product is liable to break down and careful handling is needed. Presently, a new type of fermented bean curd in the form of paste which is more amenable to handling and packaging, and consuming has appeared on the market. However, this product does not conform to Chinese traditional eating habit and is, therefore, now [not?] widely accepted, either for nutritional value or flavour. Soy cheese has a great potential for development...

"In several baby food recipes, soybean constitutes an important source of protein. The well known milk substitute 5410 formulated during the 1950s contained soybean powder as the main ingredient. Formula 5410 has proved to be a success in terms of its nutritional value. It has become the basic recipe for many milk substitutes. Some factories use spray drying process to produce instant blended milk powder consisting of soymilk, milk and other ingredients; they have gained some technological and financial benefits. In recent years, there has been a continuous flow of such products into the market.

"Based on previous research efforts, and in conformity with China's present situation, work is being done to develop an oil-containing concentrated soy protein. The techniques involved have certain positive characteristics. The end product can be a liquid for direct use as a food ingredient or a spray-dried powder for the formulation of dry-mixes." Address: Research Inst. of Light Industry, Beijing, People's Republic of China.

490. Abdul Rahman, Hussein. 1986. An update in the manufacturing of traditional fermented and non fermented soyfoods in Malaysia. In: F.G. Winarno, ed. 1986. *International Soyfoods Symposium*. xiv + 403 p. See p. 59-73. Held 16-18 Sept. 1986 in Jogjakarta, Indonesia. [38 ref]

• **Summary:** Contents: Abstracts. Introduction. Present status of soybean utilization in Malaysia. Manufacture of traditional fermented soyfood in Malaysia. Manufacture of traditional non-fermented soyfood in Malaysia. Research and development of soyfood in Malaysia. Conclusion. Address: Extension Services, Food Technology Div., Malaysian Agricultural R&D Inst., P.O. Box 202, Serdang, Selangor, Malaysia.

491. Chen, Wen-Lian. 1986. Mechanization in the manufacture of yuba. In: F.G. Winarno, ed. 1986. International Soyfoods Symposium. xiv + 403 p. See p. 95-99. Held 16-18 Sept. 1986 in Jogjakarta, Indonesia. [4 ref]
 • **Summary:** Contents: Introduction. Mechanized methods. Conclusion. Address: Food Industry R&D Inst., P.O. Box 246, Hsinchu, Taiwan, China.

492. Iwane, Atsuko; Yasui, T.; Tsutsumi, C. 1986. Yuba seizô katei ni okeru seisei maku-chû no tōgan-ryō no henka [Changes in low molecular weight carbohydrates in yuba (soymilk skin) during yuba-film formation]. *Nippon Shokuhin Kogyo Gakkaishi (J. of the Japanese Society for Food Science and Technology)* 33(11):783-85. Nov. [6 ref. Jap; eng]
 • **Summary:** Sucrose and stachyose were major sugars in the skins, followed by raffinose. Sucrose, raffinose and stachyose contents of the first and the last formed films were 1.42% and 8.03%, 0.21% and 0.53%, and 1.97% and 7.17% on dry basis, respectively. Results indicated that because of the high solubility of these saccharides, they would be increasingly concentrated in the residual soymilk and their contents in films increased gradually as the film formation process proceeded. Address: 1. Morioka Junior College of Iwate Prefecture, 1-48 Sumiyoshi-cho, Morioka-shi, Iwate 020; 2-3. National Food Research Inst., Ministry of Agriculture, Forestry and Fisheries, 1-2, Kan-nondai 2-chome, Yatabe-machi, Tsukubagun, Ibaraki 305. All: Japan.

493. Durston, Diane. 1986. Old Kyoto: a guide to traditional shops, restaurants, and inns. Tokyo, San Francisco: Kodansha International. 240 p. Foreword by Donald Richie. Illust. (photos by Lucy Birmingham). Indexes (by type of shop; alphabetical list of shops). 19 cm. [17 ref]
 • **Summary:** “A completely revised version of the classic guidebook to Kyoto, with a foreword by Donald Richie. Down the cobbled paths and behind the tranquil noren curtains of Kyoto, the old way of life goes on, nurtured in the restrained furnishings of the traditional inns and in the old shops where fine handmade items still add a touch of quality to life. Since the first edition appeared in 1986, this lovingly written travelogue-cum-guidebook has become de rigueur for knowledgeable travelers seeking to find ‘the real Kyoto.’ With 51 maps and over 120 photos of the living heart of this ancient capital—and a vanishing way of life. Each shop featured in the book is accompanied by a photo showing its front and a map showing its location” (from the publisher).

Tofu is mentioned on pages 9, 30, 53, 55, 116, 121 (Okutan), 123, 147, 158, 193, 201, 234, 239.

Miso is mentioned on pages 53, 100, 123 (dengaku), 147, 179, 213, and 233.

Yuba is mentioned on pages 30, 59, 61, 147, and 234. Natto is mentioned on pages 49, 183, 233, and 239.

Shōjin ryōri, the vegetarian [actually vegan] food served in Buddhist temples, was also developed in Kyoto from its prototype, fucha ryōri, brought from China by priests. Yuba, uncooked wheat gluten (nama-fu), and tofu are all part of shojin ryori (p. 30).

Fuka (p. 50-52) is a shop that specializes in making wheat gluten, including *nama-fu*, the chewy variety, that is made from half regular wheat gluten and half glutinous rice flour (*mochi-gome*). Wheat gluten is an important part of the vegetarian diet of Zen monks.

Iriyama Tofu (p. 53-55) makes tofu (*momen-dōfu*) in the traditional way, using nigari as a coagulant. The owners (Mr. and Mrs. Iriyama) are 9th generation tofu makers, working in a 120 year old building. Using a charcoal fire they make grilled tofu (yaki-dōfu). They also make deep-fried tofu pouches (*o-age*) and tofu balls (*hiryōzu*).

Note: This is the earliest English-language document seen (May 2012) that contains the term *hiryōzu* (italicized, with diacritics).

Yubahan (p. 59-61) makes yuba in the traditional way using a wood fire and soybeans cooked over an old clay *kamado* stove. “No clocks or timers are involved.” Tomizo Asana is the 9th generation yuba maker. “Yubahan started making yuba in 1716, but all family records were destroyed in the huge fire of 1864 that destroyed much of the city.”

Takasebune (p. 98-100) specializes in tempura, with a tempura dinner (*tempura teishoku*) including a “generous bowl of miso soup.”

Tamatomi (p. 116-17) offers teppin-age (a fry it yourself tempura meal) and oden stew (with tofu).

Okutan (p. 120-23), inside the north gate of famous Nanzen-ji temple, is famous for its tofu cookery. It has served *yudofu* (fresh tofu simmered in a big ceramic pot over a charcoal fire, with a shoyu dipping sauce) for 12 generations and 300 years. Side dishes include vegetable tempura and tofu dengaku.

Nakamura-ro (p. 136-38) is famous for its tofu dengaku (with miso).

Bunnosuke-jaya (p. 142-44) specializes in amazake.

Ikkyū-an (Ikkyū-an, p. 145-47) serves fucha ryori (Chinese-style vegetarian temple food, including sesame tofu, tofu dengaku. It is named after the famous Zen monk and priest Ikkyū Sōjun {Ikkyū Sojun}).

Takocho (p. 158), 100 years old with 15 seats at the counter, features oden stew with tofu.

Ichiwa (p. 178-80) which makes rice cakes (mochi) and abura mochi (cakes of glutinous rice flour dough that are charcoal grilled on green bamboo skewers then dipped into a sweet miso sauce).

Isoda (p. 181-83, 41 Shimomonzen-cho, Murasakino, Kita-ku, southeast of Daitoku-ji. Phone: 075-491-7617) is said to be the best and oldest maker of Daitokuji natto in Kyoto; their fermented black soybeans are sold in a small wooden box. After Daitoku-ji “was destroyed in the Onin

Wars (1467-77), an eccentric Zen priest named Ikkyū supervised the reconstruction of the temple and became its 47th (and most celebrated) abbot. According to legend it was Ikkyū who introduced the Chinese Buddhist recipe for this compact, high-protein treat” for mendicant Zen monks. The original recipe, which is still used at Isoda, is described. Because warm weather and natural sunlight are necessary, Daitoku-ji natto can only be made during the summer months, most often in August after the rainy season has abated. Even Sen no Rikyu, the famous Japanese tea master, is said to have been an ardent fan of the salty morsels—which are still served with ceremonial tea. Chūgo Isoda, the present owner, is a 17th generation maker of Daitokuji natto. He and his wife work together during the hot summer making the fermented black soybeans. A full-page photo shows Mr. Isoda mixing a shallow tub of the dark fermenting beans. Daitoku-ji natto are also mentioned on page 49.

Nishiki (p. 197-99) is famous for its kaiseki ryōri. “Every month the ingredients are completely changed to match the season.” One dish is karashi-dōfu (“mustard tofu”).

Sagano (p. 201-02) serves simmering tofu (*yudōfu*) in the bamboo forest just south of Tenryū-ji temple.

The excellent “Glossary” (p. 230-32) includes entries for: Amazake, fu (wheat gluten), kaiseki, miso, mochi, nattō (fermented soybeans), oden, o-hagi, shōjin ryōri, sukiyaki, tofu, yuba, yūdofu. Address: Kyoto, Japan.

494. Horne, Kibbey M. 1986. Chinese food for the modern Marco Polo. San Francisco, California: Chinese Materials Center Publications. vii + 270 p. Plus 11 unnumbered leaves of plates. Illust. (color). Map (color). 19 cm. Series: Asian Library Series No. 43. [6 ref]

• **Summary:** This book “is an attempt to present Chinese food as the Chinese view it.” It is not a cookbook, but rather the kind of book that Marco Polo would have found very useful as he first encountered the food of China.

Page 6: The term ‘putrid’ embraces, “among other things, cheese (which most Chinese abominate as an inedible Western curiosity) and ‘stinky’ bean curd, a Ningpo specialty which some Chinese love it and many others do not.”

Page 15. “Another Ningpo specialty, specialty, which appeals to a much more limited circle of Chinese and almost no Westerners at all, is Stinky Bean Curd. This is fermented bean curd which smells rather like a stout cheese which has gone off. When cooked it disperses a strong odor in all directions and to considerable distance.”

Chapter 9, titled “Meat,” begins by discussing the meat radical (*rou*). It then notes (p. 68): “There is one interesting case in which the entire meat character is used as the radical, and applied to something which is not meat at all, although it is a principal source of protein for the poorer Chinese: *dou fu*.” It is used less frequently in terms like *dou fu yi* ‘bean curd skin’ [yuba]. The term “bean curd” appears on 13 pages

in this book.

The character *su* means “plain,” as in the word *sutsai* “vegetarian” (p. 92). The English word “vegetarian” appears on 6 pages in this book.

Three chapters near the end of the book are very interesting and useful. Each is a long table having four columns: Chinese character(s), Mandarin, English, and Cantonese—but in a different order for each chapter. The three chapters are: (1) “Mandarin glossary” (p. 173+), sorted alphabetically by the romanized Mandarin word. For example: 1 Cc, fu, curd, fu; or 1 Cc (Chinese character), nau, brains, nou; or 1 Cc, mau, hairy, mou. 2 Cc, ru fu, fermented bean curd, yu fu (p. 189, 243). (2) “English glossary” (p. 197+). (3) Cantonese glossary (p. 221-45).

“The author, a linguistic anthropologist, was educated at Choate, Harvard, West Point, Heidelberg and Georgetown. He has spent a fourth of his life overseas as an Army officer, traveler, and researcher. For the last twelve years he has been the director of International Programs for The California State University, one of the world’s largest university systems.” A color photo on the rear cover shows the author. Address: California.

495. Hoshijo, Kathy. 1986. The art of dieting without dieting! Recipe and guidebook. The Self-Sufficiency Association, 2525 South King St., Honolulu, Hawaii 96826. Or: P.O. Box 1122, Glendale, California 91209. xiv + 729 p. Illust. Index. 24 cm.

• **Summary:** A whopper of a cookbook, with 300 easy-to-prepare lacto-vegetarian recipes (no eggs) from the star of the PBS television series “Kathy’s Kitchen.” Kathy has 6 healthy children (see color photo on rear cover) and 5 years of experience on television teaching Americans how to eat healthy foods. Each recipe contains a detailed (full-page!) nutritional analysis.

This book contains a wealth of recipes using soyfoods. For example, the index lists 57 recipes for tofu and tofu mayonnaise, 13 recipes for tempeh, 9 recipes for yuba, 6 recipes for miso, and 4 recipes for soybeans (including soymilk). One section titled “Soyfriends” (p. 63) explains: “In eliminating meat from my diet, one food that has become a real friend in the kitchen is soybeans and by-products made from soybeans. From a nutritional standpoint, soybeans are a good nutritional replacement for meat as they are the only legume which contains all essential amino acids... Soybeans by themselves have a Net Protein Utilization about equal to that of beef and chicken.” Address: Honolulu, Hawaii; and Glendale, California.

496. Leneman, Leah. 1986. The international tofu cookery book. London and New York: Routledge & Kegan Paul. 122 p. Illust. by Megan Dickinson. Index. 20 cm.

• **Summary:** Contents: Introduction. Types of tofu readily available: Morinaga silken tofu, Japanese instant silken

tofu ("House" brand, soya milk powder and a coagulant), medium tofu, Chinese tofu, converted Japanese tofu, firm tofu (and address of 4 makers of vacuum-packed firm tofu in UK—Cauldron Foods, The Regular Tofu Co., Paul's Tofu {organic}, and Bean Machine). More unusual forms of tofu: Fermented tofu, dried-frozen tofu, deep-fried tofu, bean curd sticks or sheets [yuba]. General notes: Quantities, tofu mayonnaise, soya yogurt, American measurements. Making tofu at home. Table of metric equivalents. British- and American-style dishes (More than 100 recipes). Mexican-style dishes. The Mediterranean. Asia. Desserts.

A discussion of the author and her works appears on the half-title page at the front of the book. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

497. Rachim, Abdul. 1986. Indonesia: Notes on the soybean food industry under producers' co-operatives in Indonesia. *CGPRT* No. 4. p. 244-54. Includes 7 tables and figures.
 • **Summary:** Contents: Background. Indonesian soybean foods. Fermented products: Tempe, oncom, tauco, kecap. Non-fermented products: Tofu, soymilk. Function and role of Kopti (and BULOG). Traditional processing industry: Current situation of small-scale home industry, further studies on the food industry / marketing system.

The Food Balance Sheets of the Central Bureau of Statistics show that 90% of Indonesia's soybeans are used for food. Most of the human consumption is in the form of a variety of popular processed foods: tempe, tahu (tofu), tauco, and a number of other less popular foods: soybean sprouts (tauge), sere in Bali, yuba, soybean milk, fried soybeans (eaten as a snack), beans boiled in the pod (also a snack), and the beans cooked as a vegetable or as an ingredient in soups. Only one factory (Sari Hasuda, in Yogyakarta) produces soybean milk. It is enriched with nonfat dried milk, vitamins, and minerals.

To coordinate and improve the economic viability of the small tofu and tempeh producers, a cooperative system, called Kopti (*Koperasi Produsen Tempe dan Tahu Indonesia*; Indonesian Tempe / Tofu Processors' Co-operative) was founded in 1979. The main function of Kopti is to procure and distribute soybeans to its members, the number of which has increased from 25 in 1980 to 286 in May 1985. It handles about 407,160 tons/year. The purchase price of soybeans is as follows (Rupiah/kg): From USA 415, from China 425, from Indonesian farmers 475-80. Certificate [certified] seeds cost 550-75.

Tofu, tempe, kecap, tauco and oncom processing is primarily done in small factories. 3 studies have been made on the size of these factories and the quantities they process: as part of the 1974 Industrial Census of the Central Bureau of Statistics (CBS); by Winarno, et al., in 1976; and by the study team on Soybean Commodity System (SCS) in the Garut area of West Java in 1984. The findings of these 3 studies are presented in Table 2.

"We should be cautious in comparing their results, however, because of biases in the collection of the information. The CBS study, for instance, was part of an industrial census, which divided processors into two categories: small-scale industries (5-19 labourers), and home factories (1-4 labourers, some of whom may be family members). However, there may also be wide variations in the industry in different parts of the country.

"Despite these limitations, it seems that the volume of soybean processed by each unit has increased appreciably, probably reflecting a favorable growth of the industry. Yet the number of labourers per unit has remained small, and is probably diminishing. This may be because of the use of mechanical crushers or dehullers for both tempe and tofu productions." Address: Research Asst., ESCAP CGPRT Centre, Bogor, Indonesia.

498. Stidham, Martin. 1986. *The fragrant vegetable: Simple vegetarian delicacies from the Chinese*. Los Angeles, California: Jeremy P. Tarcher, Inc. x + 224 p. Illust. Index. 24 cm.

• **Summary:** Chapter 3 (p. 57-84), titled "'Meat without bones'—Tofu," contains 3 preparatory techniques and 16 recipes. Chapter 4 (p. 85-98), titled "More 'meat without bones'—Pressed tofu," contains two basic recipes for pressed and spiced pressed tofu plus 9 additional recipes. "The highly odiferous 'stinking' tofu (*chou doufu*) is made by fermenting tofu or pressed tofu, or allowing it to grow moldly, then deep-frying it. Usually eaten with a hot sauce, this is available at movable carts..." (p. 58).

"The dense cakes are fermented to become tofu 'cheese' (see Chapter 1) as well as 'stinking' tofu..."

Chapter 5 (p. 99-126) titled "'Duck,' 'chicken,' and other specialties," first discusses the basic ingredients in making these traditional meatlike products (Bean curd sheet [pressed tofu sheets], bean curd skin [yuba], and bean curd sheet noodles), then gives numerous recipes, many containing soy. Chapters on fried gluten, soups, and fruit and nut desserts follow. Soy sauce, "green soybeans" [green vegetable soybeans], soymilk, soy sprouts, and soy-pickled cucumbers are also mentioned.

The author, a graduate of Northwestern University, lived in East Asia for over 10 years, first as a student at National Taiwan Univ. in the Graduate Inst. of Chinese Literature, and later as a translator of short stories, poetry, and novels. "A long-standing interest in the cuisines of the region, especially vegetarian, has taken him into home, restaurant, and temple kitchens. He has studied privately with instructors from the area's well-known cooking schools, including Wei-Chuan and Pei Mei's, besides being tutored in special techniques by tofu makers and manufacturers of other Chinese specialty food items."

499. Takahashi, Kuwako. 1986. *The joy of Japanese cooking*.

Tokyo: Shufunotomo Company, Ltd. 311 p. Illust. (some color photos). Index. 27 cm.

• **Summary:** An excellent book with especially good descriptions of Japanese ingredients. Contents: Dedication. Foreword. Introduction. Part I. Japanese ingredients. Seasonings in Japanese cooking. Utensils and equipment. Tableware. Measurements and equivalents. Basic techniques: Making soup stock (*dashi*), cooking rice, preparing fish, boning chicken, cutting vegetables, broiling, poaching, steaming.

Part II. Seafood. Chicken. Eggs. Beef. Pork. *Tofu* (bean curd). Vegetables, dried and manufactured foods.

Part III. Appetizers (*zensai*). Soups. Salads (*aemono*). Casseroles (*nabemono*). Rice. Pickles. Desserts and Japanese sweets.

Part IV. Menu planning. Sample menus with preparation schedules. Part V. Making tea. Serving sake.

A color photo (p. 15) shows six different soyfoods made from soymilk: 1. Deep-fried soybean puffs (*age* or *aburage*). 2. Fried tofu cutlet (*atsu-age* or *nama-age*). 3. Tofu patties (*ganmodoki*). 4. Soymilk film, dried (*yuba*). 5. Bean curd cake (*tofu*). 6. Freeze-dried tofu (*Kôya dofu*).

The section titled “Japanese ingredients” (a superb glossary, with many entries accompanied by an illustration {line drawing}, p. 17-32) includes: Bean curd cake (*tofu*), incl. regular tofu (*momen dofu*), soft tofu (*kinugoshi dofu*), Ever-Fresh Silken Tofu (aseptically packaged), instant tofu, firm tofu (Chinese style). Tofu products: Deep-fried soybean puffs (*agé* or *aburage*), fried tofu cutlet (*atsu agé* or *name agé*), freeze-dried tofu (*Kôya dofu*), grilled tofu (*yaki dofu*), tofu patties (*ganmodoki*). Beans: Red beans, dried (*azuki*), soybeans, dried (*daizu*), soybeans, fresh (*eda mamé*). Bean pastes: Bean paste, fermented (*miso*), sweet bean paste (*azuki an*). Soymilk film, dried (*yuba*). Soy sauce (*shoyu*).

The glossary also discusses: Horseradish, Japanese (*wasabi*), konnyaku, kombu, umeboshi, kabocha, daikon (4 forms), glutinous rice (*mochi gome*), red bean rice (*sekihan*), pounded rice cake (*mochi*), rice wine lees (*sakekasu*), rice wine lees pickles (*narazuke*), perilla (*shiso*), seaweeds (*hijiki*, *nori*, *yakinori*, *small sized nori*, *wakame*, *ao nori*), sesame seeds (*goma*), sweet rice wine for cooking (*mirin*), wheat gluten cake (*fu*, incl. *nama fu*, *yaki fu*, and *matsutake fu*).

The section titled “Seasonings in Japanese cooking (another superb glossary, p. 33-37) discusses: Soy sauce, incl. Regular soy sauce (*koikuchi shôyu*), light soy sauce (*usukuchi shôyu*), tamari soy sauce (darker and thicker, made from fermented soybean and brine in the Nagoya area. “It is not saltier than regular soy sauce but has a richer flavor, thicker taste, and some people prefer tamari as the dipping sauce for sashimi... Note: In the USA the name ‘tamari’ is mistakenly used for natural soy sauce which is not tamari”), white soy sauce (*shiro shôyu*), milder soy sauce (contains less salt). A table showing the nutritional composition of five different types of Japanese soy sauce is given. Combinations

of soy sauce and mirin: Teriyaki. Miso (incl. *kome miso*, *mugi miso*, *mame miso*, mixing of miso types).

Use the good index to see how each of the ingredients mentioned above are used in recipes.

A good biography of the author is appears in the Foreword and on the inside rear dust jacket (with portrait photo). The author was also very active in introducing ikebana (Japanese flower arranging) to the Bay Area and the USA. Address: Japan and Berkeley, California.

500. Hapgood, Fred. 1987. The prodigious soybean. *National Geographic* 172(1):66-91. July.

• **Summary:** Superb photos and an interesting original color painting done by artist James Gurney, in the style of Norman Rockwell, shows more than 60 products containing soybean ingredients (both food and industrial). But, except for the first 2 pages, the text of this far-ranging article is mediocre to embarrassingly erroneous; even the *National Geographic* editors didn’t like it, but Hapgood refused to correct his many errors. For example, large bold print at the top of the first page reads: “For centuries Chinese have called the Soybean ‘Yellow Jewel’ or ‘Great Treasure.’ Now this prodigious bean is seen by some as a weapon against world hunger.” Note: This is the earliest English-language document seen (July 2007) that uses the term “Yellow Jewel” or “Great Treasure” to refer to the soybean.

Superb photos show: (1) Selling tofu in China. (2) Harvesting soybeans with combines. (3) A tractor suspended high over the hold of a cargo ship loaded with soybeans. (4) Making koji at Kikkoman. (4) 42 different colors and shapes of soybean seeds. (5) Henry Ford on 2 Nov. 1940 wielding an ax against a car trunk lid made from a highly resilient soybean-derived plastic. (6) Yuba drying over pans of soymilk. (7) A Japanese woman with her dried-frozen tofu drying under the farmhouse eaves. (8) Favorite Japanese soyfoods dishes: Dengaku, Simmering tofu, yuba, and miso dumplings. (9) Hacho miso in vats with stones piled high on each in an earthquake-proof pyramid shape. (10) *Mame-maki* (bean-throwing ceremony) at Setsubun, held each February in Japan; the beans are thrown from small wooden measuring boxes (*masu*). (11) The *hari-kuyo* ceremony for broken needles in Tokyo. (12) A martial arts master and former Shaolin temple monk in China testing his strength by plunging his arm elbow-deep into a soybean-packed barrel. Address: Boston.

501. Saegusa, Kyoko. 1987. Tônyû to amazake de tsukuru hyôka roisu kuriimu [Royce Cream frozen dessert made with soymilk and amazake]. *Gendai Nogyo (Modern Agriculture)*. Sept. p. 106-10. [Jap]

• **Summary:** Kyoko and her American husband, who live in Tempe, Arizona, use soymilk, amazake (which they make from Cold Mountain koji), tofu, and various flavorings to make what they call Royce (Rice + Soy + Ice) Cream frozen

dessert for use at home. She also makes yuba. One of the longest articles seen up to this time on amazake. Contains three pages with 11 color photos showing how to make amazake and soymilk. Letter from Kyoko Saegusa. 1988. March 21. Her current address: 2040 S. Forest Ave., Tempe, AZ 85282. Phone shown above. Address: 2025 S. Forest Ave. #3, Tempe, Arizona 85282. Phone: 602-966-8397.

502. Snyder, Harry E.; Kwon, T.W. 1987. Soybean utilization. New York, NY: Van Nostrand Reinhold Co. xii + 346 p. Illust. Index. 23 cm. An AVI Book. [381 ref]
 • **Summary:** Contents. Preface. 1. Production, marketing, and sources of information: Introduction, agricultural production, marketing, sources of information. 2. Morphology and composition: Morphology, chemical composition. 3. Processing of soybeans: Preparation, flaking, expellers, solvent extraction, oil refining, protein products. 4. Quality criteria for soy products: Protein and oil products. 5. Functional properties of soy proteins: Interactions of soy proteins with water, interactions of soy proteins with lipid, foaming, commentary on functionality. 6. Nutritional attributes of soybeans and soybean products: Inherent attributes of soybeans, changes due to processing.

7. Oriental soy food products: Traditional nonfermented soybean food products, traditional fermented soybean food products. 8. Soybean-supplemented cereal grain mixtures: Protein-rich food mixtures containing soy flours, composite flours containing soy flour, cereal blends containing soybeans. 9. Soy protein food products: Baked goods, meat products, dairy products, other foods containing soy protein. 10. Soybean oil food products: Salad and cooking oils, mayonnaise, and prepared salad dressings, shortenings, margarines and related products, soybean lecithin products. 11. Grades, standards, and specifications for soybeans and their primary products: Grades of soybeans, specifications for soybean meals and flours, trading specifications for soybean oils, specifications for lecithins, standards for the use of soy protein products in other foods. References in each chapter. Glossary.

This book is well written (though largely a repetition of previous works) in the area of modern soy protein products. It is weak and poorly researched in the area of "Oriental Soy Food Products," which comprises only 1 chapter (22 pages) of the total, making the book unbalanced. The author of this chapter seems to be almost completely unaware of the many major developments in the Western world during the past 10 years.

Note the following Korean soyfood terms: Fresh soybean = Put Kong. Toasted soy powder = Kong Ka Ru. Soy sprouts = Kong Na Moal. Soymilk = Kong Kook or Doo Yoo. Yuba (Soymilk film) = no name. Tofu (Soy curd) = Doo Bu. Tempeh (Fermented Whole Soybeans) = no name. Natto = Chung Kook Jang. Soy sauce = Kan Jang. Miso (Soy Paste) = Doen Jang. Fermented tofu (Fermented Soy Curd) =

no name. Fermented okara (fermented soy pulp) = no name.

Note: This is the earliest English-language document seen (Dec. 2005) that uses the term "Toasted soy powder" to refer to roasted soy flour. Address: 1. Prof., Food Science Dep., Univ. of Arkansas, Fayetteville, AR; 2. Principal Research Scientist, Div. of Biological Science & Engineering, Korea Advanced Inst. of Science and Technology, Seoul, South Korea.

503. Miller, Harry, Jr. 1987. Early work with soyfoods in China. Current work with Miller Farms Food Co. and Solait (Interview). Conducted by William Shurtleff of Soyfoods Center, Oct. 15. 2 p. transcript. [1 ref]

• **Summary:** He is now writing a book on his lifelong work with soyfoods around the world. The original 1936 soymilk in China was named Vetose Soya Milk. There was also an Acidophilus Vetose. The soy ice cream was only for the staff and patients at Adventist hospitals. It was made by Henningsen Produce Co. in Shanghai. They made gluten steaks that contained tofu and various yuba meat analogs. He played with Jethro Kloss' kids but is not sure whether or not Kloss ever had a company making commercial soy products. He thinks perhaps Kloss did have such a company some place in Pennsylvania. Address: c/o Miller Farms Food Co., Cedar Falls, Iowa.

504. Ontario Ministry of Agriculture and Food. 1987. Soybean buyers mission from Japan, Hong Kong, Malaysia, Singapore, October 10-20, 1987. Toronto, Ontario, Canada: Ontario Ministry of Agriculture and Food. 23 p. 30 cm. Saddle stitched. [Eng]

• **Summary:** Contents: Mission members (with a photo of each). Itinerary. Japanese market for edible soybeans. General uses of edible soybeans in Hong Kong, Malaysia and Singapore. List of major importers in Asia (by country). Ontario soybean suppliers. Role of the Ontario Soya-Bean Growers Marketing Board (Chatham, Ontario).

This conference, which took place in Toronto, Chatham, and Harrow, Ontario, Canada, was sponsored by OMAF in Toronto. On the mission were 6 buyers from Japan (Takeya Miso Co., Asahi Industries [tofu maker], Takano Foods Co. [natto maker], Dah Cong Hong, Wako Shokuryo Co., and Gomei Shoji Co. [the last 3 is each an importer and wholesaler]), 2 from Hong Kong (Amoy Industries Ltd., and Chung Hing Co.), 3 from Malaysia (Sin Yong Huat Enterprises Sdn. Ltd, Yeo Hiap Seng (Malaysia) Ltd., and Chop Lee Kit Heng), and 2 buyers from Singapore (Eng Huat (S) Ltd. and Chop Hin Leong). Mike Hojo of OMAF/Tokyo was the mission leader.

The Japanese soybean market is about 5 million tons a year. Of this: Oil crushing 4,036,000 tons. Food 849,000 tons (17% of total), and feed (not crushed) 70,000 tons. From 1982 to 1986 domestic Japanese soybean production has decreased from 168,000 tons to 147,000 tons, while

imports have increased from 4,344,000 tons to 4,857,000 tons. Demand for food soybeans has increased from 803,000 tons to 849,000 tons. Tofu, miso, and natto account for more than 94% of the total utilization of edible soybeans, roughly as follows: Tofu 500,000 tons, miso 200,000 tons, natto 100,000 tons.

In 1986 some 89.9% of Japan's soybean imports came from the USA, followed by China (6.7%), and Brazil (2.65%). That year the least expensive soybeans came from Brazil (US\$219.86/ton), followed by USA (\$221.36), China (\$236.06), and Canada (\$277.50). Note that Canadian soybeans are 25.3% more expensive than those from the USA. Chinese and Canadian soybeans are most widely used to make foods. Large Chinese soybeans are used to make tofu, medium sized for miso, and small for natto. Of the soybeans imported from the USA, 80-85% are imported from oil crushing because of their high oil content. The remaining 10-15%, or approximately 700,000 tons are food soybeans from Iowa, Ohio, or Michigan. Called "IOM" soybeans, they are used mainly to make tofu. Brazilian soybeans have a high oil content and are used for oil crushing only. The ocean freight cost for a 20-foot container shipped to Tokyo is as follows: USA west coast \$1,000. Toronto, Canada \$1,800. USA East Coast \$2,000. Brazil \$2,100. Argentina \$2,500. But a large percentage of regular soybeans are loaded directly into ships, and travel at lower freight rates. Exports of food soybeans from Canada to Japan rose from 10,000 tons in 1979 to 26,000 tons in 1986, while those from China rose from 267,000 tons in 1979 to 323,000 tons in 1986.

Very detailed preferred characteristics are given for soybeans to make miso (6 characteristics), natto (5), and tofu (5). Canadian soybeans are recognized as superior to Chinese and American soybeans for food use. This is one reason they command a relatively higher price.

Hong Kong imports 28,100 tons/year of soybeans, and 63% of these come from Canada, followed by China (35%), and the USA (1.8%). Malaysia and Singapore import 124,800 tons/year, and 53% of these come from the USA, followed by Canada (31.7%), and China (8.2%). Most of the food soybeans in Malaysia and Singapore are used to make soymilk and tofu.

Soymilk: Vitasoy dominates the market in Hong Kong, whereas in Malaysia and Singapore the leading manufacturers are Yeo Hiap Seng, Cold Storage, Lam Soon, and Nestle. Soymilk consumption is increasing in these 3 countries, and in neighboring countries. Soymilk makers believe there are four requirements for their products' success: It must taste good, must be priced competitively with soft drinks, must be perceived as a health food, and must be marketed properly.

Bean curd sheets and sticks [yuba] are very common snacks and dishes in Hong Kong, Malaysia, and Singapore. Manufacturers consider only Chinese and Canadian soybeans for these products. Canadian soybeans produce whiter

soymilk and thus whiter yuba. However the larger size of Chinese soybeans results in a larger yield. Manufacturers normally blend 60% of Canadian soybeans with 40% of Chinese soybeans to obtain a higher output of whiter sheets.

Major Japanese soybean importers include: Da Chong Hong (Japan) Ltd., Gomei Shoji Co. Ltd., C. Itoh & Co. Ltd., Mitsubishi Corp., Kanematsu-Gosho Ltd., Nichimen Corp., Marubeni Corp., Mitsui & Co. Ltd., Nissho Iwai Corp., Okura & Co. Ltd., Toyo Menka Kaisha Ltd., Wako Shokuryo Co. Ltd. Address: Ontario, Canada.

505. Hasegawa, Kiyozo; Mukai, K.; Gotoh, M.; Honjo, S.; Matoba, T. 1987. Determination of the lysinoalanine content in commercial foods by gas chromatography-selected ion monitoring. *Agricultural and Biological Chemistry* 51(11):2889-94. Nov. [21 ref]

• **Summary:** Table 1 (p. 2892), titled "Lysinoalanine content in foods," includes values for various soybean products: The lysinoalanine (LAL) content (in mg per 16 gm of nitrogen) was measured by two methods: GC-SIM (gas chromatography-selected ion monitoring) and HPLC (high performance liquid chromatography). The two values for the soy products are: Soy milk A (0/0), soy milk B (6/14), soy milk C (6/18), wet soybean film (fresh / nama yuba) A (0/0), fresh yuba B (13/16), dry yuba (18/11), fried soybean curd (abura-age = tofu pouches) A (8/6), fried soybean curd B (9/trace).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "soybean film" or the term "wet soybean film" to refer to yuba.

Of the samples analyzed, the lysinoalanine content was highest in pidan (fermented egg). Wheat flour-based products (Chinese noodles, pretzels and crackers) and milk products (condensed milk and lactic acid beverages) also contained a significant amount of LAL. Cow's milk, soy milk, soy protein isolate and meat products (ham and Hamburg steak) contained a low amount of LAL. Results confirmed that the low-level LAL formation was possible in foods cooked at home without any alkaline treatment.

Note: The three types of soymilk were purchased from retail stores in Nara, Japan. Address: Dep. of Food Science & Nutrition, Nara Women's Univ., Nara 630, Japan.

506. Iwane, Atsuko; Yasui, Takeshi; Tsutsumi, Chuichi. 1987. [Changes in low molecular weight carbohydrates in yuba (soymilk skin) during yuba-film formation]. *Shokuhin Sogo Kenkyujo Kenkyu Hokoku (Report of the National Food Research Institute)* No. 51. p. 115-17. Nov. [6 ref. Jap; eng]

• **Summary:** Fourteen yuba films, successively produced by a yuba manufacturer in Kyoto, were purchased and grouped into 8 fractions in order of film formation, from first to last. The carbohydrate composition of each of the 8 fractions was determined by gas-liquid chromatography. Sucrose and stachyose were the major sugars in the skins, followed by

raffinose. The sucrose, raffinose, and stachyose contents of the first and last formed films were 1.42% and 8.03% [5.65 times as much], 0.21% and 0.35%, and 1.97% and 7.17% on a dry basis, respectively. Because of these high solubility of those sugars, they are increasingly concentrated in the residual soymilk, and their content in the films increased gradually as the film formation process proceeded.

Reprinted from *Nihon Shokuhin Kogyo Gakkai Shi (J. of Food Science and Technology)* 33(11):783-85 (1986). Address: National Food Research Inst.

507. Downes, John. 1987. *Soy source: A practical guide to cooking with soy foods*. Chatswood, NSW, Australia: Nature and Health Books. Co-published in 1987 by Prism Press, 2 South Street, Bridport, Dorset DT6 3NQ, England. Distributed in the USA by Avery Publishing Group. 127 p. No index. 22 cm. [21 ref]

• **Summary:** Contents: Introduction, Nutrition & Soyfoods, Ingredients & Techniques, Glossary, Appetizers & Dips, Marinades & Accompaniments, Soups, Soup Noodles, Main Courses, Salads & Dressings, Desserts, Bibliography. A cookbook containing very little information about soyfoods in Australia. The author was born in 1949. Address: Australia.

508. Newman, Jacqueline M. 1987. *Chinese cookbooks: An annotated English language compendium / bibliography*. New York & London: Garland Publishing, Inc. x + 324 p. Author index. Title index. Artist index. 23 cm. [732* ref]

• **Summary:** A superb work, based on years of interest in this specialized field. The annotations for each work are informative and well written. The entries are listed alphabetically by author; we think a chronological listing would be more interesting. Unfortunately there is no subject index, so one cannot find (for example) which books mention bean curd (tofu), bean curd sheets (yuba), soy sauce, fermented black beans (fermented black soybeans), etc. Address: Dep. of Home Economics, Queens College of the City Univ. of New York, 65-30 Kissena Blvd., Flushing, NY 11367. Phone: 718-520-7219.

509. Sonntag, Linda. 1987. *The little tofu book*. London: Judy Piatkus (Publishers) Ltd. 60 p. Illust. by Trevor Newton and Hanife Hassan. No index. 16 cm.

• **Summary:** Contents: What is tofu? Storing tofu. What to do with tofu. Tofu recipes. Dips and spreads. Tofu, the wonder health food. The food for the future. Tofu slimmers. Making your own tofu. The bonuses of making tofu: Go, okara, soya bean milk, yuba, whey. Tofu in Japan. Tofu in Indonesia. Tofu in China. Miso. Other titles in the series. Note: This book draws heavily on *The Book of Tofu* by Shurtleff and Aoyagi. Address: England.

510. Terajima, Ryōan. comp. 1987. *Wakan sansai zue 7*

[Collection of Japanese and Chinese diagrams and drawings of all things]. Tokyo: Heibonsha. 442 p. 18 cm. Series: Toyo bunko, no. 471. Toyo Pocket Library series. [Jap]*

• **Summary:** See Terajima 1711 (or 1713). This is a translation into modern Japanese, with a title slightly different from that of the original. There have been at least 3 different editions over the centuries, most recently in 1907, 1929, and 1980 on. The set published by Heibonsha was published in 16 volumes from 1980 (vol. 1) to 1990 (vol. 16). This Vol. 7 was chosen at random as one example. We do not know which volume (or volumes) contains the information on soy. Address: Physician.

511. Golbitz, Peter. 1988. *Whole bean soy products*. In: L. McCann, ed. 1988. *Soybean Utilization Alternatives*. St. Paul, MN: Univ. of Minnesota Center for Alternative Crops and Products. vi + 429 p. See p. 325-31.

• **Summary:** Discusses: Tofu. Soymilk. Yuba or soymilk film. Fresh green soybeans. Whole dry soybeans. Soynuts. Soy sprouts. Tempeh. Soy sauce. Miso. Address: Soyatech, Bar Harbor, Maine.

512. Lee, Ken. 1988. *New developments with yuba at Soyfoods of America (Interview)*. *SoyaScan Notes*. April 20. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ken's yuba business is now profitable. His yuba is sold mostly to Chinese restaurants, all over the United States. His prices are higher than those of imported yuba, but they are dried and his is fresh, frozen—so his quality is better. He makes 6,000 sheets a day on average. Address: 1091 E. Hamilton Rd., Duarte, California 91010. Phone: 213-681-5393.

513. Shurtleff, William; Aoyagi, Akiko. 1988. *Das Tofu-Buch: Herstellung, Verwendung, Ernährungs-wert, Rezepte* [The book of tofu: Preparation, uses, nutritional value, recipes]. Munich, West Germany: Goldmann Verlag. 384 p. Illust. by Akiko Aoyagi Shurtleff. Index. 18 cm. [Ger]

• **Summary:** A pocket book edition of the original 1980 German edition of *The Book of Tofu*. Contains 300 recipes. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

514. Lee, Ken. 1988. *New developments with yuba, soymilk, and tofu at Soyfoods of America (Interview)*. *SoyaScan Notes*. Aug. 29. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Soyfoods of America started production in Nov. 1981, making yuba, soymilk, and tofu. Of the yuba, 90% is fresh frozen sheets and 10% is dry sticks. This company is the only maker of fresh yuba in America and he ships it nationwide, to Houston, Dallas, Seattle, Chicago, etc. It is sold mostly to the Oriental market but also to a few health foods restaurants such as Healthys in Hawaii, and Orean.

All imported yuba is dried. It takes 3 months to get here and usually contains preservatives, bleach, and dyes. His prices is 4 times the imported product but he still can't keep up with demand. He now has 4 workers, working 2 shifts. They make 240 cases/week with 200 sheets/case = 48,000 sheets/week. It is all hand-made now but he may automate. Of the company's total sales, 50% is soymilk, 30% is tofu, and 20% is yuba. The soymilk is sold mostly to Chinese, Vietnamese and other Asian-Americans. They are going to make a soymilk without beany flavor. They sell 150 cases/week of half-gallon bottles of soymilk to Price Club. Spicy Tofu and Tofu Noodles were introduced in Jan. 1984. The brand "Furama" means "fortune" as in "good fortune." Address: 1091 E. Hamilton Rd., Duarte, California 91010. Phone: 213-681-5393.

515. Karta, Susani K. 1988. Market trends in the development of traditional soyfood. Paper presented at the ASEAN Food Conference '88: Food Science and Technology in Industrial Development. 18 p. Held 24-26 Oct. 1988 at Bangkok, Thailand.

• **Summary:** Contents: Introduction. Traditional soyfood. Market situation and trends. Indonesia. Singapore. Malaysia. Thailand. Constraints in the market development of soyfood (in each of the above 4 nations). Major trends in the development of traditional soyfoods. Marketing strategy of soyfood. Tables: 1. Traditional non-fermented soyfood products. 2. Nutritional composition of traditional non-fermented soyfoods. 3. Description and uses of traditional fermented soyfood products. 4. Nutritional composition of traditional fermented soyfoods.

5. 1987 estimated consumption of soybeans as foods in the Far East [total and per capita in East Asia]. China, 1,062 million population, 7,325,000 tonnes, 6.9 kg/capita. Japan, 122 million population, 1,141,000 tonnes, 9.3 kg/capita. South Korea, 42.1 million population, 330,000 tonnes, 7.8 kg/capita. Taiwan, 19.6 million population, 260,000 tonnes, 13.3 kg/capita.

6. Southeast Asia soybean consumption for food. From 1983 to 1989 the increase in 1,000 metric tons was: Indonesia 927 to 1,600. Singapore 14 to 26. Malaysia 32 to 70. Thailand 40 to 150. Philippines 9 to 24. Total 1,022 to 1,870 (increase of 82.9% in 7 years).

7. Per capita soybean consumption for food in Southeast Asia. From 1983 to 1989 the increase in kg/person was: Indonesia 6.0 to 8.8. Singapore 5.6 to 10.5. Malaysia 2.1 to 3.7. Thailand 0.8 to 2.6. Philippines 0.2 to 0.5. Average total: 3.8 to 5.9 (increase of 55.3% in 7 years).

8. 1987 estimated consumption of soybeans as foods in Southeast Asia [total and per capita]. Indonesia, 175 million population, 1,575,000 tonnes, 9.0 kg/capita. Thailand, 53.6 million population, 118,000 tonnes, 2.2 kg/capita. Malaysia, 16.1 million population, 55,000 tonnes, 3.4 kg/capita. Singapore, 2.6 million population, 20,000 tonnes, 7.7 kg/

capita. Philippines, 61.5 million population, 18,000 tonnes, 0.3 kg/capita.

9. Indonesian soybean production, imports, and consumption as food (in tonnes). From 1983 to 1989, production rose from 536,000 to 1,250,000, imports decreased from 391,000 to 350,000, and the amount consumed as food increased from 927,000 to 1,600,000. About 50% of the soybeans used for foods in Indonesia go to make tempeh, and 40% are used to make tofu.

10. Singapore soybean consumption as food. From 1983 to 1989 the amount increased from 14,000 tonnes to 26,000 tonnes. Most of these soybeans are used to make tofu and soymilk. 11. Malaysia soybean imports and consumption as food (in tonnes). From 1983 to 1989, production rose from 182,000 to 440,000, and the amount consumed as food increased from 32,000 to 70,000. 12. Thailand soybean production, and consumption as food (in tonnes). From 1983 to 1989, production rose from 113,000 to 490,000, and the amount consumed as food increased from 40,000 to 150,000. Only in 1988 were soybeans imported—40,000 tonnes. This growth of soyfood consumption is due partially to the Government of Thailand's interest in promoting the awareness and utilization of soyfood products. The Thailand Agricultural Extension Service program and other institutions have been actively advocating of soyfoods into the food industry and the human diet, especially in rural areas. The government controls soybean imports by issuing licenses.

In summary: The soybeans with the highest per capita soybean consumption for soyfoods are: Taiwan 13.3 kg, Japan 9.3 kg, Indonesia 9.0 kg, Singapore 7.7 kg, South Korea 7.3 kg, and China 6.9 kg. The greatest potential for growth lies in China, where it is very common to find markets running out of soyfoods early in the morning. There is also great potential for growth in Malaysia, Thailand, and the Philippines. Address: American Soybean Assoc., 541 Orchard Rd., #11-03 Liat Towers, Singapore 0923, Republic of Singapore.

516. Hagler, Louise; Bates, Dorothy R. eds. 1988. The new Farm vegetarian cookbook. Summertown, Tennessee: The Book Publishing Co. 223 p. Illust. Index. 23 cm.

• **Summary:** A slightly revised edition of the 1978 Farm Vegetarian Cookbook, this vegan cookbook contains a wealth of soyfoods recipes, and no recipes calling for eggs or dairy products. Address: Summertown, Tennessee.

517. Beddows, C.G. 1988. The old fashioned way with soya. *Food Science & Technology Today* 2(1):12-15. [6 ref]*

• **Summary:** The following soybean products are described briefly: soymilk, bean curd, tofu, tempeh, natto, sufu, miso, shoyu, and yuba. Protein yields are given for a range of plant crops versus milk and beef, e.g. soybeans 3500 kg/ha/annum versus 75 kg/ha/annum for beef. Recipes are included for

miso cream cheese dip and deep fried tofu and miso soup. The marked rise in consumption of soybean products in the USA in recent years is noted. Address: Dep. of Applied Sciences, Leeds Polytechnic, Leeds LS1 3HE, England.

518. Cost, Bruce. 1988. *Asian ingredients: Buying and cooking the staple foods of China, Japan and Southwest Asia*. New York, NY: William Morrow & Co. 333 p. Illust. Index. 27 cm. [39 ref]

• **Summary:** Soy related: Soybean sprouts and recipe (p. 86). Beans, incl. soybeans (p. 146-50). Asian “dairy” (p. 186-87): The soybean and the coconut (incl. bean curd, doufu-nao, fermented bean curd / fu-ru, molded bean curd / chou dou-fu, dried bean curd / dou-fu gan, and bean curd skin [yuba]. Soybean milk.

Soybean sauces, condiments and pastes (p. 195-211): Salted and fermented black beans with recipes for “Roast chicken with black beans stuffed under the skin,” and “Soft-shell crabs with ginger, lemon, and black beans” (“Fermented black beans, often flavored with bits of ginger and sometimes orange peel, are usually sold in 8-ounce plastic bags.” Acceptable brands: Mee Chun or Koon Chun Sauce Factory. “Earthier and probably more classic are the Yang Jiang Preserved Beans (with ginger) from Kwangtung, China), bean sauce (other names: Yellow bean sauce, brown beans sauce, bean paste, jiang; two types are with the beans whole or ground), hot bean sauce / paste with recipe, hoisin sauce, sweet bean sauce (made with soybeans [probably tian mian jiang, p. 202], Taiwan), soy sauce (Chinese, Japanese, tamari; Highly recommended light soy sauce: Pearl River Bridge. Highly recommended dark: Pearl River Bridge Mushroom Soy, flavored with straw mushrooms), Java’s ketjap and other soy sauces miso with recipe, yellow miso (*Shinshu miso*), white miso (*shiro miso*, *Kyoto shiro miso*, sweet white miso), red miso (*aka miso*), Hatcho miso [soybean miso], barley miso (*mugi miso*), fermented bean curd (white or red; also called preserved bean curd, wet bean curd, bean cheese, dou-fu ru or fu-ru {Mandarin}, fu yu {Cantonese}) with two recipes).

“Red fermented bean curd” is described on pages 210 (also called “red bean cheese”), 211, and 283 (together with “red rice”).

Concerning ketjap (p. 206): Tomato ketchup, although it may seem to be of Asian origin, may or may not come from a family of Asian pickled products. But the word “ketchup” is clearly of Asian origin. [Note: The modern Indonesian word for soy sauce is *kecap* / *ketjap* / *kechap*.] “It comes from the Malay *kechap*, which apparently derives from the *kôe-chiap* of a southern Chinese dialect (Amoy); both of these refer to the kind of briny liquid preserves that include fish and soy sauces.” Throughout most of Southeast Asia, fish sauces are the standard condiment, in Indonesia (incl. Java) soy sauce is more widely used. Sweet Indonesian soy sauce (*ketjap manis*), which is very widely used, is traditionally sweetened

with palm syrup and seasoned with garlic, star anise, salam leaves, and galangal.

Also discusses: Seaweed (p. 165-70): Kelp (*Laminaria*), laver (*Porphyra*), wakame, dashi, hair vegetable / black moss / hairlike vegetable (China; *Gracilaria verrucosa*), agar-agar. Monosodium glutamate (p. 247)

Bruce Cost was born in 1945. A photo and brief biography appears on the inside rear dust jacket. Address: [San Francisco, California].

519. Leneman, Leah. 1988. *Soya foods cookery*. London and New York: Routledge & Kegan Paul. ix + 145 p. Illust. Index. 20 cm.

• **Summary:** Contents: Introduction. Recipes—1. Soya milk: Soya milk, soya yogurt, soft cheese [made from soya yogurt], and mayonnaise, soya milk skin (yuba). 2. Tofu: Tofu, frozen and dried-frozen tofu, smoked tofu. 3. Tempeh. 4. Miso. 5. Combi-dishes: Tofu and miso, tempeh and tofu.

An introduction to the subject, with more than 100 recipes. Almost half the book is devoted to tofu and tofu recipes. The author, born in the USA, has lived in Britain for more than 20 years. She was once assistant editor of *The Vegetarian*, and also worked at Cranks Restaurant (on Marshall St. in London W1). Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

520. Moriyama, Yukiko. 1988. *A taste of tofu: Mastering the art of tofu cooking*. Tokyo: Joie. c/o JP Trading Inc., 300 Industrial Way, Brisbane, CA 94005. 104 p. Illust. Index. 27 cm.

• **Summary:** A beautiful book, with the steps and ingredients in every recipe illustrated with color photos. Contents: Introduction. Basic cooking information. Ingredients. Recipes—Appetizers. Soups. Just tofu. Seafood. Poultry. Meats. Vegetables. Salads. Eggs and cheese. Rice and noodles. Desserts. Information. Glossary of ingredients. The author lives in Tokyo. Address: Tokyo, Japan. Phone: JP Trading: 415-468-0775.

521. Thompson, Martha Gifford. 1989. *Early work with tofu at Rochester Zen Center (Interview)*. *SoyaScan Notes*. April 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The staff of 30-50 people in the Zen Center kitchen prepared strictly vegetarian meals. Kapleau roshi at that point had a dairy allergy, so very few dairy products were used in the meals. The diet was almost a vegan one. The Toronto Zen Center, was an affiliate group nearby in Canada. In Toronto, which has a large Asian population, were at least three tofu shops: one very small family-run Korean shop on Baldwin Street (which is no longer there), one on Avenue Road (perhaps Chinese run), and a third on Dundas Road. A member of the kitchen staff would make the 2½ hour trip to Toronto, go the shop on Baldwin Street (which had no name) to buy tofu. “The first room was

stacked to the ceiling with soybeans. Down in the basement were many people slogging around making tofu. It was quite a scene, and nobody spoke any English. At that point we realized that we could make tofu ourselves. The trip to Toronto was always a hassle. You always got stopped at the border; they always thought you were smuggling something. Jay Thompson took the lead in setting up tofu making facilities. Kapleau roshi was very excited about and supportive of the project, in part because he had practiced for so long in Japan, and in part because he likes projects, right livelihood, and soyfoods. Once the shop was set up in the basement, we also made a lot of soymilk, yuba, and soy yogurt, and served spicy curds; we tried everything! The tofu shop of course never received any financial support from Zen Center.” Address: Rochester, New York. Phone: 716-461-5388 Home.

522. Thornbury, Barbara E. 1989. A feast of tofu in Tokyo and Kyoto. *New York Times*. June 11. p. XX6, XX37. Late edition (East Coast).

• **Summary:** Describes three Japanese restaurants that feature tofu, one of the key ingredients in Japanese cooking: (1) Sasanoyuki in Tokyo has a history of more than 300 years. Its name means “snow on bamboo leaves.” (2) Goemon in Tokyo. (3) Okutan—best known for its simmering pots of yu-dofu—in Kyoto.

Note: These restaurants are also described in *The Book of Tofu*, by Shurtleff and Aoyagi, however the present description has updated prices. Address: Princeton, New Jersey.

523. Karta, Susani K. 1989. Traditional Chinese soyfood. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists’ Society. xii + 575 p. See p. 382-87. [18 ref]

• **Summary:** Contents: Abstract. Introduction. Variables in manufacturing tofu: Soybean variable, processing variable, maceration and extraction (soaking and grinding) stages, filtration and heating stages, coagulation stages, types and concentration of coagulants used in tofu manufacturing. Tofu products.

Tables: (1) Chinese nonfermented soy food products. Five columns show: Food items, Chinese names, organisms used, description, uses. The soy foods are: Fresh green soybeans (*mao-tou*). Toasted soy powder (*tou-fen*). Soy sprouts (*huang-tou-ya*). Soy milk (*tou-chiang*). Soy milk film / yuba (*tou-fu-pi*). Soybean curd (*tou-fu*).

(2) Chinese fermented soy food products. Five columns (same as table 1) The soy foods are: Fermented whole soybeans (*tou-shih*). Soy sauce (*chiang-yu*). Soy paste (*chiang*). Fermented tofu (*so-fu [sic]*). Actinomucor or Mucor molds are used. Description: Creamy cheese, mild flavor, salty. Uses: Relish, also cooked with meat or

vegetable.

(3) 1987 consumption of soybeans as foods in Asian countries. The results are presented here in descending order of per capita consumption: Per capita soybean consumption, country (population), total soybean consumption in 1,000 tonnes. 13.3 kg/capita, Taiwan (19.6 million), 260,000 tonnes. 9.3 kg/capita, Japan (122.2 million), 1,141,000 tonnes. 9.0 kg/capita, Indonesia (175 million), 1,575,000 tonnes. 7.8 kg/capita, South Korea (42.1 million), 330,000 tonnes. 7.7 kg/capita, Singapore (2.6 million), 20,000 tonnes. 6.9 kg/capita, China (1,062 million), 7,325,000 tonnes. 3.4 kg/capita, Malaysia (55 million), 55,000 tonnes. 2.2 kg/capita, Thailand (53.6 million), 118,000 tonnes. 0.3 kg/capita, Philippines (61.5 million), 18,000 tonnes.

(4) Nutritional composition of traditional nonfermented foods: Fresh green soybeans, toasted soy powder, soy sprouts—raw, soy milk, soy milk film / yuba, tofu (Source: *Food Composition Table for Use in East Asia*, 1978). (5) Nutritional composition of traditional fermented foods: Fermented soybeans [tou-shih], soy sauce, soy paste [doujiang], fermented tofu (Source *Food Composition Table for Use in East Asia*, 1978).

In China, fried tofu is called Tou-Pok. Address: American Soybean Assoc., 541 Orchard Rd., #11-03 Liat Towers, Singapore 0923, Republic of Singapore.

524. Zai-Chun, Shen; Jing-Kuan, X.; Xue-Li, J. 1989. Novel soybean food in China. In: T.H. Applewhite, ed. 1989. Proceedings of the World Congress on Vegetable Protein Utilization in Human Foods and Animal Feedstuffs. Champaign, IL: American Oil Chemists’ Society. xii + 575 p. See p. 559.

• **Summary:** “A new process is described for producing a sheet-like food using full-fat and defatted soybean flours. The product is tasty and inexpensive; its tenderness, softness and toughness can be controlled in cooking.” Address: 1. Dep. of Agricultural Products and Processing Engineering, Beijing Agricultural Engineering Univ., Qinghua Donglu, Beijing, China; 2. ChangChun Power Component Factory, ChangChun City, Jilin province, China; 3. Tong Xian Machinery Factory, Beijing, China.

525. Song, Ed. 1989. Yuba in Taiwan and the San Francisco Bay Area (Interview). *SoyaScan Notes*. Sept. 7. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ed was born and raised in Taiwan, and has a PhD in electronics. There are two basic types of yuba in Taiwan: Toufu-p’i is the thin sheets which are the first to be removed. They are considered the highest quality. Fu-zhu are the thicker (3-5 times as thick), darker, sweeter sheets that are removed later. Fu-zhu may be sold in the form of either rolled sticks or dry sheets.

Each month the San Francisco Bay Area imports five 40-foot containers of dry yuba from Hong Kong. This is

equivalent to consumption of about 1,000 kg/day of dry yuba. Address: Walnut Creek, California. Phone: 943-7411.

526. Johnson, Dale W. 1989. General uses of whole soybeans. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. *Food Uses of Whole Oil and Protein Seeds*. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 12-29. Chap. 2. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [35 ref]

• **Summary:** Contents: Introduction: Introduction. Oriental nonfermented products: Yuba, kinako Thai desserts (tofu guan, med khaonon), Thai foods (protein crisp, cooked baby food, canned evaporated soybean milk, taow-huey, kanom ping kaset). Fermented foods: Natto, hama-natto, tao tjo (a miso-type product made in Indonesia and Thailand), ontjom (made from peanuts, coconut press cake, or okara), kochu chang, ketjap, sufu, yogurt-type products, tauco, soy sauce, miso, tempeh. Western world type products. Full fat soy flour (enzyme active, heat treated). Soybean hulls. Whole soybeans in animal feed. Chapatty [chapati]. Full fat soy grits. Heat treatment of soybeans. Heat treatment and texturizing. Low-fat products. Snacks (soynuts—dry roasted or oil roasted, plain or seasoned). Soybean sprouts. Soy butter [soynut butter]. Combinations of soybeans and cereals. Soybeans as vegetables (mao-tou, edamame, or fresh green soybean). Defatted products. Nutrition. Soybean handling and equipment considerations. Solvent plant considerations. Address: Food Ingredients (Minnesota) Inc., 2121 Toledo Ave. North, Golden Valley, Minnesota 55422.

527. Liu, Fu-Kuang. 1989. Food uses of soybeans [in China]. In: E.W. Lusas, D.R. Erickson, and Wai-Kit Nip, eds. 1989. *Food Uses of Whole Oil and Protein Seeds*. Champaign-Urbana, IL: American Oil Chemists' Society. vii + 401 p. See p. 148-58. Chap. 10. Proceedings of the Short Course on Food Uses of Whole Oil and Protein Seeds held at Makaha, Hawaii, May 11-14, 1986. [7 ref]

• **Summary:** Contents: Introduction. Processing of tofu and soybean products: Manufacture of tofu and soybean products (tofu, bei ye {pressed tofu sheets}, su ji {vegetarian chicken, made from bai ye}, you-tofu {fried tofu}, tofu pi {yuba}, soybean sprouts {dou ya}).

Fermented soybean products: Soybean jiang (dou jiang in China or miso in Japan), fermented soybeans (touchi), tofu lu (fermented tofu). Discussion.

Tables show: (2) Comparison of the essential amino acid composition of soybean milk with cow and human milk. (3) Amino acid composition and nutritive value of various soybean fractions: Meal, hulls, milk, residue [okara], curd, whey protein. (4) Composition of soybean pressed tofu sheet and residue. The pressed tofu sheets contain 70.4% moisture, 17.55% protein (59.29% moisture on a dry weight basis), and 7.10% fat (24.32% fat on a dry weight basis). (5) Amino

acid composition of defatted soybean, pressed tofu sheet and residue.

(6) Composition of tofu and tofu pi [yuba] (based on Watanabe 1969). (7) Vitamin content of soybean products: Immature bean [green vegetable soybean], mature bean [whole dry soybeans], sprouts, meal, flour, curd (tofu), milk, miso.

Figures show: (1) Flow sheet for manufacturing soybean curd [tofu]. Address: Wuxi Light Industry Inst., Wuxi, Jiangsu 214036, The Peoples' Republic of China.

528. Shurtleff, William; Aoyagi, Akiko. comps. 1989. *Bibliography of yuba: 161 references from 1587 to 1989, partially annotated*. Lafayette, California: Soyfoods Center. 56 p. Subject/geographical index. Author/company index. Printed Sept. 1. 28 cm. [161 ref]

• **Summary:** This is the most comprehensive bibliography ever published on yuba. It is also the single most current and useful source of information on this subject available today, since 57% of all references (and most of the current ones) contain a summary/abstract averaging 122 words in length.

One of more than 40 bibliographies on soybeans and soyfoods being published by the Soyfoods Center, it is based on historical principles, listing all known documents and commercial products in chronological order. Containing 37 different document types (both published and unpublished, including many original interviews and partial translations of Japanese and European works), it is a powerful tool for understanding the development of this subject and related products from its earliest beginnings to the present, worldwide.

Compiled one record at a time over a period of 15 years, each reference in this bibliography features (in addition to the typical author, date, title, volume and pages information) the author's address, number of references cited, original title of all non-English publications together with an English translation, month and issue of publication, and the first author's first name (if given).

Details on how to use the bibliography, a complete subject and geographical index, an author/company index, and a bibliometric analysis of the composition of the book (by language, document type, year, leading countries, states, and related subjects) are also included. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 415-283-2991.

529. *SoyaScan Notes*. 1989. Influence of Japanese and Japan on soyfoods in America (Overview). Dec. 7. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** The Soyfood Center's SoyaScan database presently contains 30,790 publications and commercial products related to soya. Of these, 876 (2.9%) concern the influence of Asian-Americans (Japanese, Chinese, Koreans, or Indonesians) or their home countries on soyfoods. Of

these 876 records, 638 (73%) concern Japanese influence, compared with 178 (20%) that concern Chinese influence—including Chinese from Taiwan, Hong Kong, Singapore, etc. Thus Japanese influence on soyfoods in America is much greater than that of any other Asian cultural group. We can identify at least seven major areas of influence:

1. Soyfoods Terminology. It is interesting to note that many of the most popular soyfoods in America are most widely known by their Japanese names. We say tofu (not doufu or bean curd), miso (not jiang or soybean paste), natto, okara (not soy pulp), yuba (not doufu-p'i or soybean skin). Even "soy" (as in soy sauce) is derived from the Japanese word "shoyu." Increasingly Americans interested in natural foods also use the terms shoyu and tamari to distinguish them from HVP soy sauce.

2. Kikkoman. By far the most influential Japanese soyfoods company in America today is Kikkoman, just as soy sauce is by far the most important soyfood product. Kikkoman was also the first Japanese company to introduce soyfoods to America. In 1868 the first Japanese immigrants to Hawaii took kegs of Kikkoman brand shoyu with them. In 1879 Kikkoman brand shoyu was registered in California, where it was exported to Japanese immigrants. Exports rose steadily, until between 1949 and 1954 exports of Kikkoman shoyu to the U.S. ranged from 213,000 to 305,000 gallons a year. Kikkoman's first real attempt to reach any foreign market dates from 1956 when, during the U.S. presidential elections, Kikkoman ran television ads to promote its product to mainstream American audiences as a seasoning for meat, fish, and poultry. In 1957 Kikkoman International Inc., a new sales company was established in San Francisco. Sales skyrocketed. In 1973 Kikkoman opened a huge modern shoyu plant at Walworth, Wisconsin. In 1976 Kikkoman passed La Choy to become America's best-selling soy sauce.

3. Introducing Soyfoods to Hawaii. The first Japanese who arrived in Hawaii in 1868 brought shoyu and miso with them. The earliest known soyfoods company there was a shoyu brewery started in 1891 in Honolulu by Jihachi Shimada. This was also the earliest known soyfoods company started by a Japanese anywhere in the Western world. Hawaii became part of the USA in 1898 by annexation. Hawaii and California were the first two areas in the U.S. where soyfoods became widely available. During the 20th century, Japanese started roughly 183 companies in Hawaii making shoyu, miso, and tofu—far more than Chinese (6) or Koreans (2). They developed innovative new products—such as sweet Hawaiian-style shoyu and miso. These products profoundly influenced the food life of Hawaii.

4. Soyfood Manufacturers in the USA. The earliest known soyfoods manufacturer in the Continental USA was a company (the name is unknown) run by the wife of Chieko Hirata that started making tofu in Sacramento in about 1895. The second earliest was Yamamori Jozo-sho,

which started making shoyu in San Jose, California, in 1897. Many of the earliest soyfoods companies in America were run by Japanese Americans. By 1942 at least 158 soyfoods manufacturing companies had been started in America by Asian Americans; of these, 143 (91%) were run by Japanese Americans. When *The Book of Tofu* was published in 1975, it listed 55 tofu companies in America, all run by Asian-Americans; 39 were Japanese- and 16 were Chinese-run. Today America's two largest tofu companies are both run by Japanese Americans: Azumaya Co. in San Francisco, and House Foods & Yamauchi Inc. in Los Angeles. Hawaii's three largest tofu companies are also run by Japanese Americans: Aloha Tofu Co., Kanai Tofu Factory, and Hawaii Tofu. Morinaga Nutritional Foods in Los Angeles and Kikkoman Foods in San Francisco both import large amounts of aseptically packaged long-life silken tofu from Japan.

Another major manufacturer is San-Jirushi Corp. of Kuwana, Mie-ken. In the late 1970s San Jirushi started exporting tamari and soybean miso to America. They set up an office in the early 1980s and began to promote their product as "real" tamari to industrial food processors and the natural foods market. In Sept. 1987 the company opened a state-of-the art tamari plant in Richmond, Virginia, with a capacity of 1 million gallons a year. The company now has 75% of the industrial soy sauce market in America.

In Oct. 1986 a major new joint stock company named American Soy Products began producing Edensoy soymilk in Clinton, Michigan. It was a joint venture between Eden Foods and 4 Japanese companies: Marusan Ai, Kawatetsu Shoji, Muso Shokuhin, and Seikensha. Edensoy has since become America's best-selling soymilk. Prior to 1986 much of the soymilk sold in America was made in Japan.

Finally, three of America's 4 largest miso manufacturers are run by Japanese-Americans. The largest is Miyako Oriental Foods in Los Angeles. The other two are located in Hawaii.

5. Soyfoods Imports from Japan. The first importers of shoyu and miso were Japanese distributors such as Japan Foods Corp., Mutual Trading Co. and Nishimoto. But starting in 1962 American macrobiotic and natural foods companies started to import large amounts of shoyu and miso. Pioneers were Chico-San, Erewhon, Eden Foods, Westbrae, Edward & Sons, Tree of Life, and Great Eastern Sun. U.S. imports of soy sauce from Japan jumped from 1.7 million lb (174,400 gallons, worth \$317,000) in 1949, to 18.6 million lb (1,897,000 gallons, worth \$3,116,000) in 1972, an 11-fold increase in quantity during only 23 years.

6. Teachers and Information. Many Americans first learned about soyfoods from Japanese teachers, especially macrobiotic teachers, such as George and Lima Ohsawa, Michio and Aveline Kushi, Herman and Cornelia Aihara, and Noboru Muramoto. All have written many influential books and lectured and taught extensively since the 1960s.

In addition, many young Americans learned how to *make* soyfoods from these macrobiotic teachers. Moreover, Japan is Asia's best source of information about soyfoods. For example, the Soyfoods Center's SoyaScan database contains 5,095 publications and products about soya and Japan, compared with 1,867 on soya and China or Taiwan.

7. Tofu Equipment Manufacturers. Hundreds of tofu companies have started in America since the mid-1970s. The majority of these are run by Caucasian Americans and most use specialized tofu equipment made in Japan by Takai Tofu & Soymilk Equipment Co., or by Sato Shoji.

530. Krieger, Verena. 1989. Soja als Nahrungsmittel: genutzt oder missbraucht? [Soya as a food: Used or misused?]. *Zum Beispiel (Switzerland)* No. 12. p. 15-17. Dec. 21. [Ger]

• **Summary:** Soybeans can be fermented to make miso, soy sauce, tempeh, or natto. Or the protein can be extracted in traditional ways to make soymilk, tofu, or yuba. One can also make soy sprouts. In the Western world, soybeans are mostly misused to make high-protein meal for livestock fodder, and vegetable oil. Address: Lucerne, Switzerland.

531. Food & Agriculture Organization (FAO). 1989. Utilization of tropical foods: Tropical oil-seeds. Rome, Italy: Food & Agriculture Organization of the United Nations (FAO). xiv + 82 p. 21 cm. Series: FAO Food and Nutrition Paper 47/5. *

• **Summary:** The 1st chapter, titled "Leguminous oil-seed crops, has these contents: Soybean (p. 1-35): The golden bean from China, varieties and production, soybeans in the tropics. Hydrolysis of soybeans using microbial enzymes. Nutritional and acceptability aspects of soybeans: Cooking characteristics, soybean flavour, digestibility of soybeans. Soybean processing in eastern Asia: Fermentation of soybeans. Fermentation inoculants: Koji and ragi, angkak and masam [a green fermentation starter from Nepal, made from wheat and selected moulds], preparation of koji. Preparation of soy sauce: Traditional Japanese shoyu, other types of soy sauce. Fermented soybean pastes: Types of miso, preparation of miso koji, preparation of mame miso, preparation of hamanatto. Other fermented soybean products: Natto and thua nao. Indonesian tempe: Preparation of tempe ragi, production of tempe kedede, other types of tempe, domestic use and nutritional content of tempe. Foods fermented by molds: Role of moulds in food processing, food safety aspects. Non-fermented soybean products: Production of soy milk, improving soymilk flavour. Soybean protein products: Preparation of tofu, preparation of yuba. Soybean cheese products: Preparation of sufu ("The Chinese prepare a fermented soy curd called *sufu*, which resembles a moulded, soft-texture cheese." Red sufu is made using "red rice koji" (angkak)). Use of soy milk and tofu residues: Preparation of oncom tahu, preparation of meitauza. Use of soybean sprouts. Soybeans as a cash crop. Soybean as an oil-

seed: Problems of small-scale extraction. Solvent extraction of soybean oil: Economic aspects, extraction process, refining operations. Nutritional and organoleptic aspects of soybean oil. Commercial production of vegetable fats and oils: Solid shortenings, effects of hydrogenation, hardness of fats. Margarine production: Composition of margarine, manufacture of margarine. Production of soybean grits and flour. Commercial production of soybean protein products: Protein concentrates, protein isolates, economic aspects. Introduction of soyfoods at the village level: Snack foods, vegetable relish, pastes and flour. Preparation of soybeans at the village level: Reducing bitter flavours, preparation of soybean flour. Prospects for soybean products in the tropics.

Concerning the preparation of sufu (p. 21): "... the cubes [of tofu] are drained and heated for about 15 minutes at 100°C to sterilize them. The sterilized cubes are cooled, placed on trays, and inoculated with one of the following fungi: *Actinomucor elegans*, *Mucor lienialis*, or *Rhizopus chinensis* var. *chungyen*, depending on the type of 'cheese' to be produced. They are then incubated at 12-20°C for three to seven days. At that stage, the cubes become covered with a white mycelium and are known as *pehtzu* [pehtze].

"In the final stages, the cubes of *pehtzu* are transferred to ageing tanks, where they are immersed in a mixture of rice wine and salt, 2-5% sodium chloride, for forty to sixty days. The alcohol content of this 'dip' (approximately 10 percent) is much higher than that normally obtained by anaerobic fermentation using osmophilic [osmophilic] yeasts. The final product, after completing the ageing period, is soft and pale yellow, with a pleasant taste and aroma. It is often served with sesame oil. More pungent cheeses are prepared by related processes, by adding other components to the final brine solution. These may include red rice koji, fermented rice mash, anise or pepper. An outline of a preparation from Thailand, using red rice koji to give a red sufu is shown in Figure 3" (a flow sheet, p. 22; Source: Narudom Boon-Long. 1983. "Traditional fermented food products." United Nations University (UNU) Workshop Paper, CFTRI, Mysore, India).

The peanut from Peru (p. 36+).

532. Hoshijo, Kathy. 1989. Kathy cooks: Vegetarian, low cholesterol. New York, NY: Simon & Schuster (A Fireside Book). 728 p. Illust. Index. 24 cm.

• **Summary:** Previously published as *The Art of Dieting Without Dieting* (1986). A whopper of a cookbook, with 350 easy-to-prepare vegetarian recipes from the star of the PBS television series "Kathy's Kitchen"—which airs in 180 cities nationwide. Each recipe contains a detailed (full-page!) nutritional analysis.

This book contains a wealth recipes using tofu, tempeh, soymilk, miso, and whole soybeans.

533. South Yuba River Citizens League. 1989. Don't damn the yuba!! (Bumper sticker). P.O. Box 841, Nevada City, CA

DON'T DAMN THE YUBA!!

95959. 31 x 8 cm.

• **Summary:** This bumper sticker has blue lettering on white. The organization's name, address, and phone number are written across the bottom in smaller letters and their logo is to the left. Seen in Lafayette, California, in late 1989, it has nothing to do with the soyfood named yuba. It concerns only a proposed dam on the south fork of the Yuba River in California. T-shirts with the same message are also sold by this organization for \$10 each. The subtitle is "The river already gives us energy!" Address: Nevada City, California. Phone: 916-265-5526.

534. Miller, Bryan. 1990. Restaurants. *New York Times*. Jan. 26. p. C20.

• **Summary:** This is a restaurant review of Shun Lee Palace, 155 East 55th St., New York City. The atmosphere is luxurious and spacious. Mock duck is a light, nonspicy and intriguing dish: "essentially layers of fried tofu skin [yuba] that resemble the texture of duck skin (but not necessarily the flavor), served with hoisin sauce and scallions, like Peking duck." The flavor and texture, which are unusual, are loved by some people (such as the writer) and loathed by others.

535. Wang, Guangjian; Kuan, S.S.; Francis, O.J.; Ware, G.M.; Carman, A.S. 1990. A simplified HPLC method for the determination of phytoestrogens in soybean and its processed products. *J. of Agricultural and Food Chemistry* 38(1):185-90. Jan. [14 ref]

• **Summary:** Discusses the phytoestrogen content of soybeans, defatted soy meal, hard tofu, soft tofu, dry spiced tofu, soy milk skin (p. 189) / soy milk film (p. 188) [yuba], soy milk, soy sauce, hot soy paste, sweet soy paste [miso?], fermented tofu, soy sprouts (homemade), soy sprouts (grocery), daidzein, genistein, formononetin, coumestrol. Address: Natural Toxins Research Center, Food and Drug Administration, 4298 Elysian Fields Ave., New Orleans, Louisiana 70122.

536. Muso Shokuhin. 1990. [Pure heart: Muso general catalogue]. Otedori 2-2-7, Chuo-ku, Osaka 540, Japan. 88 p. Printed 1 July 1990. 30 cm. [Jap]

• **Summary:** This strikingly beautiful, full-color catalog, pictures and describes Muso's natural-food macrobiotic products in Japanese for the Japanese market—although the

title is written only in English. Includes many kinds of miso, shoyu (incl. Marushima Shoyu), black soybeans, yellow soybeans, kinako [roasted soy flour], seitan (in a jar from Marushima, p. 41; the product name is written as "Seitan" in large roman letters, then in smaller letters in katakana), San-Iku Foods canned products (Gluten Burger, Gluten Meat, Linketts, Soyees, Snack Joe; p. 41), yuba, gomoku nimame (cooked whole soybeans), many kinds of sea vegetables and related products, San-Iku Soyolac (8 different products), Marusan soymilk (5 different products; 3 are named mineral tou-jyan; the latter is the Chinese term for soymilk), macrobiotic books. Address: Osaka, Japan. Phone: 06-942-0343.

537. Sian, N.K.; Ishak, S. 1990. Effect of pH on yield, chemical composition, and boiling resistance of soybean protein-lipid film. *Cereal Foods World* 35(8):748, 750, 752. Aug. [11 ref]

• **Summary:** The weight of film (yuba or *fucuk*), a protein product consumed in Malaysia, increases when the pH of the soymilk reaches 2.0. At the time of the formation of the film, the content of protein, carbohydrates, ash, and moisture increase, and the oil content decreases. The boiling resistance of the films to cooking in water decreased as the pH of the soy milk became more acidic (pH 2.0) or alkaline (pH 7.5, 9.0, 11.0) than its natural pH (6.7). Address: Dep. of Food Science & Nutrition, Faculty of Life Sciences, Univ. of Kebangsaan Malaysia, 43600 UKM, Bangi, Selangor, Malaysia.

538. Dacosta, Yves. 1990. Lait de soja et tofu [Soymilk and tofu]. APRIA/CDIUPA, 1 avenue des Olympiades, 91300 Massy, France. 102 p. Dec. No index. 30 cm. Series: Actualités Scientifiques et Techniques en Industries Agro-Alimentaires. No. 45. [85 ref. Fre]

• **Summary:** Contents: Preliminary remarks. 1. Production of soymilk and tofu: Principles of production, the soybeans, cleaning/washing, soaking, grinding, cooking the slurry (*bouillie*), extraction of the soymilk, coagulation, separation of curds and whey, pressing the curds, removal of the tofu from the mold, cutting and packing the tofu, the need for water in a tofu ship, variations in production, storage and preservation of soymilk and tofu after their production, yuba, production of tofu from seeds other than soybeans.

2. Applications/uses of soymilk and tofu: Products:

Soymilk and soymilk products (soymilk, sweetened soy beverages, dairylike soymilks, soy-based infant formulas, powdered soymilk, concentrated soymilks, soymilk mixed with other animal or vegetable milks, soy ice creams and frozen desserts, fermented soymilk products such as soy yogurt, various soymilk desserts [such as custards], sauces, dressings, and mayonnaises made from soymilk), tofu and tofu products (smoked tofu, fried tofu [*tofu frit*], marinated tofu, fermented tofu, breaded tofu, tofu mayonnaise and sauces, tofu spreads for bread, tofu sausages, pâtés, or biscuits/pancakes [*galettes*], tofu quenelles, quiches, fritters, raviolis, pizzas, mixed salads, prepared dishes (*plats cuisinés*), or sandwiches, tofu cakes, cheesecakes, or tarts, tofu desserts, ice creams, or chocolate bars), preparations based on okara (sausages, pâtés, croquettes, burgers, special breads or biscuits), the nutritional arguments for soymilk and tofu (rich in proteins, lipids, absence of cholesterol and lactose, low in sodium, an excellent ingredient in “light foods” [aliments allégés]).

3. A quick look at the major enterprises making and or selling soymilk, tofu, or their products in selected countries: France (Cacoja, Innoval, Soy [Société Soy], Sojadoc, Triballat, Celia, Celnat, Lima-Andiran, Maho Distribution, France-Proteines-Services), Great Britain (Plamil Foods Ltd., Itona Products Ltd., Soya Health Foods Ltd., British Arkady Co. Ltd. [subsidiary of ADM; incl. Haldane Foods Ltd., Regular Tofu Co., Tofeata Tofu], Granose Foods Ltd., Cauldron Foods, Dragon and Phoenix, Paul Jones (Tofu Shop), Full of Beans Soyfoods, Birchwood Health Products, White Waves, The Bean Machine Co-op Ltd., St. Ivel, St. Giles Foods Ltd., Yu’s Tofu Shop, Tousoy Ltd., Allied Foods Ice Cream Co., Nexus Foods, Vegetarian Feasts, Unisoy Milk and By-Products Ltd.), Germany (DE-VAU-GE Gesundkostwerk GmbH, Soyastern Naturkost GmbH, Nuxo-Werke Rothfritz), Netherlands (Heuschen-Schrouff, Linn Oriental Products, Solnuts B.V., Manna Natuurvoeding), Belgium (Alpro, Jonathan P.V.B.A., Lima Foods, De Hobbit, Seven Arrows), Switzerland (Conserves Estavayer S.A., Soyana, Galactina), Sweden (Trensums Musteri, Aros Sojaprodukter), Italy (Crivellaro), Spain (Zuaitzo), USA, Japan, Hong Kong, Taiwan, Singapore. Bibliography.

Note: A great deal of the information in this report is taken, without permission or adequate citation, from books published by the Soyfoods Center in California. The statistics and dates given for the European, American, and Asian markets are taken almost completely from Soyfoods Center books. In some cases where the author relied on these books published more than 2 years ago, the information is presented as if it were current, whereas it is actually out of date and no longer correct. Dacosta’s book, which might be called a “review of the literature,” contains little or no new information. However his bibliography, based largely on a search of the CDIUPA database, with some original

references, is quite good.

APRIA stands for Association pour la Promotion Industrie Agricole. APRIA administers CDIUPA. Address: Conseiller d’Entreprises, France: 47, rue Guersant–7015 Paris, France.

539. Shurtleff, William; Aoyagi, Akiko. 1990. Tofu & soymilk production. 2nd ed. Lafayette, California: Soyfoods Center. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Dec. 11. 28 cm. [223 ref]

• **Summary:** Contains many new advertisements, plus changes on the copyright page, on page 14 (Soyfoods Association is now located at Bar Harbor, Maine), and rear cover of both paperback and hardcover editions (new ISBN for each). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

540. Taira, Harue. 1990. Quality of soybeans for processed foods in Japan. *JARQ (Japan Agricultural Research Quarterly)* 24(3):224-30. Dec. [7 ref. Eng]

• **Summary:** Contents: Abstract. Introduction. Quality for food processing: Tofu, miso, natto. Variation of bean quality and suitability for processing. Factors inducing variations in the chemical composition and suitabilities for processing.

Figures show: (1) Consumption of soybeans in Japan in 1988 (1,000 tonnes): Total: 4,663 tonnes. Oil and meal 77%. Food 19%. Other 4%. Food products: 886 tonnes. Tofu and abura-age 57%. Kori-tofu 3%. Miso 20%. Natto: 11%. Other 9%. Individual food products (* An additional 69,000 tonnes are consumed in the form of cooked whole soybeans, yuba, kinako, moyashi {sprouts}, and others). Tofu and abura-age 505 tonnes. IOM and other USA 83%. Japan 11%. China 6%. Kori-tofu 29 tonnes. IOM and other USA 72%. China 28%. Natto 100 tonnes. China 50%. USA and Canada 30%. Japan 20%. Miso 179 tonnes. China 86%. Japan 11%. IOM 3%. Soy sauce: Defatted soybean flakes 183 tonnes (97%) and whole soybeans 5 tonnes (3%).

(2) Frequency distribution of solid matter extractability in soybean milk (105 samples; 60 cultivars and 7 lines)–for varieties Enrei, Fukuyutaka, Akishirome, Akiyoshi, Tamahomare, Fujimijiro, Hyuuga, Shirosenari. Average value of U.S. soybeans. Mode: 79%. Range 70-82%.

(3) Correlation between protein and sucrose content in soybeans. Inversely correlated. The more protein, the less sucrose. (4) Correlation between hardness of steamed seeds and ammonia nitrogen content in natto. Directly correlated. The harder the steamed seeds, the more ammonia nitrogen in the finished natto.

(5) Variation in chemical composition and suitabilities of soybeans for processing: Raw soybeans for processing, soybean milk for tofu, steamed seeds for miso, natto, cooked soybeans.

Tables: (1) Relationship between soybeans and processed foods in raw soybeans, soybean milk, and steamed

seeds. (2) Chemical composition and suitability of soybeans from USA, China, and Japan for processing into tofu, miso, natto, cooked soybeans. Varieties: Enrei, Fukuyutaka, IOM (USA; low protein, high oil), Tamahomare, Kitamusume, Miyagishirome (large seeded), Nattoshoryu (small seeded), Chinese (low protein, high carbohydrate). Address: Dep. of Utilization, National Food Research Inst., Ministry of Agriculture & Forestry, Koto-ku, Tokyo.

541. **Product Name:** Fu Chok: Bean Curd Sheet (Dried Yuba Sticks).

Manufacturer's Name: Wa Heng Dou-Fu.

Manufacturer's Address: 5063 24th St., Sacramento, CA 95822. Phone: 916-737-0545.

Date of Introduction: 1990.

Ingredients: Soy bean.

Wt/Vol., Packaging, Price: 8 oz.

How Stored: Refrigerated.

New Product–Documentation: Talk with Mr. Martin Peng-Xiang Lin, Owner. 1991. July 8. He started making Fu Chok [dried yuba sticks] in 1990. Imports from the People's Republic of China are less expensive than his but his is better quality. Yet it is very expensive to make.

Photocopy of Label sent by Martin Lin (see next page). 1991. Nov. 20. 5.75 by 7.5 inches. "Keep Fit. No preservatives added." Much of the label text is written in Chinese.

542. Liu, Zhengcai. 1990. The mystery of longevity. Translated from Chinese by Ouyang Caiwei. Beijing: Foreign Language Press. iv + 195 p. Illust. No index. 19 cm.

• **Summary:** Page 65: "Edible seaweeds also exert a curative effect on chronic bronchitis, and dried bean milk cream rolls [dried yuba sticks] contain very high protein content. One hundred gram of such rolls contain 50.5 grams of protein..."

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "dried bean milk cream rolls" to refer to what are probably dried yuba sticks.

The word "soy" is mentioned on 15 pages (p. 50, 51, 136, etc.). "Fermented bean curd" is mentioned on p. 67 as part of a healthy diet. Address: Practitioner of Traditional Chinese Medicine.

543. Rafferty, Kevin. 1990. City on the rocks: Hong Kong's uncertain future. New York, NY: Viking Penguin. ix + 518 p. See p. 169. Illust. Map. Index. 24 cm. [45 ref]

• **Summary:** An excellent history of Hong Kong and the story of the British handover (transfer of sovereignty) of Hong Kong to the People's Republic of China (Communist) on 1 July 1997.

Page 169: "There isn't a single union, for example, for all workers in the restaurant and food business: there's one calling itself the Bird's Nest Soup Workers Union, another the Dried Bean Stick Trade Workers [who make dried yuba

sticks], another the Pork Stall Workers..."

This book: "Explores the history and culture of Hong Kong, profiles the powers behind its business and political worlds, and analyzes the impact that recent events in China will have on its future" (publisher's description). Address: British journalist who has specialized in the Asian-Pacific region for more than twenty years.

544. Wang, Wenqiao; Kang, Wenbin. 1990. Chinese vegetarian cuisine: 100 authentic recipes. Beijing, China: New World Press. 142 p. Illust. (color photos). No index. 26 cm.

• **Summary:** Part II, titled "Bean curd and bean product dishes, contains 21 recipes, including: 34. Bean curd in fermented black beans [fermented black soybeans] (with 3 3-inch {7.5 cm} cakes of bean curd {about 6-7 oz. or 180 gm}). 37. Peppery hot bean curd (with 1 tablespoon Sichuan soybean paste and 1 tablespoon soy sauce). 38. Smoked bean curd (Smoking can be done before or after the ingredients are prepared). 39. Fried bean curd balls (resemble Japanese ganmodoki balls). 41. Dry-cooked bean curd bamboo (with "½ lb {225 gm} bean curd bamboo" [dried yuba sticks]; the yuba is soaked, then put in boiling water, then deep fried in a wok).

42. Braised bean curd shreds in tomato sauce (with "¾ pound {330 gm.} fresh bean curd sheets" [pressed tofu sheets] each cut vertically into 3 rectangular pieces of equal width, then piled atop one another and cut into thin shreds).

43. Bean curd sheets with tangerine peel. 44. Flavor potting five-fragrance dried bean curd (with 1 lb. white fresh pressed bean curd [pressed tofu]). 45. Bean curd bamboo with chili oil (with ½ lb. bean curd bamboo [dried yuba sticks]). 50. Stuffed bean curd. 51. Crispy-fried pine nut rolls (with 3 dried bean curd sheets {soaked}). 52. Deep-fried five-shred rolls (with "3 bean curd sheets" [pressed tofu sheets]; the result is like deep-fried spring rolls). 54. Bean curd triangles (tofu is cut into triangles then deep fried).

Part IV, titled "Vegetarian imitation meat dishes" includes: 71. "Mother and her sons meet"—chicken and eggs (with "4 bean curd sheets"). 74. Vegetarian ham (with "20 dried bean curd sheets [dried yuba sheets] {soaked}"). 74. Vegetarian chicken (with "5 dried bean curd sheets"). 75. Vegetarian duck (with "6 dried bean curd sheets {soaked}"). 76. Vegetarian fried dry minced meat (with "3 dried bean curd sheets {soaked}"). 77. Vegetarian sausage (with "3 dried bean curd sheets {soaked}").

80. Crispy and fragrant "duck" (with "15 dried bean curd sheets {soaked}"). 81. Diced 'chicken' with green peppers (with "3 dried bean curd sheets"). 82. Braised vegetarian chicken (with "3 dried bean curd sheets"). 83. Vegetarian eight-treasure chicken drumsticks (with "3 dried bean curd sheets"). 84. Vegetarian chicken curry (with "½ lbs fresh bean curd sheets {thousand sheets [pai-yeh]}"). 86. Vegetarian red-cooked chicken (with "8 dried bean

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curd sheets {soaked}”). 88. Deep-fried “duck” (with “2 dried bean curd sheets {soaked}”). 89. Deep-fried “duck” with fermented black beans (with “3 dried bean curd sheets {soaked, or substitute egg wrappers}.” “Rinse the black beans well, soak in warm water until soft, removed and pound into a pulp”).

A glossary (p. 133+) includes definitions of: Soy bean sprouts. Bean curd (six types): (1) Fresh bean curd comes in two types. The southern has a more watery consistency and is very soft. The northern contains less water and is firmer. (2) Fresh dried bean curd; pressed into small firm squares [doufu-gan, pressed tofu]. (3) Fresh dried bean curd sheets; also called “hundred pages” or “thousand sheets” [pai-yeh or ch’ien chang; pressed tofu sheets].

(4) “Dried bean curd bamboo (*fu zhu*); not bean curd at all, though so-called, but rather a by-product from making bean curd. It is the rich cream that rises to the top of the boiling soybean milk before gypsum is added to curd. The skimmed cream is sun-dried thoroughly in narrow stiff sticks [dried yuba sticks]. Soak in warm water to soften before using.”

(5) “Dried bean curd sheets (*yu pi*) [dried yuba sheets], same as dried bean curd bamboo, but dried in the form of folded semicircles. The dried bean curd sheet called for in the recipes in this book is a round piece with a diameter of 9 or 10 inches. Soak in warm water to moisten before using. It is also called ‘oil sheet,’ for it looks as if it were glazed with oil... According to ancient Chinese medicine books, they can clear up excessive heat in the lungs, stop coughs, eliminate phlegm and stop inflammation, and are good for the stomach.”

(6) “Fermented bean curd cheese [fermented tofu]; salty and creamy cakes of fermented dried bean curd [pressed tofu] with a savory flavor, appearing in white or red.” Many recipes call for MSG (optional).

Recipes also call for: Sesame paste, gluten, and several different types of mushrooms.

Note: Also published in Chinese in 1990 by the same publisher. “Both authors have worked for many years in the catering business. Wang is a member of the editorial board of the Chinese magazine *Cooking* and Gang himself possesses excellent cooking skills... All 100 recipes have been tested and proven successful” (from the rear cover). The many color photos (on glossy paper) were taken by Zhou Youma and Yan Xinqian at Gongdelin (the Forest of Merit and Virtue) Restaurant, a famous vegetarian eating place in Beijing. Address: China.

545. Paino, John; Messinger, Lisa. 1991. *The tofu book: The new American cuisine*. Garden City Park, New York: Avery Publishing Group Inc. viii + 175 p. Illust. Index. 26 x 21 cm. [15 ref]

• **Summary:** Contents: Acknowledgments. Preface. 1. Tofu in time: The history of tofu (by Shurtleff & Aoyagi). The

journey (3-page sidebar on how Nasoya was founded). 2. Tofu for health: A wise alternative for a better diet. The vision (3-page sidebar on Nasoya’s struggle to introduce tofu to America). 3. Tofu tips: A shopper’s guide to buying and storing (Introduction, types of tofu (incl. yuba), shopping for tofu, storing tofu). 4. Do-it-yourself tofu: Making tofu at home. Breaking ground (4-page sidebar on the founding of Nasoya). 5. Tempting tofu: The art of cooking with tofu (more than 150 recipes). Conclusion. Mail-order natural foods. Bibliography.

Nasoya’s first year sales were \$60,000, rising to \$200,000 by the second year, and \$600,000. Recently sales were well over \$5 million. Note: The first co-author of this book was Ellen Sue Spivack. Address: 1. President, Nasoya Foods, Leominster, Massachusetts; 2. Staff Health and Nutrition Reporter, Antelope Valley Press, Palmdale, California.

546. Product Name: Shamah’s Savory Seitan.

Manufacturer’s Name: Shamah’s Savory Seitan.

Manufacturer’s Address: HC-2 Box 39, Route 212, Mt. Tremper, NY 12457. Phone: 914-688-7945.

Date of Introduction: 1991. July.

Ingredients: Organic whole wheat flour, organic unbleached white flour (with wheat germ), water, tamari, garlic flakes, ground ginger, sea salt.

Wt/Vol., Packaging, Price: Bulk, or 1 lb in a 32 oz round plastic tubs with a snap-on lid.

How Stored: Refrigerated, 10-14 day shelf life.

New Product–Documentation: Talk with David Goldbeck of Woodstock, New York. 1991. Nov. 18. A new company has started making seitan in Woodstock. It is now sold at Sunflower Natural Foods in Woodstock. Shirley, the manager at Sunflower, would have the name and address (which she did). Talk with Winifred Shamah Hament, founder and owner of Shamah’s Savory Seitan. She launched her seitan in July 1991. The address shown above is her home address; she makes the seitan in St. Gregory’s Church, Route 212, Box 66, Woodstock, New York 12498. She makes about 100 lb/day. She simmers a 15-20 lb loaf of kofu in a broth for 1 hour, lets it cool overnight, then cuts it into small pieces. She sells seitan both in bulk (5 lb in a large plastic bucket to health food stores or restaurants) or 1 lb of seitan immersed broth in a 32-oz container. The sauce has a shorter shelf life than the seitan. Seitan freezes wonderfully (in the sauce), without any change in texture or loss of quality.

She has been a vegan for 20 years, and a single mother of 4. She has been a teacher but she wanted to do her own thing, something new in her life. Making seitan with a machine is hard work, but making it by hand is just too hard. “The response to my product has been incredible. I’m in five-star restaurants with no vegetarian dishes except seitan.” One restaurant makes it into a mock Peking duck (that’s how they use it in Chinatown, New York); they wrap the seitan

with yuba. Rudy's, a five-star restaurant, broil it then serve it with a Dijon & wine sauce or in Mexican dishes. She learned how to make seitan at home from a friend about 2 years ago. She lived in Long Island for a while and a friend owned Rising Tide natural foods (in Glen Cove, L.I.), which made their own seitan and sold it only at their store. They have been making it for more than 2 years. From Rising Tide she learned how to make seitan on a commercial scale.

She buys ground wheat (100 lb at a time) and uses a kneading machine. The yield of seitan from 100 lb wheat flour is 85-90 lb. The future growth looks to be in bulk sales to institutions (schools, hospitals, Grand Union, restaurants). Seitan is a good product and people love it. When demonstrating seitan to those who are unfamiliar with it, she cuts the seitan into thin slices, breads them in cornmeal seasoned with garlic and sea salt, then deep fries it and serves it fresh and hot. The market is where the tofu market was 10 years ago. In New York Chinatown she has seen a product like seitan sold in cans, as well as a white loaf that looks like a liverwurst—very tight in texture.

547. *SoyaScan Notes*. 1991. The concepts of alkaline (*arukari-sei*) and acidic (*sansei*) foods in Japan (Overview). Sept. 20. Compiled by William Shurtleff of Soyfoods Center.

- **Summary:** It is common knowledge among most typical Japanese that foods can generally be classified along a continuum that ranges from alkaline at one end to neutral (*chusei*) in the middle, to acidic at the other end. Alkaline foods (those with an alkaline ash) are generally considered to promote and protect health. It is widely believed that one should try to keep one's blood a little on the alkaline side of neutral. According to E.C. Grey's *The Food of Japan* (League of Nations, 1928) and *Inshoku Jiten (Encyclopedia of food and drink)*; Motoyama 1958; see *arukari*) and to discussions with numerous Japanese, well-known alkaline foods are as follows. Each food is followed by an "alkaline value" in parentheses taken from Grey (1928, p. 56-111; the "alkalinity is due to lime and magnesia"): sea vegetables including kombu (88.9), wakame (55.8), nori (35.3); black soybeans (40.2), yellow soybeans (38.1), soyfoods (and Soyfoods Center) including yuba (25.6), kinako roasted soy flour (25.2), Hamana natto (Hamanatto 24.8), natto (19.3), green soybeans (ao-daizu, dry; 17.8), Misozuke (vegetables preserved in miso, 16.3), shoyu (14.3); red miso (11.5), okara (9.0), white miso (8.1), edamamé (green vegetable soybeans, 5.8), aburage deep-fried tofu pouched (6.7), soymilk (3.8), tofu (1.1), shiitake mushrooms (41.0), azuki beans (27.0), umeboshi salt plums (3.1), dried fruits including dried fig (46.8), dried persimmon (21.3), raisins (15.3), cheese (18.0), most fresh fruits including yuzu (citron, 11.7), buckwheat (7.0), fig (6.3), lemon (5.9), banana (4.6), mikan (mandarin orange, 4.0); root vegetables including potatoes (13.9), tororo imo (11.5), daikon radish (5.0); most green vegetables such as komatsuna cabbage (11.3), or daikon leaves (10.9),

pickled vegetables such as takuan (14.6). Alkaline beverages or liquids include tea, coffee, dairy milk (2.6), condensed milk (8.0), powdered milk (26.6), grape wines, and vinegar.

Acidic foods, which the Japanese believe should be used in moderation, include: white sugar (0), mizuame [rice syrup] (0), chocolate (3.0) and other sweet foods, eggs (2.8), flesh foods including chicken (5.2), pork (5.2), beef (5.1), fresh fish (avg. 5.3), alcoholic beverages including amazake (0), beer (0), sake (0); animal fats including butter (1.6), margarine (0.9).

Many Japanese find that acidic foods, when consumed in excess, give them acid indigestion. Neutral foods include rice (0.5-2.9), wheat (3.5-6.6), barley (2.7-4.6), and wheat gluten (1.0).

Note that this classification system is unrelated to the yin-yang continuum used by macrobiotics; most Japanese are unaware of macrobiotics. The latter, for example, considers meat to be yang (alkaline), whereas wines, fruits, and milk are yin (acidic).

548. Saio, Kyoko; Watanabe, Tokuji. 1991. Food use of soybeans in Japan. In: K. Okubo, ed. 1991. Japan part of Proceedings of the International Conference on Soybean Processing and Utilization. 130 p. See p. 35.

- **Summary:** In 1988 some 47,000,000 tons of soybeans were consumed in Japan; 79% of this amount was used to make edible and 19% (8,900,000 tons) was used for foods. In the process of making edible soy oil, more than 3,000,000 tons of defatted soybean meal were produced; 89% of this was used as livestock and poultry feeds, and 12% was used in foods (mostly for soy sauce, but with some for soy protein products and others). There has been a rapid increase in consumption of edible oil and defatted meal in Japan, accompanied by an increase in animal protein in the diet.

In 1988 Japan produced only 290,000 tons of soybeans domestically, and most of this amount was used for foods, especially tofu (60%), miso (24%), natto (9%), and other foods (dried-frozen tofu, yuba, kinako, etc.). The consumption of these foods has risen proportionally to the increase in Japan's population, which means that over all per capita consumption is static.

A recent survey conducted in Japan showed that 82% of Japanese ate soyfoods more than 3 times/week, and that Japanese people had a rather good image of these foods, describing them as healthy, natural, tasty, good for daily use, inexpensive, and delicious.

Japanese enjoy both traditional and modern soyfoods. The technologies for making "Vegetable Protein Products" from soybean meal have been introduced from the USA since 1970, but these have been modified and adapted to suit Japan's tastes and needs. "The importance of soybean foods in Japanese dietary life cannot be too much emphasized. We love them as traditional but also new foods." Address: 1. Research Council Secretariat, MAFF; 2. Tokyo Metropolitan

Food Technological Research Center. K. Saio is presently at: National Food Research Inst., MAFF, 2-1-2, Kannondai, Tsukuba 305, Japan.

549. Levy, Phil. 1991. Hanoi harvest: The food of Thailand and Vietnam. *Observer (London)*. Dec. 22. p. 78.

• **Summary:** The subtitle continues: “Week 4—Hué, Da Nang, Hoi An, Hanoi. In the final part of this series, Phil Levy visits four of Vietnam’s major cities, where the food varies from a happy blend of Franco-Vietnamese to Chinese-influenced dishes and Buddhist vegetarian cuisine.

Hué, a Buddhist, is famous for its local vegetarian cuisine.

Ly Thung Kiet Villas is a French-built tourist villa where the writer and his party were served: Braised bean curd skin with tree-ear mushrooms, eaten with rice. Bean curd skin curry with potato and mushrooms, eaten with a baguette. Minced beef (probably with bean curd) with crunchy peanuts, wrapped in green leaves and fried. Thick soup of potato, mushroom and bean curd (see the Recipe for Buddhist monk’s soup).

550. **Product Name:** Tofu, Fried Soy Protein [Fried Yuba], Soy Milk.

Manufacturer’s Name: Wen’s Food Inc.

Manufacturer’s Address: 9179-Red Branch Road, Columbia, MD 21045. Phone: 410-730-6699.

Date of Introduction: 1991.

New Product–Documentation: U.S. Soyfoods Directory. 1999. p. 45. Talk with Mr. Ting-yi Wen. 1999. May 6. The parent company of this company was started in 1987 in Taiwan. Then Mr. Wen came to Maryland and in 1991 began making the products shown above. Today he makes a host of innovative products. Tofu: Regular Tofu, Soft Tofu, Tofu Curds (*Doufu-Hwa*), Extra Firm Tofu (*Doufu-Gan*), two types of Tofu Noodles (Plain, and Spicy with Soy Sauce), Five-Spice Pressed Tofu Sheets (*Wu-hsiang pai-yeh*), and Seasoned, Rolled, Pressed Tofu Sheets (ssu-chi or suji, made from pai-yeh; season the sheets, then roll and steam).

Yuba: Crispy Soy Chicken (new name for fried yuba), plain fresh yuba (*bai dou-pi*). But he stopped making the yuba last year because: (1) It was too labor intensive; (2) Working in the hot, steam-filled room was so uncomfortable that at the end of each day he felt like a steamed dumpling. Soymilk (plain or sweetened with sugar) in ½ gallons.

Products to be introduced soon: (1) Soymilk in small single-serving cups similar to those in which yogurt is now sold (a unique packaging idea). (2) A line of soy yogurts. (3) A line of Chinese frozen entrees, such as Crispy yuba chicken with black bean sauce.

Business card sent by Ting-Yi Wen. 2001. Wen’s Food Inc. makes tofu products and sauces, with Mao Pao, Kung Pao, and BlackBean flavors, plus Soy Chicken, Soy Pudding, Soy Milk, Soygurt, etc. They are still at the address above.

551. Duong, Binh; Kiesel, Marcia. 1991. The simple art of Vietnamese cooking. New York, NY: Prentice Hall Press. xvii + 326 p. Foreword by Jacques Pépin. Illust. (color photos by Becky Luigar-Stayner). Index. 24 cm.

• **Summary:** About the authors: Binh Duong was born in Vietnam in Nha Trang, on a beautiful bay on the country’s south central coast. He was raised in Da-Lat in the mountains; his father was an engineer. In 1975, near the end of the Vietnam war, he fled to the USA, where he became a well-known chef. He and Marcia Kiesel met in 1998 in the test kitchens of *Food & Wine* magazine.

“There is a certain finesse, a certain quality to Vietnamese cooking that sets it apart from other types of oriental food: Clean, clear sauces; a minimum of fat; an abundance of vegetables; and very distinctive flavors” (p. xi, from the Foreword, by Jacques Pépin).

The best place to eat for most people in Vietnam, especially if one does not have much extra money, is at “the food stalls in the open-air market. The atmosphere is convivial; the food as pure and fresh as it can be made.”

“There are only a few basic ingredients in Vietnamese cooking, but they are vital ones: *nuoc mam*, or fish sauce, lemongrass, a handful of unusual herbs, rice paper, and rice flour” (p. xvi-vii).

The chapter on “Key ingredients” (p. 10-29) includes: (1) Bean curd, dried (tau hu ky [yuba]); it comes in thin sheets or rolled “bean sticks” [dried yuba sticks]. Sold in plastic packets or colorful paper packages. Can be fried until crisp or softened in water then simmered or sauteed.

Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “tau hu ky” to refer to yuba. (2) Bean curd, fresh (dau khuon): Japanese name: Tofu. (3) Bean curd, fried (dau khoun chien): Cubes of fried tofu, especially delicious filled then simmered in a flavorful stew. Sold 10 cubes in a 2-oz pack. (4) Bean curd, red (chao): “A spicy wine-fermented tofu that imparts a reddish-brown luster and rich flavor to marinades.” Better quality products are sold in glass jars or small crocks. (5) Hoisin sauce (Tuong ngot): From China, hoisin is made from soybeans, garlic, sugar, and spices. (6) Vietnamese bean sauce (Tuong cu da). Made from soybeans, cooked rice, and water. (7) Soy sauce (xi dau): Used quite a bit in Vietnam, especially by Vegetarian Buddhists who do not eat fish sauce. “Japanese soy sauces are light, pleasant and well suited to Vietnamese cooking.”

Dipping sauces and condiments: Soy vinaigrette (Nuox xi dau giam, with “3 tablespoons soy sauce,” p. 51). Rich bean sauce (Nuoc tuong ngot, with “1 heaping tablespoon pure Vietnamese bean sauce or Chinese bean paste,” p. 54).

Soy related recipes: Garlic chive and tofu soup (Canh dau knuon, with three 3-ounce tofu cakes, cut into 2-inch pieces, p. 91. “Tofu, highly prized even by nonvegetarians because it is so nutritious, picks up the flavors it is cooked

with and takes on a smooth and unusual texture that is quite pleasant"). Fried tofu stuffed with pork and mushrooms (Dau khuon don thit, with two "2-ounce packages fried bean curd, p. 242-43).

"Vegetarian cooking of the Vietnamese Buddhists" (p. 269-96). Begins with a page about how Buddhism came to Vietnam and its place in modern Vietnamese life and food. Vegetarian tofu soup (Canh chua chay). Vegetarian summer rolls (Goi cuon chay, with tofu). Vegetarian spring rolls (Cha gio chay, with firm tofu cakes and Soy dipping sauce). Fried tofu salad (Goi dau khuon). Carrot, jicama, and tofu salad (Goi chay, incl. three 3-ounce tofu cakes and "1 large sheet dried bean curd [yuba], broken in half crosswise"). Fried tofu with green beans (Dau khuon xao dau). Grilled tofu and vegetables (Dau khuon va la ghiem nuong vi). Curried tofu sauté (Dau khuon xao la lan, with firm tofu cakes). Lemongrass-scented vegetable sauté (with tofu). Fried vegetables with noodles (with tofu and 1 large sheet of yuba). Squash and sweet potato stew with coconut and peanuts (Kiem, with yuba and tofu). Fried tofu with tomato and vegetables (Dau khuon xao thap cam). Hoisin dipping sauce (Nuoc cham tuon). Soy dipping sauce (Xi dau cham, with soy sauce). Address: 1. Chef and owner of the Truc Orient Express, Hartford, Connecticut; 2. Assoc. director of the test kitchen and a food writer at *Food & Wine* magazine.

552. Fukushima, Danji. 1991. Recent progress of soybean protein foods: Chemistry, technology, and nutrition. *Food Reviews International* 7(3):323-51. [29 ref]

• **Summary:** Contents: Abstract. Introduction. Chemistry: Chemical composition of soybeans (Soybean globulins composed of four major components—2S, 7S, 11S, 15S), importance of three-dimensional structures of soybean protein molecules in food processing, influence of biologically active substances in soybeans on food processing. Technology: Traditional soybean protein foods and recent progress in their technology (soy milk {remove the hypocotyl and hull to remove off flavors; Soyasaponin A as the strongest off flavor}, tofu, kori-tofu, yuba), fermented soybean protein foods: Application of bioreactor for soy sauce production, nontraditional soybean protein foods and recent progress on their technology, recent progress on new soybean protein foods in which soybean proteins are the key material (modified abura-age, modified ganmodoki, deep fried texturized soy protein nuggets). Nutrition: Recent progress on nutritive values of soybean proteins (Soybean proteins have an amino acid score of 100 for persons more than 2 years old), physiological function of soybean proteins (they lower cholesterol levels when used to replace animal proteins). Future of soybean protein foods (Kikkoman fermented soy sauce is well on its way to becoming a universal seasoning. Tofu and tempeh also seem to have a bright future).

"The most important chemical reactions during the

process of soybean protein foods are the intermolecular reactions among the residues exposed on the surface of the protein molecules through the denaturation process. In native soybean protein molecules, most amino acid residues responsible for the reactions—such as cysteine (-SH), cystine (S-S), and hydrophobic amino acid residues—are buried in the inside region of the molecule, inaccessible to water. These residues become reactable with each other through the exposure from the inside by heat denaturation during processing. The unique textures of soybean protein foods, such as tofu, kori-tofu, yuba, and texturized products produced by extruder, etc., are the results of both the intermolecular interchange reaction between the exposed -SH and S-S groups and the intermolecular hydrophobic reaction among the exposed hydrophobic amino acid residues. The exposure of amino acid residues is also important for the hydrolysis of soybean proteins by enzymes, through which soy sauce is produced, because the cleavage of the peptide bonds is carried out after binding between the active sites of the enzymes and the enzyme-specific amino acid residues exposed through denaturation." Address: Kikkoman Corp., 1-25 Kanda Nishiki-cho, Chiyoda-ku, Tokyo 101, Japan.

553. Homma, Gaku. 1991. The folk art of Japanese country cooking: A traditional diet for today's world. Translated by Emily Busch. Berkeley, California: North Atlantic Books. xii + 270 p. Illust. Glossary and index of Japanese words. Recipe index. 26 x 20 cm.

• **Summary:** This is a remarkable book by a remarkable man, with many deep insights into both traditional and modern cultures in Japan and the USA; it gives a unique, authentic view of Japanese culture, and makes liberal use of the Japanese names for things, such as foods, utensils, techniques, houses, etc. He uses the Japanese words first, then explains what they mean (in parentheses) in English. Thus the book makes it easy and enjoyable to learn Japanese food-related words.

Moreover, the book is brimming with interesting information about traditional soyfoods in Japan.

The author was born in 1950 in Akita, capital of Akita prefecture, in northeastern Japan. Starting as a young boy, he studied Aikido with the founder, Morihei Ueshiba (1883-1969), as a live-in student in the small town of Iwama, in Ibaragi [Ibaraki] prefecture. He was curator of the Lake Ogawara Folk Art Museum, in Aomori prefecture, northeastern Japan, where he worked for about 4 years and learned much of the most interesting tradition, history and other information in this book. Since 1977 he has been living in Denver, Colorado.

Contents: Preface. Foreword. 1. Introduction. 2. The background of country cooking—Folk art and custom. 3. The background of Japanese staple foods. 4. The background of country cooking—Basic preparation. 5. Country meals. Closing. Lake Ogawara Folk Art Museum (*Ogawara*

Minzoku Hakubutsukan), located in Furumagi, Misawa City, Aomori prefecture. Founded by Mr. Yukio Sugimoto. Officially opened 29 Aug. 1961. Displays over 15,000 pieces of folk arts and crafts.

Edamame (green soybeans, p. 49-50). In and around his home town, Aug. 15 was too early for harvesting fruits, so they celebrated *mame meigetsu* on Sept. 15. The main food offered at this festival was *eda mame* (green soybeans) along with boiled chestnuts, other fruits, and sweet potatoes. The name of the festival is derived from the word *mame*, which means “bean.” In other areas the festival might be called *kuri meigetsu* (“chestnut full-moon”) or *imo meigetsu* (“sweet potato full-moon”)—depending on the main crop produced. All of the various crops harvested were offered to the moon.

Concerning soybean oil (p. 73): The section titled “Abura—Oils” states: In the Lake Ogawara Folk Art Museum an antique wooden tool (*abura shibori*, see photo) used for extracting oil is on display. The seed or food “to be pressed was placed between two pieces of wood and wedges were hammered into place with a big wooden mallet, driving the pieces together.

“In the Lake Ogawara area this method was used to make rapeseed oil, a popular cooking ingredient.” Clearly, the oil was produced in small quantities. “The traditional Japanese farmer was never able to produce enough oil for deep-frying foods.”

“There are many sources for natural oils in Japan. From sesame seeds we obtain *goma abura*, from Japanese nutmeg we obtain *kaya abura*, from corn we obtain *kimi abura*, from peanuts we obtain *rakkasei abura*, and from soybeans we obtain *daizu abura*.”

Concerning yuba: Although very healthful, yuba (dried soymilk film) is not as popular as most other Japanese soy products. “Tofu is made by bringing soybean ‘milk’ to a boil. As it boils, a thick film forms on the surface. This film is picked up on a cloth and laid out to dry. The resulting food is yuba.

Note 1. This is the earliest English-language document seen (Oct. 2012) that uses the term “dried soymilk film” to refer to yuba.

“I have served yuba to people visiting from Japan and had them ask me what it was.” Yuba is popular in China and parts of southern Asia. It can be eaten fresh or dried. “Yuba is available in Oriental markets in the United States, but chemicals have usually been added during production.” A photo shows various dried yuba sheets and dried yuba sticks on a shallow, round, woven Japanese tray (p. 92).

Tofu (“soybean cake”), yuba (“soybean film”) and natto (“fermented soybeans”) are all examples of soybean products (*daizu seihin*) (p. 139).

In the section on *Nimono*—“Poached dishes” is a recipe for yuba and kikurage (“Soak 2 oz. yuba and cut into 1-inch pieces,” p. 186).

Concerning *tonyu* (soymilk): It is mentioned only in the

recipe for homemade tofu—using “2 cups *daizu* (soybeans) and ½ teaspoon nigari (coagulant)” (p. 142-43).

Note 2. Koji, miso, miso soup, miso-dama, natto, shoyu, tamari, and tofu are each discussed in detail in separate records. Address: Former owner and head chef, Domo restaurant, Denver, Colorado. Founder and chief instructor Nippon Kan Aikido and Cultural Center, Denver, Colorado.

554. Passmore, Jacki. 1991. *The encyclopedia of Asian food and cooking*. New York, NY: William Morrow. 320 p. Illust. by Jan Smith. Index. 24 cm. [44 ref]

• **Summary:** The most complete book of its type seen to date (May 2010), with many helpful cross references (sometimes flawed). Soyfoods are mentioned throughout. Unfortunately, for Chinese foods, the author does not distinguish between Mandarin and Cantonese, or between pinyin (newer) and Wade-Giles (older) styles of romanization. For some of the “Also known as” it is not clear to which of several previous entries this refers (see “Soybean”).

Ame (ah meh, Japan): A sweet jelly made from millet.

Azuki bean (*Phaseolus angularis*). Native to China; used in China since the Han Dynasty (206 BC–AD 220): An [or anko] (Japan): A sweetened paste of ground azuki beans available in smooth (*koshi-an*) and crunchy [*chunky*] (*tsubu-an* or *tsubushi-an*). *Sarashi-an*: A flour of ground azuki beans. Also known as *hong dow* (China), dried red beans, red beans [*adzuki beans*, *aduki beans*]. See also: Red bean paste, sweet.

Bean curd: Also known as *dou-fu*, *dow foo* (China); *tahu* (Indonesia), *momen tofu*, *tofu* (Japan); *ta hu*, *ta hua* (Malaysia); *tahure* ([fermented tofu] Philippines); *tauhu kau* (Thailand); *dau hu*, *dau hu chung* (Vietnam); bean custard, soybean cake. Illustrations of: Fried bean curd, pressed bean curd. Almond bean curd (non-soy). Bean curd “brains”: Also known as *doufu nao* (China); *taho* (Philippines). “Cotton” bean curd: Also known as *momen tofu* (Japan). Freeze-dried bean curd: Also known as *char doufu*, *doufu pok* (China); *agedofu*, *atsu-age*, *nama-age* (Japan); *tauhu tod* (Thailand), *dau hu chien* (Vietnam). Fried bean curd pouches: Also known as *aburage*, *usage* (Japan). *Gan modoki*. Grilled bean curd: Also known as *doufu kan* [sic], *gone* (China); *yakidofu* (Japan). Instant bean curd. *Okara*. Pressed bean curd: Also known as *doufu kan* (China), *taukwa*, *tauhu kuning* (pressed yellow bean curd) (Indonesia, Malaysia); *tokwa* (Philippines); *tauhu leong* (Thailand); *dau hu ki* (Vietnam). Silk bean curd: Also know as *kinugoshi tofu* (Japan), *shui doufu* (China), *taho* (Philippines).

Note: The author seems to be confused about “Silk bean curd.” Japanese *kinugoshi* is made from relatively thick soymilk, which is “set” using a coagulant but without any separation of curds and whey. Yet on page 26 we read: “In China the name [for silk bean curd] translates as ‘water bean curd,’ It has a very smooth, delicate texture achieved by straining the coagulated liquid through fine mesh, then allowing the strained curds to settle without pressing.” This

is not a description of silken tofu, but rather of Japanese regular tofu (*momen-goshi*) made without any pressing weights.

Contains a recipe for homemade “Bean Curd” plus 3 bean curd recipes.

Bean curd by-products: Bean curd skin [yuba], bean curd sticks: Also known as fu jook pin, gee jook (China), yuba (Japan), forng ta ohu [tauhu] (Thailand); rolled bean curd, second bamboo.

Fermented bean curd: Also known as foo yu, fu-ru, narm yu (China), tahoe, tahu (Indonesia, Malaysia), tausi (Philippines), bean curd cheese, Chinese cheese, pickled bean curd, red bean curd, soybean cheese.

Moldy bean curd. Bean curd cheese: See bean curd by-products (fermented).

Bean pastes and sauces: Shih and jiang from China: (1) Bean sauce (jiang) also known as taucheo or tau sa (Malaysia, Nonya and Singapore cooking), mien see [mian shi] (China), taoco [Pron. = tao-cho] (Indonesia), tuong ot (Vietnam), bean paste, brown bean sauce, yellow bean sauce. (2) Black bean sauce (a recent addition to the family of Chinese sauces. A major ingredient is puréed fermented black beans with a hint of garlic and star anise. It tastes best when freshly made). (3) Chili bean paste (in addition to chopped dried chilies, it sometimes contains fermented black beans): Also known as lat chu jeung, as lat chu jeung yau (Garlic) (China); kochujang (Korea); bean paste with chili; hot bean paste; Sichuan hot bean paste. (4) Dhwen-Jang (Korea). See also miso. (5) Hoisin sauce (China): A sweet, thick, reddish brown sauce. One ingredient is fermented soybean paste. Not to be confused with the Chinese barbecue sauce called sha cha jang. Also known as hoi sin cheung (China); barbecue sauce. (5) Soybean paste. Also known as mean see jiang (China). (6) Sweet bean paste. In this context it is not the sweet bean paste made from azuki beans, but rather a sweet, thick, dark brown sauce made of ground fermented soybeans and sugar. Its salty-sweet flavor is used in marinades and roast meats. Also known as tim mean jiang (China).

Bean sprout: Mung bean sprouts, silver sprouts (mung bean sprouts with the roots and seed pods removed), soybean sprouts. Also known as: Daai dau nga choy (soybean sprout), ngunn nga choy (silver sprouts), nga choy, sai dau nga choy (mung bean sprout) (China); tauge (Indonesia); moyashi (Japan); kacang ijo, kacang djong, kacang padi (Malaysia); togue (Philippines); taun gawk (Thailand); gia (Vietnam); bean shoots.

Beijing duck sauce (recipe with ½ cup sweet bean paste). Vietnamese-style Beijing duck sauce (with ½ cup sweet soy sauce–kecap manis).

Black bean: See Fermented black bean. Black bean sauce: See Bean pastes and sauces. Fermented black bean sauce. Black soybean: See soybean.

Broad bean paste. Broad bean sauce: “The best is made

in Pixian, a city in Sichuan province, where it is used instead of soybean-based seasoning sauces.”

Brown bean sauce: See Bean pastes and sauces.

Che hau sauce (Che how, China): See Bean pastes and sauces (Hoisin). Chick-pea.

China: Has the “oldest and most well-documented cuisine in the world.” Chinese cheese: See Bean curd by-products (fermented). Chinese hot bean paste: See Bean pastes and sauces.

Dau hu (Dow hoo, Vietnam): See bean curd. Dau hu chien (Dow hoo chee-ian, Vietnam): See Bean curd, fried. Dau hu chung (Dow hoo chee-ung, Vietnam): See Bean curd. Dau hu ki (Dow hoo kee, Vietnam): See Bean curd, pressed.

Dengaku (plus recipe).

Dhwen-jang (Dwen-jang, Korea). Similar to Chinese soybean paste or Japanese akadashi miso. Also known as Korean bean paste. Doufou Kan [doufu gan], China: Bean curd (grilled, pressed). Dou-fu (Dau-fu, China). See Bean curd. Doufu nao (Daufu-nou, China): See Bean curd “brains.” Doufu pok (daufu pork, China). See bean curd, fried. Dow foo (dau fu, China): See Bean curd.

Edamame (e dah ma meh, Japan): See soy bean.

Fermented bean curd: See Bean curd by-products. Fermented bean curd cake. See Bean curd by-products; tempe.

Fermented black beans (Shih, China). With recipe for “Fermented black bean sauce” (p. 106). Also known as dau see (China), black beans, dried black beans, preserved black beans.

Fermented red rice. Flours and thickeners: Kuzu (Japan). Mung bean flour. Soy flour (incl. kinako). Foo yu (Fu you, China). See Bean curd by-products (fermented). Forng Tao Hu (Fong tao huu, Thailand). See Bean curd by-products, bean curd sticks. Fu jook pin (Fu juk pin, China): See bean curd by-products, bean curd skin. Fu-ru (Fu yue). Gee Jook (Ji Juk, China): Bean curd sticks.

Gluten: Kau fu, kohana fu, matsutake fu, mein jin pau, nama fu, su tang, yaki fu. Also known as: Kau fu, mianjin, mein jin pau, su tang (China), kohana fu, yaki fu (Japan).

Gochujang (Korea). See also: Chili paste, chili sauce. Korean barbecue sauce.

Grilled bean curd: See Bean curd, grilled.

Hatcho miso: See miso, Hatcho. Hot bean paste. Hot black bean sauce. Inaka miso: See miso.

Japan: “Japanese cooks revel in the artistry of their craft. The Japanese love of nature is a challenge to present each ingredient as reminder of its origins: to bring nature to the table....” Regional cuisines are not of great importance in Japan; cooking methods (incl. Dengaku), salting (incl. Teriyaki), cutting and slicing techniques.

Kecap asin (Ket-chup a-seen, Indonesia): See Soy sauce, sweet and salty. Kecap cair (cha-ear, Malaysia): See soy sauce, light. Kecap hitam (Indonesia): See soy sauce, sweet and salty. Kecap ikan (Indonesia): See Fish sauce.

Kecap manis (mah-niece, Indonesia): See Soy sauce, sweet and salty. Kecap petis (pet-is, Indonesia): See fish sauce. Kinugoshi tofu (Japan): See Bean curd, silk.

Kochujang (go-choo jang, Korea): See Bean pastes and sauces; chili pastes.

Koikuchi shoyu (Japan): See soy sauce. Continued. Address: Author of several books on Asian cuisine.

555. Passmore, Jacki. 1991. The encyclopedia of East Asian food and cooking (Document part II). New York, NY: William Morrow. 320 p. [44 ref]

• **Summary:** Continued from p. 153: Korean bean paste: See Dhwen jang. Koshi-an (Japan): See Azuki beans (an). Koya tofu (Japan): See Bean curd, freeze-dried [sic].

Kuzu (Japan): See Flours and thickeners. Lentil (*Lens esculenta*): Red lentil, Red mung beans.

Light soy sauce: See Soy sauce.

Lu soy (lo shui, China): See soy sauce.

Maltose: Made by fermenting germinated grains of barley. When used to glaze foods, may have soy sauce and red food coloring added. Also known as: Malt sugar, [barley malt syrup].

“Ma-po” dofu [Mabo-dofu]: See beef.

Mean see jiang [mian shi jiang] (min see jiang, China): See Bean pastes and sauces.

Mein jin pau [mien jin pau] (China): See Gluten.

Mianjin (China): Gluten.

Mien see (mien-si [mian shi], China): See Bean pastes and sauces.

Miso (Japan): (1) Hatcho-miso. (2) Inaka miso or Sendai miso. Also known as Red miso. (3) Shinshu miso. (4) Shiro miso.

Mochi. Monosodium glutamate. Also known as: Mei jing (China); aji-no-moto (Japan); servuk perasa (Malaysia); ve tsin (Vietnam), M.S.G., taste essence, taste powder.

Moyashi (Japan): See Bean sprout.

Mung bean. Also known as moong ke dal (India); kacang djong, kacang eedjo [hijau, katjang idjo] (Indonesia); kacang hiau (Malaysia); tau ngok (Thailand); dau xanh (Vietnam); green gram.

Nama-age (nah-mah ah-geh, Japan): See Bean curd, deep fried.

Nama fu (Japan): Raw / uncooked wheat gluten.

Natto (Japan). See soybean.

Noodles: (1) Bean curd noodles (China). Also known as Soy noodles, soy vermicelli.

Oils and fats: Soybean oil. (2) Bean curd skin noodles (China) [yuba noodles].

Peanut (with many foreign names and recipes).

Preserved black beans: See Fermented black beans.

Pressed bean curd: See Bean curd (pressed).

Red bean paste, sweet: “An important ingredient in Chinese and Japanese cooking, sweet red bean paste is made by boiling the red azuki bean and mashing it to a paste with

lard or oil, then cooking it until it is fairly dry or thick. In Japan, red bean paste is made in two textures: the smooth purée is koshi-an and the chunky version, with the beans only partly crushed, is tsubushi-an. It is a filling for cakes and sweet buns, and is used in several desserts.” Also known as hong dow sar (China), an (Japan). Contains a recipe for Sweet red bean paste.

Red rice: See Fermented red rice.

Rice: Many type of glutinous and non-glutinous.

Rolled bean curd: See Bean curd sticks [dried yuba].

Seaweed: Many different types. Seaweed gelatin or Seaweed jelly: See agar agar.

Sendai miso (Japan): See miso.

Sesame seed: Black sesame seed, sesame oil, sesame paste, white sesame seed.

Shinshu miso (Japan). Shui doufu (China): See bean curd (silk). Silk bean curd: See Bean curd (silk).

Soybean (*Glycine max*): (1) Black soybeans. (2) Fresh soybeans [edamame]. (3) Yellow soybeans. Soybean cheese: See Bean curd, fermented [fermented tofu]. Soybean condiment: See Bean pastes and sauces. Soybean milk. Also known as tau cheing, tau ni (China). With homemade soymilk recipe. Soybean noodle: See Noodles, bean curd. Soybean oil: See fats and oils. Soybean paste: See Bean pastes and sauces. Soybean sprout: See bean sprout. Soy flour: See Flours and thickeners.

Soy sauce: “An ancient seasoning, first used in China more than 3,000 years ago. Known in its original form as *shih*, it was a thin salty liquid in which floated fragments of fermented soybeans.” “Soy sauce is to Chinese and Japanese cooking what the pungent, salty fish sauce known as nam pla or nuoc mam is to Thailand and Vietnam respectively.” (1) Dark soy sauce. Also known as jang yau, see yau (China); koikuchi shoyu, tamari (Japan), kecap pekat (Malaysia); mushroom soy. (2) Light soy sauce: Thinner, saltier, and lighter in color and flavor. It is used in cooking where its light color will not spoil the color of the ingredients. Also known as sang chau, see yau (China), shoyu, usukuchi shoyu (Japan), kecap cair (Malaysia), toyo (Philippines), nam siew (Thailand), xi dau (Vietnam), thin soy sauce. (3) “Lu soy (China) is a ‘master sauce’ based on soy sauce with sugar, ginger, and five-spice, It is used for simmering poultry and other meats to give a rich flavor and to color the food a deep brown. Also known as lu shui (China).”

Soy sauce, sweet and salty: (1) “Kecap asin (Indonesia) is a thick, salty, dark soy-based sauce used to impart a strong color and flavor. Its sweet counterpart is *kecap manis*. It is similar to, but thicker than, several dark soy sauces used in Chinese cooking.” (2) Kecap hitam (Malaysia) is a sweet dark soy sauce. Slightly less spicy than kecap manis. (3) Kecap manis (Indonesia) is a sweet, dark, thick, aromatic soy sauce, especially widely used with satay. “It is similar to, though finer in flavor than, Chinese sweet soy sauce” [tian mian jiang]. Also known as kecap bentang manis

(Indonesia); sweet soy sauce. (4) “Sweet soy sauce (China) is a dark, sweet sauce combining soy sauce, sugar, and malt sugar. Its distinctive malt-like taste goes well as a dip for fried snacks, poultry, and seafood.” It appears frequently on the table in homes and restaurants in Fukien province, opposite Taiwan on the coast of south-eastern China. For a recipe, see Sweet soy sauce pork (p. 230). Note: This is not generally a commercial product. (5) Tim cheong (Malaysia) is a thick, sweet, black soy sauce, similar to that used in China. In Malaysia it is served with poh pia. Its flavor is closer to that of kecap hitam than to kecap manis.

Sprouts, soybean. See Bean sprout, soybean. Sushi (describes many types, with recipes). Sweet bean paste or Sweet bean sauce: See Bean pastes and sauces.

Taho (Philippine bean curd brains). Tahoe (Indonesia or Malaysia, fermented bean curd). Tahu (Malaysia bean curd). Ta hua (Malaysia bean curd). Tahure (Philippine bean curd).

Tamari (Japan): See soy sauce. Taucheo (Malaysia or Singapore, bean pastes and sauces). Tauge (Indonesia bean sprout). Tauhu kao (Thailand bean curd). Tauhu kuning (Indonesia and Malaysia bean curd pressed). Tauhu leong (Thailand bean curd, pressed). Tauhu tod (Thailand bean curd, fried). Taukwa (Indonesia and Malaysia bean curd pressed). Tau sa (Malaysia bean paste and sauces). Tausi (Philippines, bean curd products [sic, fermented black soybeans], fermented).

Tempe (Indonesia, Malaysia): Fermented soybean cake [tempeh]. Oncom [Ontjom]. Tokwa (Philippine bean curd pressed).

Tosa soy sauce (Japan): The classic sashimi accompaniment. Recipe given.

Tsukemono: Takuan, umeboshi.

Usu-age (Japan): See Bean curd (fried) purses.

Winged bean. Yuba (Japan).

Brief biography: “For more than twenty years she has been professionally involved with Asian food as a writer, teacher, publicist, researcher, consultant, and, of course, cook. She has traveled extensively in Asia and lived in Hong Kong for more than ten years, working as a food writer on a number of newspapers and magazines, which led to a career as a food consultant. Her most recent book, *Asia the Beautiful Cookbook* was listed by *Publishers Weekly* as one of the best books of 1987.” Address: Author of several books on Asian cuisine.

556. Wilson, Lester A.; Murphy, Patricia A.; Gallagher, Paul. 1992. Soyfood product markets in Japan: U.S. Export opportunities. Ames, Iowa: MATRIC (Midwest Agribusiness Trade Research and Information Center). x + 64 p. April.
 • **Summary:** Contents: Figures. Tables. Acknowledgments. Introduction. I. Soybean processing (by Wilson and Murphy). Food from soybeans: Soybean chemical composition, environmental influences on soybean composition. Soyfood manufacture: Soymilk, tofu, momen

tofu, kinugoshi tofu, packed tofu, aseptically-packaged tofu, deep-fried tofu, kori tofu. Tofu-related research: Recent studies at Iowa State University, summary, future research. Other nonfermented soyfoods: Yuba, kinako, texturized soy protein foods. Fermented soyfoods: Miso, shoyu, natto, tempeh. Japanese Agricultural Standards (JAS). Identity preservation and transportation. U.S. soybean quality and the Japanese market: Grain quality, judging quality, potential new markets.

II. Japanese soyfood markets (by Gallagher).

Demand and growth prospects: Consumption patterns, demand analysis, forecasts. The U.S. share of the food soybean market: Sources and uses, market share analysis, determinants of relative prices, prospects. Trade and trade barriers: Soybeans, processed products. Summary and recommendations.

Appendixes: A. Excerpts from specifications and standards of food additives, etc.—Manufacturing and storage of tofu. B. Excerpts from standards and certification systems in Japan. C. Additional agricultural standards for soybeans. References.

Table 2.1 shows soybean use for soyfood production in Japan; actual (1986) and projected (2000). Soybeans for tofu are expected to increase from 524,000 to 609,700 tonnes. Soybeans for miso are expected to decrease from 156,000 to 101,600 tonnes. Soybeans for natto are expected to increase from 92,000 to 118,600 tonnes. Figures 2.1 to 2.4 show Japanese per capita consumption of tofu, natto, miso, and soy sauce from 1965 to 1988. Tofu: Japanese annual per capita consumption of tofu has risen since 1965, except that it fell during 1973-1977. In 1965 about 3.6 kg/capita of soybeans were used to make tofu, increasing to 4.4 kg/capita in 1988. If 1 kg of soybeans yields 2.8 kg of tofu, then per capita tofu consumption in 1988 was 12.32 kg or 27.1 lb.

Natto: Japanese annual per capita consumption of natto has risen steadily, from a little less than 0.4 kg in 1965 to 0.6 kg in about 1968, to 0.8 kg in 1988.

Miso: Japanese annual per capita consumption of miso fell from 8 kg in 1965 to about 5.4 kg in 1985, then it began to rise to about 5.7 kg in 1986.

Soy sauce: Japanese annual per capita consumption was about 12 liters in 1965. It fell to 11 liters in 1967, rose to 13 liters in 1973, then fell to 9.8 liters in 1985, after which it rose for 1 year. Address: 1-2. Prof. of Food Science and Human Nutrition; 3. Assoc. Prof. of Economics. All: Iowa State Univ. Phone: 515-294-0160.

557. Stincheum, Amanda Mayer. 1992. Fu and yuba, tasty specialties of Kyoto. *New York Times*. June 7. p. XX6, XX26 (Sunday).

• **Summary:** These two foods are “so tied to place, history and freshness that they can really be fully enjoyed only in Kyoto.” Fresh wheat gluten (*nama fu*) has a chewy but tender consistency. Fresh yuba (*nama yuba*) comes in “delicate,

semi-soft, tissue-thin sheets skimmed from the surface of simmering soy milk.” Both are almost never found outside Japan, and rarely outside Kyoto.

Describes how fu is made and served. Fu was brought to Japan from China during the Muromachi period (late 14th to 16th centuries). Rich in protein, it developed as part of the vegetarian cuisine that evolved in Buddhist temples. Because Buddhists refrain from killing sentient beings, all temple foods were (and still are) derived from plants. Kyoto became famous for fu, in part because of its abundance of Buddhist temples, and in part because of the quality of its well water. At the peak of its popularity in the 1800s, fu was made in over 100 specialty shops in the city. The name of one street, Fuyacho, still attests to the former aggregation of fu makers in this area.

Today Fuka, founded 160 years ago and located just west of the Imperial Palace, is one of the very few shops that makes only fu and nothing else. The proprietor, Koboro Shoji, makes all the classic varieties of fu, which are listed and described.

An equally interesting and detailed description of making yuba at Yubahan is also given. Asano Tomizo is the 9th generation of yuba makers who have practiced their craft since 1716. Address: Japan.

558. Leneman, Leah. 1992. *The tofu cookbook*.

Hammersmith, London, England: Thorsons—An imprint of HarperCollins Publishers. 127 p. Illust. Index. 24 cm.

• **Summary:** “These no-meat, no-dairy, cruelty-free recipes foster health and a healthy environment by replacing meat and dairy products in traditional recipes with tofu... and soy milk. From bouillabaisse and guacamole to lasagna, curries, and ice cream, here are delicious new takes on your favorite international recipes.” The copyright page notes: “Many of these recipes previously appeared in *The International Tofu Cookery Book* and *Soya Foods Cookery*.”

Contents: Introduction. Types of tofu. Other soya (soy) foods: Soya milk, soya yogurt, soya mayonnaise, bean curd sticks or sheets, tempeh, soy sauce, miso, soya cheese (such as Veeze). Notes on recipes. Making tofu at home. 1. Soups and dips. Note: Ingredients for every recipe are given in both Imperial/Metric and American units. 2. Salads. 3. British- and American-style dishes. 4. Mexican-style dishes. 5. Mediterranean-style dishes. 6. Indian-style dishes. 7. Chinese- and other Far Eastern-style dishes. 8. Desserts. Recipe reference chart (for quick and easy recipes, recipes suitable for a single portion, and recipes for a dinner party).

Note: *Webster's Dictionary* defines bouillabaisse (pronounced bu-yuh-BAYZ, a term derived from the French and first used in 1855) as a highly seasoned fish stew made with at least two kinds of fish. See also: Potpourri. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

559. So, Yan-kit. 1992. *Classic food of China*. London:

Macmillan. xii + 387 p. Illust. (incl. many color photos by Tim Hill). Index. 25 x 20 cm. [55 ref]

• **Summary:** The author, a woman, has been called “Britain’s foremost authority on Chinese cookery.” Her first book, *Yan Kit’s Classic Chinese Cookbook*, won both the Glenfiddich and the André Simon awards for 1984. This is an extremely interesting, well-written and practical book. As she explains in the Preface, the author is deeply interested in the history of and deeper questions about Chinese food. She grew up in Hong Kong. Her audience is both Chinese and non-Chinese who have an enthusiasm for food. She first began to cook for Westerners more than thirty years ago, first as a foreign student and later as the wife of an American academic, when she “entertained her husband’s colleagues and students in Syracuse, upstate New York, as well as his family in Philadelphia and Waterford, Connecticut.

Contents: Acknowledgements. A note on the spelling of Chinese words (using the Pinyin system, where c = ts; q = ch; x = hs; z = dz; zh = j). A note on the translations (with a map of China’s four main cookery regions {northern, eastern, western, and southern}). Main Chinese dynasties (p. xi, starting with the Xia, from approx. 21st to 16th century BC). Preface. Introduction. Culinary traditions. Important culinary books (p. 21-43, an excellent essay). Chinese festivals (p. 44-63). Tea. Regional diversities. Foreign influences. The recipes (p. 119-352, including one chapter titled “Bean curd dishes,” p. 208-22).

Preparatory techniques. Steamers and steaming. Basic ingredients. Glossary. Main references (many of which are reprints of Chinese food classics).

The author uses the Introduction to discuss important figures in the history of Chinese food. These include: (1) Su Dongpo (1037-1101, also named Su Shi) (p. 2-4), the famous 11th century Song poet who called himself “the old gourmand.” Of the many poets in the Tang and Song dynasties, when Chinese poetry “reached its zenith, he was the most unabashed and unrestrained when writing about food and wine.” An illustration shows Su Dongpo. In spite of his great spiritual awareness and his inclination toward Buddhism and Daoism, he did not become a vegetarian until he was in old age, when his health began to fail. During his turbulent career, he traveled widely in China and wrote about the different foods he encountered. He was especially fond of pork and he became an expert in the different ways of preparing it. A famous Hangzhou dish is named Dongpo Pork. He said he was willing to die for the taste of the Yangzi porpoise or globe fish (fugu in Japanese) even though he was well aware that it could be fatally poisonous if prepared improperly—“the poison lodging in the liver, the roe, and the reproductive glands.”

(2) Confucius (551-479 BC, also named Kong Fuzi or Kongzi) (p. 4-7). An illustration shows Confucius, China’s foremost and most influential sage and the author of *The Analects*. He believed that each man must first build up his

own moral character. The ideal moral man, the ‘gentleman,’ aspires to benevolence, virtue, intelligence, courage, and learning. His attitude toward food was neither obsessive nor passionate, but simple and austere. He wrote: With coarse rice to eat, with water to drink, and my bended arm for a pillow, I still have joy in the midst of things. Modern China went through a vehement anti-Confucius era, especially from 1966 to 1976 during the Cultural Revolution, yet his influence is now returning. He advised eating more rice than side dishes or meat. Prepare food carefully and practice good sanitation. He did not converse at meals.

(3) Mencius (372-289 BC, also named Menzi) (p. 7-9). “The attitude of a gentleman towards animals is this: once having seen them alive, he cannot bear to see them die, and once having heard their cry, he cannot bear to eat their flesh. That is why the gentleman keeps his distance from the kitchen.” Chinese trace to Mencius the very relaxed attitude they have toward the complete enjoyment of food; it is human nature—yet no one can find a source by Mencius for this idea. An illustration shows Mencius.

The chapter on “Culinary traditions” (p. 10-20) continues this discussion of important figures in the history of Chinese food. (4) Yi Yin (lived ca 1600 BC to 1549 BC in the Shang dynasty) (p. 10-15) “is regarded as China’s first master of gastronomy. His role as cook and later prime minister to King Tang, founder of the Shang dynasty (16th to 11th century BC) is mentioned in official history, but it is through the writing of Lu Buwei, of the 3rd century BC, that Yi Yin’s gastronomic tenets have come down to posterity.” His principles: Waste nothing; put everything to its best use. Use fire with skill—as in steaming and stir-frying. Blend the five tastes harmoniously—salty, bitter, sour, pungent, and sweet. Each taste corresponds to one of the five elements—water, fire, wood, metal, and earth—an idea that was already part of Chinese tradition by the 3rd century BC. Balance the two great forces: yin and yang. Yi Yin, a virtuous man, was promoted from the kitchen to become a minister at court.

(5) Cook Ding, as written by the Daoist philosopher Zhuangzi (Wade-Giles: Chuang Tzu). Cook Ding was carving an ox for Lord Wen-hui. His principle was to follow the Dao (Tao), even when carving an ox—so that his knife never became dull. There follows the story of how a noodle master makes “dancing noodles” following five distinct procedures.

(6) Woman cooks: The Buddhist nun Fan Zheng, as told during the Song dynasty. *Sous-chef* Liu of the Southern Song dynasty. Mrs. Song (12th century). Mrs. Chen (19th century), dubbed “Mapo” or the pock-marked woman. She and her husband, also a cook, lived in Chengdu, capital of Sichuan, where they ran a tavern together. She developed Mapo Doufu, made of bean curd [tofu] with a spicy meat sauce, which is today “one of the most renowned Chinese dishes in the world (see recipe p. 218).

(7) Wang Xiaoyu (p. 18-20) is “the only chef who has

a biography written about him, albeit brief and published posthumously.” For ten years until his death, Wang was employed by Yuan Mei (1716-1797), China’s most renowned gastronome / gourmet and cookery writer of the 18th century (Qing dynasty). Yuan Mei was also a well-known poet, scholar and artist, born in today’s Hangzhou in Zhejiang province in eastern central China. “Yuan had written many short biographies and each was about a person of special merit, either a literary figure, an official, a member of the aristocracy or one of his female pupils from noble families. That he included in his series Wang, whom he identified as but ‘a lowly person,’ reflects the great admiration he had for his cook.” It is all the more remarkable that a master would write a tribute to a cook, who most masters took for granted. Yet after ten years, Yuan and Wang developed a very special relationship, so close that it transcended the typical one between master and servant. Wang did his own shopping at the market to obtain the very best ingredients. In his famous cookbook, Yuan Mei wrote a great deal about Wang’s thought and practice. Yuan was very pleased that Wang, instead of seeking employment with rich or aristocratic families, “preferred to remain in his kitchen until he died.” Continued. Address: England.

560. So, Yan-kit. 1992. *Classic food of China* (Continued—Document part II). London: Macmillan. xii + 387 p. [55 ref]

• **Summary:** Continued. The chapter on “Important cookery books” continues where the previous two chapters left off—with a fascinating, in-depth discussion of the history of Chinese cookery, but with more focus on books, including: (1) *Shi Jing* or *The Book of Food*, by Cui Yao who was executed for treason in AD 450. All but the preface has been lost. (2) *Qimin Yaoshu* or *Essential Skills for the Daily Life of the People*, by Jia Xie, written between AD 533 and 544. (3) *Shi Jing* or *Book of Food* by Xie Feng, written around 600 AD. (4) *Shi Pu* or *Book of Recipes* by Wei Juyan, written during the early 8th century. (5) *Zhonggui Lu* or *Records of Home Cooking* by Mrs. Wu, written during the Song dynasty (AD 960-1279). (6) *Shanjia Gongqing* or *The Simple Offerings of a Mountain Hermit* by Lin Hong, written in the 13th century. He is acknowledged as the first person who used the modern term *jiangyou* for soy sauce. (7) *Yinshan Zhengyao* or *The Principles of Correct Diet* by Hoshi (or Hu Sihui in Chinese), written in about 1314-1321 (Yuan dynasty). (8) *Yunlin Tang Yinshi Zhidu Ji* or *The Food System of the Yunlin House* by Ni Zan (lived 1301-1374; Yuan dynasty). (9) *Suiyuan Shidan* or *The Cookery Lists of Suiyuan* by Yuan Mei, published in 1792, five years before his death. A superb biography of Yuan Mei is given, together with a discussion of his influence on Chinese cookery.

The chapter on “Chinese festivals begins: “In 1912, the Republic of China officially adopted the Gregorian calendar used in the West, but the old lunar calendar, calculated more than four thousand years ago, has persisted, and it

is according to this system that all the traditional Chinese festivals are celebrated to this day.” The food served at each festival and the symbolism are described. The main festivals are: Chinese New Year, Double Fifth Festival (5th day of the 5th lunar month), Mid-Autumn Festival (15th day of the 8th lunar month).

Peking food stalls and hawkers offer “deep-fried bean curd triangles or squares... For breakfast they serve freshly made warm soybean milk, which is naturally sweet, to go with ‘youtiao,’ the deep-fried twin-strip dough that is mildly savoury, and not unlike an elongated doughnut, only more crispy to the bite and soft inside. Unless you are an early riser, you run the risk of having them been sold out before you get to the street corners where they are sold. Youtiao are arguably the most sought after and adored breakfast street food sold in China, though it is only in the north that they are twinned with soybean milk” (p. 80).

Many of the recipes in this book are based on those of classical Chinese cooks such as Yuan Mei and Su Dongpo. Soy-related recipes: Bean curd salad (p. 124). Bean curd skin rolls [yuba] (p. 140-42). Butterfly prawns in red bean curd cheese [red fermented tofu] (p. 147).

The chapter titled “Vegetarian dishes” (p. 170-90) begins with a history of vegetarianism in China. In the *Qimin Yaoshu* the chapter titled “Vegetarian food” contains China’s first vegetarian dishes. Steamed wheat gluten or kaofu is a favorite in Shanghai (p. 176-77). Red-braised bean curd (p. 188-89). Sour and spicy bean curd cubes (p. 190).

The chapter on “Bean curd dishes” (p. 208-22) has recipes for: Homemade soy bean milk. Bean curd with scrambled egg. “Bless the old and the young.” Braised bean curd puffs. Sautéed bean curd with spinach. Braised bean curd with bean sauces. Stir-fried bean curd with minced dried shrimp. Mapo doufu. Guotie bean curd. Green egg bean curd. Iced bean curd casserole [frozen tofu].

Mussels in black bean sauce (p. 257). Steamed grey mullet with puréed black bean sauce (p. 274).

The glossary (p. 364-80) has entries for: Bean curd. Bean curd ‘cheese,’ red fermented [red fermented tofu]. Bean curd ‘cheese,’ white fermented. Bean curd puffs [deep-fried tofu puffs]. Bean curd skin [yuba]. Black beans, fermented [fermented black soybeans]. Broadbean paste or soy bean paste, spicy hot. Ground (crushed) yellow bean sauce. Hoisin sauce. Soy bean paste, hot. Soy sauce.

About the author (inside rear dust jacket): Born in her ancestral village of Zhongshan, Guangdong province, she grew up and was educated in Hong Kong, where she graduated from the University with a starred first degree in history. She went on to acquire a DPhil [PhD] at the University of London. She was married twice, first to a Chinese surgeon whom she divorced, and then (in 1962) to the American historian Briton (“Brit”) Martin Jr., who was the great love of her life. Their son Hugo (to whom this book is dedicated) was born in 1965, when they were at Syracuse

University, New York. The family later went to Poona in India, where Brit was taking up an academic post, but, tragically, he died of a brain tumour in 1967, while still only in his 30s.

Brit’s death was a watershed in Yan-kit’s life and, for several years, her efforts to pull herself out of the consequent slough of grief had only limited success. Indeed, in 1976 she suffered a breakdown. Her subsequent salvation lay in taking up food studies and cookery, of which she proved to be a brilliant teacher. / Address: England.

561. Leneman, Leah. 1993. 365 plus one vegan recipes: Delicious meals and ideas for every day of the year. Hammersmith, London, England: Thorsons—An imprint of HarperCollins Publishers. 144 p. April. Index. 24 cm. • **Summary:** Chapter 1 of this book, titled “The Vegan Dairy,” gives recipes for homemade soya milk, mock cream (from soya milk), soya flour cheese, yogurt cheese (from soya yogurt). There are also recipes for cashew or almond milk, cashew cream, and cashew cottage cheese.

Chapter 11 (p. 85-100), titled “Tofu and other Soya Foods,” contains a long introduction plus the following recipes: Home-made tofu. Tofu and onions. Sweet and sour tofu and vegetables. Sea-flavored crisp tofu slices. Mushroom stroganoff. Tofu kebabs. Tofu casserole. Warming winter stew (with tofu). Korean-style kebabs (with tofu and miso). Tofu and green pea bhajia. Tofu ‘scrambled eggs.’ Scrambled tofu and mushrooms. Tofu piperade. Spicy tofu scramble with red pepper and tomato. Tofu knishes. Tofu and pea curry. Tofu burgers. Swiss steak (with frozen tofu). Savoury tofu ‘mince’ (with frozen tofu). Crispy fried sea-flavoured frozen tofu. Tofu goulash. Smoked tofu stew. Smoked tofu, courgette and sweetcorn risotto. Smokey duvec (with smoked tofu). Pease pudding and smoked tofu bake. Smoked tofu pasties. Steamed savoury smoked tofu pudding. Smoked tofu charlotte. Lek and smoked tofu au gratin. Smoked tofu and mashed potato cakes. Tempeh croquettes with mushroom sauce. Tempeh hash with potatoes. Indonesian-style tempeh. Tempeh stroganoff. Japanese-style tempeh kabobs. Tempeh burgers. Tempeh chilli. Mock ‘ham’ (with dried bean milk sheets [yuba]). Mock ‘chicken’ (with yuba). Mock chicken cooked Indonesian style.

Chapter 13 is entirely about sea vegetables, and a number of the recipes contain tofu, tempeh, miso, or soya milk. A number of other recipes throughout the book also use soyfoods as an ingredient. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

562. Shi, Yanguo; Ren, Li. 1993. Dadou zhipin gongyi-xue [The technical arts of soybean products]. Beijing, China: Zhongguo Qinggong Yechu Banshe [Chinese Ministry of Light Industry]. xii + 484 p. Illust. No index. 18 cm. [34 ref. Chi]

• **Summary:** Wade-Giles reference: *Ta-tou chih p’in kung-i*

hsüeh, by Shi, Yen Kuo; Jên, Li. Contents: Preface. 1. Introduction to soyfoods: Terminology and classification, origin and development, future prospects. 2. Soybeans: Production, seed structure and components. 3. Chemical composition of soybeans: Soybean lipids, carbohydrates, minor components. 4. Soy proteins: Overview, molecular weight and classification, water solubility, denaturation, functionality, soy enzymes and antinutritional factors.

5. Soy oil extraction: Oil extraction from soybeans, solvent extraction principles and process outline, pre-extraction preparation, extraction process, other extraction technology, supercritical CO₂ extraction. 6. Chinese traditional soyfoods: Principles and ingredients, soybean soaking and cleaning, soymilk preparation for tofu processing, coagulation and molding, lactone tofu, yuba, meat alternatives. 7. Fermented tofu: Varieties (total 14 discussed), ingredients, microorganisms, muced fermented tofu & process, top 8 products. 8. Fermented black soybeans and fermented soy paste (miso): Fermented black soybeans, fermented soy paste.

9. Soymilk (soy beverages): Production principle and outline, beany flavors and reduction, several commercial production lines, fermented soymilk, dry soymilk products. 10. Products from defatted meal: Defatted soy flour, soy protein concentrates (*dadou fenli danbai*), soy protein isolates (*dadou nongsuo danbai*), structured soy protein products, soy emulsifiers, applications of soy protein products. 11. Soy by-products utilization: Okara and its uses, soy whey and its uses. 12. Biological and chemical assay methodology: Assay for protein solubility, soy protein isolation, soy protein molecular weight measurement, gas chromatographic analysis of soy oligosaccharides, HPLC analysis of soy oligosaccharides, phytic acid assay, assay for hexanal – the major beany flavor component, trypsin inhibitor assay, lectin assay, urease assay, lipoxigenase assay, soybean cell biology: thin sample preparation technology, soybean cell biology: ultra thin sample preparation technology.

Concerning fermented tofu (Chapter 7): Fermented tofu may be named after the region where it is made. Some famous products in China include: (1) Shaoxing furu. Famous for its rice wine, Shaoxing is a city in northeastern Zhejiang, a coastal province in central eastern China. (2) Guilin furu. Guilin is a city in the northeast of the Guangxi Zhuang Autonomous Region of far southern China. (3) Kedong furu. Kedong is a county in Heilongjiang province in northeastern China. (4) Jiajiang furu. Jiajiang is a county in Sichuan Province, southwest China. (5) Tangchang doufu-ru. Tangchang is a town in Sichuan province.

Note: Talk with KeShun Liu. 2001. July 9. Green vegetable soybeans (*maodou*) are not mentioned in this book. Address: China.

563. Kushi, Michio; Kushi, Aveline; Jack, Alex. 1993.

Macrobiotic diet: Revised and enlarged edition. Tokyo and New York: Japan Publications. 400 p. Illust. Index. 21 cm. [67 ref]

• **Summary:** Edited by Alex Jack, this is the revision of a book first printed in 1985.

The chapter on “Beans and bean products” has the following contents: Daily use. History. Quality. Varieties: Azuki beans, black-eyed peas (sometimes known as yard-long beans), black turtle beans, broad beans, chick-peas, great northern beans, kidney beans, lima beans, lentils, mung beans, navy beans, peas, pinto beans, soybeans (p. 195-99) (introduction, miso, natto, okara, soy flour, soy grits, soy milk, soy oil, shoyu, tempeh, tofu {incl. nigari, fresh tofu, soft tofu, firm tofu, deep-fried tofu, pickled tofu, fermented tofu, frozen tofu, dried tofu}), vilia, soy yogurt, yuba.

For information on cooking soy, see p. 204-07. Note: Natto is not usually made with koji (p. 207). For “Health benefits” and for “Soy foods and cancer research” (p. 208-09).

Black soybeans (also known as “Japanese black beans”) are mentioned on pages 60, 121, 189, 200, and 204.

“Natto is a fermented soybean product that resembles baked beans connected by long sticky strands. Its strong odor takes some adjusting to but once appreciated natto is enjoyed regularly as a small side dish or condiment” (p. 196). Address: 1-2. Brookline and Becket, Massachusetts.

564. So, Yan-kit. 1993. Yan-kit’s classic Chinese cookbook. London: Dorling Kindersley Ltd., London. 239 p. Illust. (color photos). Index. 24 cm. [1 ref]

• **Summary:** This is a remarkable Chinese cookbook. Although the text of this book was copyrighted in 1984, the photographs, layout and design have been updated to 1993. The first 192 pages of the book are printed in full color on glossy paper. The author is a woman—lovely, cultured, and centered.

In the section on “Ingredients” is a two-page spread titled “Beans and bean products” (p. 12-13) of 12 fine color photos, each with a caption and Chinese characters. They are: (1) Bean curd, fresh [fresh tofu]. (2) Bean curd, puffed [deep-fried tofu puffs], used to absorb tastes and juices. (3) Bean curd sheet [thin dried yuba sheet]; must be moistened before use. (4) Black beans, fermented [fermented black soybeans]. “Whole soybeans preserved with salt and ginger.” (5) Red beans (azuki). (6) Red bean paste: a thick paste made from puréed, sweetened azuki beans, often used a filling for sweets.

(7) Bean curd “cheese,” red fermented [Fermented tofu with ang-kak], with salt and rice wine. (8) Bean curd “cheese,” white fermented [Fermented tofu], with or without chili. (9) “Crushed yellow bean sauce: purée of fermented yellow soybeans, wheat flour, salt and water” [with fermented black soybeans]. (10) “Szechwan [Sichuan] chili paste: spicy hot paste of dried chili and crushed yellow

bean sauce.” (11) “Soybean paste: paste of crushed soybeans combined with chili, sugar and salt.” (12) “Yellow beans in salted sauce: Whole yellow soybeans fermented with salt, wheat flour and sugar” [with fermented black soybeans].

Also in the section on “Ingredients” is another two-page spread titled “Sauces, oils, fats, wines and vinegars” (p. 26-27) which states: “Soy sauce is the most basic but also the most important seasoning. Used with salt, it helps to turn simple ingredients into Chinese cuisine.” Shallow, round “viewing” dishes contain: (1) Thin soy sauce. (2) Thick soy sauce. (5) “Hoisin sauce: soybeans, wheat flour, salt sugar, vinegar, garlic, chili, and sesame oil. (6) “Sweet bean sauce: Made from crushed yellow bean sauce combined with sugar. Note: The four vegetable oils shown are corn oil, sesame oil, peanut oil, and hot chili oil.

Soy related recipes (the page with recipe appears before the page with the photo): Bean curd soup (p. 58, 57). Steamed prawns in mixed bean sauce (with “1 tablespoon fermented black beans,” p. 78, 77). Bean curd soup with fish stock (with “2 cakes bean curd, drained,” p. 81, 83). Stir-fried clams in black bean sauce (with “1½ tablespoons fermented black beans, rinsed, mashed with 1½ teaspoons sugar,” p. 88, 87). Steamed trout with black beans and garlic (with “2 tablespoons fermented black beans, rinsed and partially mashed with ½ teaspoon sugar,” p. 95, 93). Willow chicken in black bean sauce (with “3 tablespoons fermented black beans, rinsed and mashed,” p. 106, 109). Soy sauce chicken (with “½ pint thick soy sauce,” p. 116, 115).

Green pepper beef in black bean sauce (with “2½ tablespoons fermented black beans, rinsed and mashed with ¼ teaspoon sugar and 1 teaspoon oil,” p. 142, 141). Bean curd puffs (deep-fried tofu, p. 152). Eight-treasure vegetarian assemblage (with “1 tablespoon fermented red bean curd cheese, mashed with 1 teaspoon own juice or water” and “8 bean curd puffs, halved,” p. 153, 151). Wheat gluten (homemade, p. 156-57). Red-braised gluten (p. 157, 155). Pi pa bean curd (The “pi pa” is a celebrated Chinese musical instrument, p. 158-59). Pock-ma bean curd (“This internationally famous Szechwan dish was the creation of the wife of chef Ch’en Shen-fu, who worked in the [provincial] capital, Ch’eng-tu [Chengdu] during the 2nd half of the 19th century. If pockmarks on her face earned her this rather derogatory nickname, ‘Pock-ma’ or ‘Pock-woman,’ they also immortalized her bean curd dish” [Mapo doufu]. Ma stands for “mazi” which means a person disfigured by pockmarks. Po translates as “old woman,” p. 159, 161).

Deep-fried bean curd in earthen pot (with “4 cakes bean curd, drained,” p. 162, 161). A vegetarian menu (of the six dishes shown, 2 contain tofu, p., 168-69). Deep-fried bean paste sauce with noodles (with “1½ pounds ground yellow bean sauce,” p. 185, 181).

Deep-fried five-spice rolls (from Fukien, with “1 package dried bean curd sheets [yuba] {usually 8 ounces, containing 8 sheets, each 13 by 6 inches},” p. 195). Eight-

treasure bean curd (“The 18th-century poet and official Yüan Mei, wrote a cookery book called *Sui-yüan Recipes*, a unique legacy of his times from a Chinese man of letters. In the recipe called “Prefect Wang’s Eight-Treasure Bean Curd,” Yüan Mei briefly outlined how the dish traced its origin to the Imperial kitchen.” Includes “2 cakes bean curd, drained,” p. 215, 149). Bean curd in simple sauce (p. 219). Stir-fried spinach in bean curd “cheese” sauce (with “2½ to 3 cakes white bean curd ‘cheese’ with chili,” p. 220).

A Glossary (p. 227+), which starts with a page of definitions of “Beans and bean products,” defines the same items whose photos appear on pages 12-13. Likewise for the glossary page on sauces (p. 231). Address: England.

565. Andoh, Elizabeth. 1994. Tokyo’s rich array of regional dining. *New York Times*. March 6. p. XX6, XX19 (Sunday).
 • **Summary:** Contains excellent reviews of the following Tokyo restaurants: Konomi, Kakiden, Itosho, and Shigeyoshi. The latter served “warabi ferns wrapped in fresh yuba (broad ribbons of bean curd [tofu])” and a “soup, which contained cubes of tofu and strips of fried bean curd... well seasoned with a burnished brown miso.”

Note: This brief description of yuba is inaccurate; yuba is made from soymilk, not tofu. Address: Japan.

566. *Toyo Shinpo (Soyfoods News)*. 1994. Daizu shokuhin ga migoto ni tappuri. Kyôto eki no shôjin bentô [Abundant, delicious soyfoods in the vegetarian box lunch at Kyoto station]. April 1. p. 13. [Jap]

• **Summary:** In this box lunch, which retails for 1,000 yen at the Bullet Train line in Kyoto, there are 7 soyfoods: Seasoned, cooked rice with soybeans. Cooked and seasoned tofu burger (*ganmo*). Fried dried-frozen tofu (dusted with flour). Cooked black soybeans. Tofu *shûmai (shao-mai* steamed dumplings filled with tofu). Fried okara. Fresh yuba. Sesame tofu. An illustration shows the placement of foods in the octagonal box. With the recent boom in healthy foods in Japan, the popularity of this lunch among women has increased sharply.

567. Robesky, Fujie. 1994. Fuji Fresh Tofu Co. of San Jose is for sale for \$80,000 (Interview). *SoyaScan Notes*. Aug. 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Fujie is interested in buying a tofu company. When she went to visit this company in Japantown of San Jose, she discovered that it is for sale for \$80,000. Apparently the present owner, Linda Lam, is planning to return to her homeland, Vietnam.

Talk with Fujie Robesky. 1995. May 16. Apparently Linda Lam’s daughter has taken over the company and is now running it.

Television broadcast on JTN Local News (Lafayette, California; 5 Sept. 1995 7:25 a.m.). Linda Lam still owns Fuji Tofu Co., which makes: Ginger syrup tofu pudding,

Tofu egg rolls, Tofu steamed buns, and Seasoned yuba. They want to open a tofu vegetarian restaurant. Address: Hedge Computer Co., 1616 W. Shaw Ave., Suite B-3, Fresno, California 93711. Phone: (209) 226-3991.

568. Lee, Mu-Tsun [Mucun]; Huang, Shuhui. 1994. Tofu! Tofu! Tofu!: Chinese style. Monterey Park, California: Wei-Chuan Publishing Co. 79 p. Illust. (color). Index. 13 x 19 cm. [Eng; Chi]

• **Summary:** Contents: Conversion table. Soybean products: Soft tofu, hard tofu, bean curd skin (*fu p'i*) [yuba], pressed bean curd (*doufu gan*), bean curd strips and bean curd sheets ("Bai Yeh"). Homemade soymilk. Homemade tofu. Tofu: Salads, appetizers, frying, stir-frying, cooking in sauces, deep-frying, steaming.

For most recipes, there is one recipe on each two-page spread. A color photo occupies two-thirds of the left page together with the English-language list of ingredients. The rest of the recipe is on the right page. For the rest of the recipes, there is a second recipe with a small photo on the right page.

569. Gold Mine Natural Food Co. 1994. Macrobiotic, organic and Earthwise products for you and your home (Mail order catalog and price list). San Diego, California. 64 p. 28 cm.

• **Summary:** Soy-related products include organic black soybeans, organic yellow vegetable soybeans, organic aduki beans, Ohsawa soy sauce, Ohsawa tamari, South River miso, Junsei Yamazaki miso, Ohsawa yuba, Ohsawa organic dried tofu, and kuzu. Address: 3419 Hancock St., San Diego, California 92110-4307. Phone: 1-800-475-3663.

570. Huang, Quanyu; Andrulis, Richard S.; Chen, Tong. 1994. A guide to successful business relations with the Chinese: opening the Great Wall's gate. Binghamton, New York: International Business Press, an imprint of The Haworth Press. xii + 254 p. Index. 23 cm. [1 soy ref]

• **Summary:** This is a book about business etiquette, corporate culture and business negotiation in China. In Chapter 9, "The role of banquets," is a section titled "The characteristics of banquets" which states (p. 204): "Jimmy Carter wanted to taste the typical breakfast of *Doujiang* and *Youtiao* found in Beijing, which made the Chinese people crazy about him." A chapter endnote (p. 213) explains that these two words mean "Soya milk" and "A deep-fried twisted dough stick."

Page 205 continues: "Many Chinese people also pay attention to 'complete' as a characteristic of their banquet. Many Chinese foods are arranged in pairs, for example, *Youtiao* (a deep-fried twisted dough stick) is served with *Doujiang* (soya milk)."

In Chapter 10, "Giving gifts and accepting presents" is a section titled "The careful study of giving gifts" which

states (p. 222): "The pronunciation of *Fuzhu* is very close to the word for 'abundant' in Chinese... We want to give the reader a sense of the value that Chinese put on certain gifts. As a foreign guest, gifts such as *Fuzhu* may be thought of as cheap by some Chinese people.

"Along with seeking a gift with a lucky meaning, different social strata may like different kinds of presents. Though the New Year cake and *Fuzhu* are regarded as lucky and polite, they are rather conventional."

Fuzhu is defined (p. 227) as: "4. Dried bean milk cream shaped into tight rolls."

Note: In English, *Fuzhu* can also be translated as "dried yuba sticks." Address: 1-2. PhD.

571. Johnson, Natasha J. 1994. Traditional beancurd manufacture. Rugby, Warwickshire, England: Intermediate Technology. 39 p. Illust. No index. 21 cm. [11 ref]

• **Summary:** Contents: Introduction. Manufacture. Packaging. Equipment. Coagulating agents. Modern methods of manufacture in China. High yield beancurd. Beancurd products (Chinese names are given in pinyin; a photo shows each product): Deep-fried beancurd (*you doufu*), Deep-fried beancurd balls (*yuanzi*), Dry / pressed beancurd (*doufu gan*), Beancurd cutlets (*nan hua gan*), Beancurd roll (*kunji*), Smoked beancurd (*xun doufu*), Spiced beancurd (*xiang gan*), Stewing spice beancurd (*luzhi doufu gan*), Long life beancurd, Fermented beancurd (*feru*), Beancurd bamboo (*fuzhu / dousun [dried yuba sticks]*), Frozen beancurd (*dong doufu*), Flavoured beancurd, Specialties (Jinxi ginger beancurd, Shaoyang pork roll, bean paste (*douhu*)), Beancurd silk (in the form of long strands), Heat processed beancurd, Instant beancurd mix. Use of by-products. Cooking with beancurd. References. Acknowledgements.

Note: This is the earliest English-language document seen (Oct. 2011) that uses the term "Fermented beancurd" to refer to fermented tofu.

Concerning smoked tofu: A clear illustration shows the cylindrical smoking chamber, apparently made from a 55-gallon drum. At the bottom is a 20-cm layer of smoking rice bran, half way up is a perforated metal sheet, and near the top is a rack on which the squares or strips of firmly-pressed tofu are smoked, and on top is a cover. Smoking takes several hours and may be cold smoking {below 30°C} or hot smoking {below 70°C}. The tofu is smoked slowly, turning it over when the surface is brown to give a distinctive flavour, colour and aroma. After smoking, the texture is firm and the product can be stored for 10 days without refrigeration due to the natural preservatives present in the smoke and the drying action (25% weight loss by evaporation)." Page 26 describes how a highly-flavored product is made by mixing pressed tofu with various spices, sugar, salt, and diced vegetables. It is steamed for 10-12 minutes, mixed with vegetable oil, spread on a bamboo mat, left in the sun to dry, then smoked to give it a golden color.

Photos show: Smoked tofu squares on a woven bamboo tray. Rectangular pieces of tofu, each pressed in a cloth.

This booklet provides an excellent introduction to traditional methods of making tofu and tofu products in China, with many clear illustrations and photos. The author did the research while working at the Human Agricultural University in China. The publisher is working to enable low-income people in the Third World to develop and use technologies which give them more control over their lives and contribute to the long-term development of their communities.

In addition to reviewing the many varieties of tofu and tofu products in China (from deep-fried tofu to instant tofu mix), the booklet discusses of traditional manufacturing principles, those which have potential for large-scale manufacture, coagulants, and packaging equipment.

For further information contact Intermediate Technology, Myson House, Railway Terrace, Rugby, Warwickshire CV21 3HT, England, UK.

Updated address (based on letter of March 1995): Ms. Natasha Johnson, c/o United Biscuits, Asia Pacific Ltd., 4506 China Resource Bldg., 26 Harbour Road, Hong Kong. Address: IT, Myson House, Railway Terrace, Rugby CV21 3HT, England. Phone: 0788 560631.

572. Rosas, Juan Carlos; Young, Roberto A. 1994? El cultivo de la soya. Quinta edición [The cultivation of soya. 5th ed.]. *Departamento de Agronomía (Zamorano, Honduras)*, Publication No. AG-9603. 68 p. Undated. [Spa]

• **Summary:** Contents: 1. Overview: Economic importance, chemical composition, history, taxonomy. 2. Morphology of the soybean plant. 3. Physiology of the growth and development of the soybean plant: Stages of development. 4. Environmental factors that affect the cultivation of soya: Soil, water, irrigation, light / photoperiod, temperature, period of growth. 5. Practical cultivation: Preparation of the soil, time of planting, density of planting, quantity of seeds, systems of cultivation, control of weeds (methods of weed control, chemical control). 6. Mineral nutrition of soybeans (and inoculation). 7. Diseases that affect the cultivation of soybeans and their management: Bacterial, fungal, viral, other, seed treatment. 7. Insects that attack soybeans. 8. Harvest and storing. 10. Improvement of soybeans. 11. Processing and utilization: Industrial processing (extraction of oil, soy flours, soy protein concentrates {*concentrados proteícos de soya*}, soybean cake). Direct consumption: In the Far East, the soybean is consumed in the form of fermented and non-fermented foods. Fermented foods include shoyu, miso, mato [sic, natto], and tempeh, while non-fermented foods include soymilk (*la leche de soya*), tofu, yuba (*juba*), and kinako. 12. The cultivation of soya in Honduras (history).

In 1972, the Ministry of Natural Resources (*Ministerio de Recursos Naturales*) reported the initiation of commercial

soybean production on a small scale in various departments of the country (Olancho, El Paraíso and Comayagua).

Three varieties were used at that time: Biloxi, Hardee and Jupiter. However, before these reports were made, at the Panamerican Agricultural School (*la Escuela Agrícola Panamericana (EAP)*), some hectares had already been planted with the varieties Jupiter and Pelican. Discusses additional developments in 1974, 1982, 1986, 1987, and 1988. Address: 1. PhD; 2. PhD.

573. Simonds, Nina. 1995. Dumplings, for a lucky Year of the Pig. *New York Times*. Jan. 25. p. C1.

• **Summary:** Chinese dumplings, which can trace their roots back 2,000 years, are epitomized by that that favorite New Year's delicacy *jiao-zi*. During the Ming dynasty (1368-1644) dumplings began to be the key dish at the midnight meal to welcome in the Lunar New Year. Describes the dumplings served at several Chinese restaurants in New York City. "The Lucky Friendship Restaurant on Mott Street in Chinatown, also has traditional items and new interpretations. Triple-delight dumplings contain three kinds of mushrooms wrapped in a soybean milk skin" [yuba]. Contains two recipes: Northern-style dumplings. Steamed open-topped dumplings.

574. Reichl, Ruth. 1995. Restaurants: Finding the real China in Queens with a man famous for knowing what is. *New York Times*. Feb. 24. p. C24.

• **Summary:** This is a review of three Chinese restaurants in Flushing, Queens. The writer accompanied Ken Hom, a man who was famous for his eight books on Chinese food. Ken was happy because he "had just tasted the spicy pickled bean sprouts at Golden Monkey [Sichuan; 133-47 Roosevelt Ave.]..." The dish was made with real soy beans and, for once, the dish contained enough oil—which Americans might not like.

A recipe that the menu calls "vegetable rolls" are actually "bean curd skins [yuba] so crisp they crackled with each bite, filled with juicy bean sprouts and brushed with a thick and pungent sesame sauce."

At Taipei Wall Sea Street Taiwanese Restaurant [135-05 40th Road], hot pots are the signature dish. "Taiwanese food is unlike any other and this turned out to be a fine place to sample it." One dish, which the menu called "fried homemade pork," consisted of "thin, chewy strips of meat marinated in fermented bean curd to give them a salty, funky flavor." One of the recommended dishes is "shredded pork with dried bean curd" [probably *doufu-gan*, which is pressed tofu].

575. Kawakami, Kozo. 1995. Tsureszure Nihon shokumotsushi: Dai 3 kan [Leisurely history of Japanese foods. Vol. 3]. Tokyo: Tokyo Bijutsu. 195 + 3 p. Illust. Index. 21 cm. [Jap]

• **Summary:** As the title implies, the author is writing about

50 foods he finds particularly interesting.

Entries containing an asterisk (*) are about or mention soy. About Mr. Kawakami (sensei) by TANAKA Seiichi. Dengaku tofu * (p. 1+). History of dengaku tofu * (p. 3+). Yuba * (p. 8+). Summary of “History of Tofu” * (p. 13+). Abura-age of tofu (Deep-fried tofu pouches) * (p. 17+). Itohiki natto * (p. 21+). Tororo (Grated tororo imo–glutinous yam—is often served atop dishes such as soba = buckwheat noodles) (p. 24+).

Oroshi daikon (Finely grated juicy raw daikon = Giant Japanese white radish) (p. 30+). Oroshi-gane (Grater) (p. 33+). Mentori daikon (One method of cutting the daikon root to keep the shape during the simmering) (p. 37+). Owari daikon and miyashige daikon (Names of daikon varieties) (p. 39+). Gobo (Burdock root) (p. 43+). Sasagaki gobo (burdock root) and sasagaki daikon (Sasagaki is a special shaving/cutting method. End result: the cut vegetables look like bamboo leaves) (p. 48+). Yatarazu (A kind of pickles) * (p. 52+). Kaku-ae (p. 55+). Asa-zuke (pickled asa) (p. 57+). Takuan-zuke (Pickled radish) (p. 62+). Osaka-zuke (p. 67+).

Fu, ki-bu, and shofu / sho-fu (Types of baked wheat gluten) (p. 70+). History of the development of fu (Part 1) (p. 76+). History of the development of fu (Part 2). Kanso-fu (dried) and Kaki-fu (Broiled) (p. 81+). Awase-fu and Yose-fu * (p. 86+; tofu is mentioned). Chirimen-fu (p. 88+). Tosa-fu (p. 91+). Shian-fu * (p. 94+; tofu is mentioned). Yamakawa-fu and Chiyo-fu (p. 97+).

Azuki beans and Aka (red) azuki beans (p. 101+). Dainagon azuki (a special variety of azuki beans) (p. 106+). Azuki no suri-jiru (Soup of pureed azuki) (p. 109+).

Hishio—the other name is shoyu no mi (Moromi mash & shoyu presscake) * (p. 115+). Suri-Hishio (ground hishio) * (p. 121+). Ume-bisho and Yubi-hishio * (p. 125+). Hishio and shishi-bishio * (p. 130+). Azuki Kai (Azuki porridge), Aka-kai (Porridge), Uncho-juku (Porridge) (p. 133+). Unzo-kai (Porridge) and Unzo (p. 138+). Kowai and Seki-han (Rice recipes; Sekihan is red azuki rice) (p. 141+). History of shiso (Shiso leaves are translated as “Beefsteak leaves”) (p. 148+).

Asazuki (p. 150+). History of Karashi and Keshi (p. 153+). What is Araragi? (p. 158+). Tade / Tade (p. 163+). Itachi hajikami and Inu sansho (p. 167+). History of sansho (Sansho seeds are one type of spice) (p. 170+). Hajikami and Shoga (Ginger) (p. 174+). History of myoga (A Japanese leafy plant with a strong flavor that is often used for a topping for Hiyayakko Tofu) (p. 178+). Myoga-take (p. 181+).

Sai? Seki (Chinese Name) and Niragi * (p. 184+). Kawakami sensei and the Rikagaku Kenkyujo (Note: *Rikagaku* means physics and chemistry), by MATSUSHITA Sachiko, Honorary Professor of Chiba University (p. 190+). 96 Years of my father’s life by Kozo Kawakami’s eldest son (Tadashi? / Tsutomu?) (p. 192+). My father, Kozo Kawakami,—A view from his 2nd son (p. 194+).

A photo (p. 191) shows the members of the Rikagaku Kenkyujo seated together on tatami mats in a room. A separate outline sketch and legend shows the name of each member.

The section titled “Kawakami sensei and the *Rikagaku Kenkyujo*,” by Prof. Matshita states (p. 190): I was able to receive his guidance for 20 years ever since I became a member of the Ryôrisho Genten Kenkyu Kai, a study group that started in 1994. They met at Keio University’s old wooden classroom. These people studied old culinary documents together. I listened to his lecture on the *Ryôri Monogatari*. I could not do my present work that involves Edo period culinary literature without his influence.

I also saw him at the members meeting, visited his home, listened to his talks, and took a look at his sketchbooks on many occasions. On those occasions, he enjoyed talking about his experience at Riken (Rikagaku Kenkyusho) before the war and his teacher Dr. SUZUKI Umetaro. His work on the history of Japanese Food History got started after he retired. His work before his retirement was on agricultural chemistry (*nogei-kagaku*). He worked mostly on Vitamin A at Dr. Umetaro SUZUKI’s Lab. in Rikagaku Kenkyusho until he moved to Manshu Kokuritsu Tairiku Gakuin in 1937. He received his PhD in Agriculture.

I first met him at a funeral of the late TSUJI Michiyo sensei in June 1989 held at Enmeiji Temple in Urawa. The late TSUJIMURA Michiyo sensei was in the same lab as Kawakami sensei.

The photo on the next page shows the golden age of Riken group who worked under Dr. Suzuki. I made a copy of one of the 3 photos from late TSUJIMURA Michiyo Sensei’s album. He didn’t have any photos from our days in Manchuria, so I was very happy and drew the picture below. The man in the center in the dark suit is Kawakami sensei.

Letter (e-mail) from Naomichi Ishige, Japanese food historian. 2008. May 18. KAWAKAMI Kozo, who passed away in 1994, was the foremost philologist on Japanese food culture. Thus, his writing is reliable enough. Continued. Address: Japan.

576. Kawakami, Kozo. 1995. *Tsurezure Nihon shokumotsushi: Dai 3 kan* [Leisurely history of Japanese foods. Vol. 3]. Tokyo: Tokyo Bijutsu. 195 + 3 p. Illust. Index. 21 cm. [Jap] • **Summary:** The chapter titled natto (*itohiki nattô*; p. 21-23) states: Within the natto family, there are dry types, *shiokara natto* (salty natto) and *itohiki natto* (regular / sticky natto) which can make sticky threads when it is moist, stirred with a pair of chopsticks, and picked up (as with chopsticks). It is thought that shiokara natto appeared in the Heian period because its name appears in the book titled *Shinsarugakuki* in around 1062 as *tsuki shiokara natto* (pounded salty natto) and *shiokara natto* (salty Natto). But for itohiki natto, no clear (definite) document was found, so people thought it appeared in late Edo period. But I don’t think in that

way. There might be a blank period in the literature, but you cannot say no document was found. There are some documents that mention itohiki natto. I am going to mention them here.

The first is *Shojin Gyorui Monogatari* (1320-1380). It is a story (fictional) of a battle between shojin ryori (Buddhist vegetarian cookery) and gyocho ryori (fish and poultry cooking). It is told that the book's author is called *Nijo Kanpaku* (the word *kanpaku* means a high ranking government officer who assisted the Japanese Emperor politically, or is a nick name for a person who is very powerful) whose real name was Nijo Yoshimoto and was well known for his talent in literature.

This story was written around 1320-1380, near the end of the Kamakura Bakufu and during Nanboku-cho period. (The books called *Teikun Orai* {1350} and *Isei Teikun Orai* {1370} were written during the same period.) This story is one of the documents that mentions itohiki natto.

The next document is *Noritoki-kyo-ki* (the diary of Noritoki) written in Ouei 12 nen (in 1405). I was told that there was an entry of December 19; "Rokkaku gifted itohiki natto." So I thought that since I had read this whole book before, I decided to check my notes about this book and then I found out that I, too, noted itohiki natto (mentioned) in Ouei 12 nen, Dec. 19. Although I didn't write "Received Itohiki Daizu from Rokkaku (person's name)", it was maybe Itohiki Natto which was given by Mr. Rokkaku. I confirmed this by checking with Mr. Takeshi TOYOTA's *Chusei Shogyo-shi* (History of Middle Age Commerce) and also my old notes.

After that, there are no documents mentioning natto until the *Tamon-in Nikki* (Diary of Tamon-in) in an entry dated Eiroku 11, May 21 (May 21, 1568). In this diary he wrote "Tried drying natto but then it got wet from the humidity of rainy air. So mix salt into *netaru natto* ('slept natto') by roasting salt well and while the salt is very hot, mix it into natto and dry the salted natto again. It won't get moist from the rainy season. *Meizen-bo* (A Zen monk?) said so." *Netaru natto* ("slept natto") means fermented natto and is itohiki natto. But the document just before this was written in 1405, so there is a gap of over 100 years between those two documents; that is the shortcoming of the literature (that mentions itohiki natto).

Then the next document is from late in the early Edo period. "Kefukigusa (Kefukiso?)" in 1645. "Kefukigusa" is a textbook for Haikai (Haiku and Renka). In this book published by Iwanami Buko, Ooyu (?), saliva of a cow, 3 wheels, strings for the puppet. etc. and also natto were listed among the (supportive) words (to make Haiku and Renka). Therefore there must have been natto at that time. To summarize: I checked and confirmed the *Noritoki-kyo-ki*, and also if there are other documents that can be found on related subjects. The documents on itohiki natto can be traced from the present all the way back to the period

of *Natto Taro Itoshige*. But I really think that probably it continuously goes up to the period of Natto Taro Itoshige. Note: This is his guess after checking the documents.

Bibliography:

(1) *Shojin Gyorui Monogatari*: published by the Konnyaku Association in the book called "Konnyaku Kyokai Shi" (History of Konnyaku Association"). This book contains the whole story of the *Shojin Gyorui Monogatari*.

(2) *Tamon-in Nikki*: "Netaru Natto" (was mentioned) in it. Eiroku 11 (1568) May 21

(3) *Kebukiso (Kebukigusa?)* 1645. *Tsukeku for itohiki* (adding word for the word Itohiki). Re-published as Iwanami Bunko Bon and it was mentioned in Iwanami Bunko Bon page 109. (Note: He forgot to mention this book's year of publication.)

(4) *Edo Ryori Chu*. 1673. "Nese Natto" Nihon Ryori Taikan, Dai 2 Kan 118-1. (Volume 2, 118-1)

This chapter was written in Heisei 5 nen (1993) Dec. 2.

An illustration (p. 23) includes some writing: On the top container: Kinzanji Miso (Miso?) is written. Note: The Chinese characters are *Mi* as in Miso and the character for *hishio*.

On the bottom container is written "natto."

This illustration came from *Wakan Sansai Zue*. Address: Japan.

577. Yee, Clarence. 1995. Re: Invention of low-cost, fully-automated yuba processing equipment. Letter (fax) to William Shurtleff at Soyfoods Center, May 15. 1 p.

• **Summary:** Clarence has designed and successfully built a production size automatic yuba processing unit for Sunrise Markets Inc. in Vancouver, BC, Canada. The yuba forming tray surface is 4 feet by 8 feet. One unit can make about 5 lb/hour of yuba. The production capacity rises as the humidity of the room decreases (the ideal is 30%), as a fan is used to draw steam off the table, and as the temperature of the room rises (the ideal is 100°F). The unit is very reliable and easy to operate. The cost to make this unit is about \$4,500, which is less expensive than the same size manual processing unit made in Taiwan. The sales price has not yet been determined. An unskilled worker could easily look after 40 units; a conveyor lifts off the yuba sheets, so he only has to clean the equipment.

Sunrise now has two of these yuba units, and they started to make fresh yuba about 4 months ago. The product has a shelf life of about 10 days. Clarence worked for Ken Lee's yuba company in California about 10 years ago. Later he helped Peter Joe set up the soyfoods equipment at Sunrise Market in Vancouver. He is now retired. Address: 4027 Charleswood Dr., N.W., Calgary, ALB T2L 2E1. Phone: (403) 282-5767.

578. Orthoefer, Frank T.; Liu, Keshun. 1995. Soybeans for food uses. *International Food Marketing & Technology*

(Germany) 9(4):4-8. Aug. [5 ref]

• **Summary:** Contents: Introduction. Traditional soy foods: Soy milk, tofu, toasted whole soybeans and full-fat soy flour, soybean sprouts, yuba, soy sauce, tempeh, natto, miso. Soy protein ingredients: Soy grits and flour, soy protein concentrates, soy protein isolates. Soy nutrition: Soy protein, fat and calories, phytochemicals. Food bean market. Summary.

Two “different types of soybeans have emerged: oil beans and food beans. This is particularly true in the US soy market...”

Of the fourteen phytochemicals, seven are present in soybeans. These seven are phytates, isoflavones, carotenoids, coumarins, triterpenes, lignans, and phenolic acids. Phytochemicals have been shown to affect human health as much as vitamins and minerals, and many of them have anti-cancer properties. The discovery of phytochemicals may change how the nutritional value of food is assessed.

The world market for soybeans for food use is estimated at about 1 million metric tons (tonnes). In Japan alone about 830,000 tonnes are made into soyfoods as shown in a pie chart as follows: Tofu (552,000 tonnes, 63.4%), miso (180,000 tonnes, 21.5%), natto (90,000 tonnes, 10.7%), soymilk (10,000 tonnes, 1.2%), soy sauce (5,000 tonnes, 0.6%), and others (22,000 tonnes, 2.6%). In the USA the food bean market is estimated at 50,000 tonnes. Other major markets for food beans are in Korea, China, Taiwan, Hong Kong, Singapore, Malaysia, and Thailand. Food-grade soybeans can be sold by the growers at a premium of 5-20% above the base price. The demand for food beans is increasing steadily. Address: 1. Vice President, R&D, Riceland Foods, Stuttgart, Arkansas; 2. Project Leader, Soy Food Lab., Jacob Hartz Seed Co., Stuttgart, Arkansas.

579. Wilson, Lester A. 1995. Soy foods. In: D.R. Erickson, ed. 1995. *Practical Handbook of Soybean Processing and Utilization*. Champaign, Illinois: American Oil Chemists' Society Press; St. Louis, Missouri: United Soybean Board. viii + 584 p. See p. 428-59. Chap. 22. [41 ref]

• **Summary:** Contents: Introduction. Soybean chemical composition. Unfermented soy foods: Soymilk, tofu (momen, kinugoshi or silken, packed tofu, aseptically packaged tofu, deep-fried tofu, kori tofu or dried-frozen tofu), other nonfermented soy foods (yuba, kinako or roasted whole soybean flour, fresh {edamame} and canned soybeans, texturized soy protein-based foods). Fermented soy foods: Miso, shoyu (soy sauce), natto, tempeh, sufu. Japanese Agricultural Standards. Identity preservation and transportation. Soybean quality characteristics: Overview, judging quality (tofu, miso, natto). Note: This is the earliest English-language document seen (Dec. 2005) that contains the term “roasted whole soybean flour.”

Tables: 1. Nonfermented soy food products and common names by country. 2. Fermented soy food products and

common names by country. 3. Chemical composition of soy foods. 4. Per capita annual consumption of soybeans (kg) in selected Asian countries (China, Indonesia, Japan, Korea, Malaysia, Philippines, Thailand; for the years 1968, 1978, 1988, 1994).

Figures: 1. Flowchart of refrigerated and shelf-stable soymilk production. 2. JAS seal of approval. 3. Diagram of equipment used in large scale tofu production (each piece of equipment is numbered and labeled). 4. Flowchart of regular tofu production. 5. Graph showing percent transmittance of whey versus coagulant concentration for soymilks at 6% solids made from Weber, Vinton, and Amsoy soybeans. A concentration of 0.023 N was selected as the optimum coagulant concentration, since it gave the most transparent whey. 6. Graph showing percent transmittance of whey versus coagulant concentration for Amsoy soymilk at concentrations of 4, 5, and 8% solids. Concentrations of 0.018N, 0.019N, and 0.035N, respectively, were selected as optimum coagulant concentrations. 7. Flowchart of kinugoshi (silken) tofu production. 8. Flowchart of packaged tofu production. 9. Flowchart of aseptically packaged tofu production. 10. Flowchart of kori (dried-frozen) tofu production. 11. Diagram of equipment used in large scale production of dried-frozen tofu (each piece of equipment is numbered and labeled). 12. Flowchart of miso production. 13. Diagram of the interactive factors producing the characteristic attributes of miso. 14. Flowchart of tempeh production. Address: Iowa State Univ., Ames, Iowa.

580. Paine, Heather. 1995. Processing trends in Europe. Paper presented at the Third Bi-Annual SoyAfrica Conference. 14 p. + 11 p. of tables, charts, and graphs. Held 3-5 Oct. 1995 at Johannesburg, South Africa. Organized by Aproma. [10 ref]

• **Summary:** Contents: Introduction. History and production. The benefits of soya: Nutrition, functional properties. Products & applications: oil-based products (soya bean oil, soya lecithin), soya protein products (full-fat soya flours, defatted soya flours, soya concentrates, soya isolates), soya fibre products (incl. soy bran), whole soybean products or soya foods (soya milk or drink, tofu, yuba, soya sauce, miso, tempeh, natto). Trends and problems: Growing market for soy protein ingredients, U.S. soyfoods market, soymilk sales, problems of quality and image and legislation. Address: Editor, Soyfoods, England.

581. Kayte, Lillian. 1995. Thanksgiving's new tradition: Finally—a satisfying meatless holiday with all the trimmings. *Vegetarian Times*. Nov. p. 41-48.

• **Summary:** The recipe for “Thanksgiving No-Turkey ‘Turkey’” (p. 45) calls for seitan and yuba.

A glossary includes definitions of seitan (“A chewy high-protein food made from boiled or baked wheat gluten”) and yuba (“The film that develops from heating soymilk.

Available in dried form in Chinese and Japanese groceries”).

582. **Product Name:** Tofu Puffs, Silken Tofu, Soymilk Curds (Tofu Hua), and Yuba.

Manufacturer’s Name: China Tofu.

Manufacturer’s Address: 3222 Whipple Rd., Union City, CA 94587. Phone: 510-489-7288.

Date of Introduction: 1995.

How Stored: Refrigerated.

New Product–Documentation: Talk with Diana Lin, wife of Bo Ming Lin, one of the two owners of the company. The four products shown above were introduced in about 1995.

583. Wei, Dongya. 1995. *Han Ying ci dan* A Chinese-English dictionary. Beijing : Wai yu jiao xue you yan jiu chu ban she. 52 + 1435 p. See p. 303. 27 cm. [Eng; Chi]*

• **Summary:** Page 303: Fuzhu–“Dried rolls of bean milk cream” [dried yuba sticks].

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term “dry rolls of bean milk cream” to refer to what are probably dried yuba sticks. Address: China.

584. Zedong, Mao; Schram, Stuart R.; Hodes, Nancy Jane. 1995. *Mao’s road to power: Revolutionary writings 1912-1949. Volume III. From the Jinggangshan to the establishment of the Jiangxi Soviets, July 1927–December 1930.* Armonk, New York; London: M.E. Sharpe. lxxvi + 771 p. See p. 323. 24 cm. [400+* ref]

• **Summary:** In the section titled “Xunwu investigation (May 1930, p. 296-419) we read (p. 323): Dried bean curd roll [lit., curd bamboo] [sic, dried yuba roll]. This is made of thin sheets of bean curd [sic, yuba] rolled into tubes. One *jin* costs 2 *mao* and several *fen*; annual sales are 40 to 50 *jin*. It comes from Xingning.

“*Doufumei* [lit., bean curd mold]. This is fermented bean curd that comes from Mei xian. It is made from three items: soybean milk, taro, and flour. It is not made the way the dried bean curd [*doufu-gan*; pressed tofu] used by the common people is made.”

Bean curd [tofu] is mentioned on pages 184 (“Spoiled bean curd is not spoiled bean curd”), 335-36 (section titled “Bean curd”), 347.

Soybean is mentioned on pages 318 (soybean business), 323 (soybean milk used in *Doufumei*), 336 (soybean residue [okara]), 343 (yellow soybean sprout). Address: China.

585. Hagler, Louise. 1996. *Soyfoods cookery: Your road to better health.* Summertown, Tennessee: The Book Publishing Co. 160 p. Illust. Index. 21 cm. Introduction by Mark and Virginia Messina.

• **Summary:** Contents: Foreword, by Louise Hagler. Introduction, by Mark Messina and Virginia Messina: Introduction, soybeans—a powerhouse of nutrition, soy and

cancer (soybeans—a phytochemical factory, genistein and non-hormone cancers, soy and cancer treatment, isoflavones in the diet), soyfoods and heart disease—beyond cholesterol, soyfoods and bone health, soyfoods and kidney disease, menopause, perspective on soyfoods, about the Messinas. Basic soyfoods (glossary): Whole soybeans, fresh green soybeans, soymilk, okara (soy pulp), soymilk powder, soy protein concentrates, soy protein isolates, tofu, freeze-dried tofu, tempeh, textured vegetable protein, miso, soy flour or grits, yuba or bean curd stick or sheet, natto, soy sauce, soy oil, soy lecithin, convenience soyfoods (frozen soyburgers, frozen tamales and burritos, frozen soy hot dogs or wieners, frozen fat-free soy ground meat replacement, frozen soy pizza, tempeh burgers, frozen tofu lasagne, stuffed shells, manicotti, tortellini or ravioli, frozen soy breakfast links or “sausages” or tempeh “bacon,” “ground” tofu, meatless chili mixes, meatless burger mixes, soy “cheeses,” eggless soy mayonnaise, tofu salad dressings, soy ice creams, frozen pot pies, frozen pocket breads, instant miso soup, eggless soy cake, quick bread, pancake and waffle mixes, liquid soy coffee creamer, smoked or baked tofu). Feeding babies and children soyfoods. Breakfast, brunch & bread. Whole soybeans. Sauces, spreads, dips & dressings. Soup & salad. Main dishes. Desserts. Drinks & yogurt.

No dairy products or eggs are used; honey is called for in some recipes. Optional microwave instructions are sometimes included. Address: Summertown, Tennessee. Phone: 615-964-3571.

586. Hastings, Carl. 1996. *Soybean products in human foods.* Paper presented at Regional Workshop on Soybean Processing and Utilization for Central America and the Caribbean. 4 p. Held Sept. 15-18 in Jamaica.

• **Summary:** Contents: Introduction. Soy sprouts. Whole soybeans: Cooked green beans, cooked soybeans, roasted or deep fat cooked soybeans (soy nuts—salted, flavored, etc., candy coated, salad topping, bakery ingredient or topping, soynut butter, soy coffee) fermented soybeans (tempeh—*Rhizopus*, natto—*Bacillus*, hamanatto—*Aspergillus*). Cereal blends: CSM (Corn-Soy-Milk), WSB (Wheat-Soy-Blend), other (bulgur, oat, sorghum grits).

Refined soy oil: Solvent extracted, physically extracted, uses, lecithin. Soy protein: Soy flour (full fat, defatted), concentrates, isolates, textured, uses. Hulls. Soy fiber. Soy milk: Liquid, powder, uses (plain, flavored, fortified, blends, instant formula, nutritional beverages, tofu, soy cheese, frozen desserts, yogurt, soymilk film {yuba}). Soy sauce. Soy paste (miso). Soy pulp (okara). Address: Reliv, Inc., Chesterfield, Missouri.

587. Jacobi, Dana. 1996. *The natural kitchen: Soy! 75 delicious ways to enjoy nature’s miracle food.* Rocklin, California: Prima Publishing. xii + 244 p. Oct. Index. 22 cm. Series: The natural kitchen. [16 ref]

• **Summary:** Contents: Preface. Acknowledgments. Introduction: Soy and health. All about soyfoods: Traditional soyfoods (tofu, miso, tempeh, soy sauce, soymilk), other Asian soyfoods (okara, yuba, kinako, natto), second-generation soyfoods (soy dairy products, soy deli foods, textured vegetable protein {TVP}, textured soy protein {TSP}, soy isolate (isolated soy protein)), more soy choices (fresh soybeans, dried black soybeans, soy flour, soy grits, soy flakes, soy nuts), cooking with soyfoods (tofu {pressing, freezing, marinating, sautéing and pan-crisping, frying, braising, pureeing, parboiling, storing and handling tofu}, miso, tempeh, soymilk, other soy dairy foods), cook's notes (herbs, spices and flavorings, nuts, oils, produce, stock, sweeteners).

Soups, appetizers, and first courses. Main dishes. Pasta and light dishes. Side dishes and sauces. Salads, burgers, and kebabs. Desserts. Breakfast and beverages. Mail order sources.

The Preface states: "If you are new to soy, you will find descriptions of soyfoods, from tofu to soymilk... If you already cook with soyfoods, the approximately 75 recipes in this book and their variations will expand your repertoire. These recipes will take you across lines that people who cook with soy rarely approach. The dishes bring familiar and satisfying textures along with flavors that are full and deep. Whether ethnic or classic, they are dishes with verve and elegance." The author first tasted tofu, with her parents, in 1953, "at the precocious age of eight," at The Great Shanghai on 125th St. in Manhattan, New York City. Address: Food writer, New York, NY.

588. **Product Name:** UnTurkey [Meatless Turkey Made from Seitan and Yuba].

Manufacturer's Name: Now & Zen, Inc.

Manufacturer's Address: South San Francisco, California. Phone: (415) 695-2805.

Date of Introduction: 1996. October.

Ingredients: Nov. 1998: UnTurkey—Water, vital wheat gluten, yuba (soybeans and water), bread crumbs (organically grown sprouted wheat berries*, etc.), onions, celery, carrots, nutritional yeast, soy sauce (soybeans, wheat, salt, water), expeller pressed canola oil, white wine, garlic, salt, spices. Gravy: Water, unbleached wheat flour, expeller pressed canola oil, soy sauce (soybeans, wheat, salt, water), nutritional yeast, white wine, garlic, onion, salt, spices. * = Organically grown and processed in accordance with the California Organic Foods Act of 1990.

How Stored: Frozen or fresh.

New Product—Documentation: Sinzinger, Keith. 1997 "Tempeh turkey heads east: Vegetarian innovations." *Washington Post*. Oct. 8. Miyoko Schinner, founder of Now & Zen restaurant in San Francisco, first prepared a seitan-based bird one Thanksgiving. Later she published a recipe for her UnTurkey, then began selling it at her restaurant

several years ago. Last year she sold about 1,000 UnTurkeys in the Bay Area, and is hoping for sales of 10,000 this year.

Rosenthal, Lara. 1997. "The new Thanksgiving dinner: Gravy, but turkeys not invited." *Wall Street Journal*. Nov. 26. Three alternative turkeys are profiled, including Unturkey, made of seitan (wheat gluten) by Now & Zen of San Francisco, California.

Reuters (Washington, DC). 1998. "Tofurky, Unturkey give vegetarians good reasons to utter holiday thanks." *Japan Times*. Nov. 16. Robin Kaufer of Now and Zen says they have sold 20,000 Unturkeys, up from 5,000 in 1997—the first year they were available in stores. Previously they were sold only in a restaurant.

Product with Label brought by Cheryl Ishida and kids. 1998. Thanksgiving. "The Small UnTurkey Feast." "Fully cooked—just heat and serve. Serves 2-4. All natural, vegan UnTurkey meal complete with stuffing and gravy. Net wt. 3 lbs (1.36 kg). The skin is made of yuba. A color photo on the front of the box shows the UnTurkey on a silver plate surrounded by cranberries, next to a glass gravy boat or sauceboat.

Talk with Dixie Mahy at Now & Zen factory in San Francisco. 1999. March 10. Which see. She thinks UnTurkey was first sold in commercial stores, outside the restaurant, in 1996 or 1997. In 1998 it was sold frozen in two sizes: 7 pounds (5 lb of stuffed UnTurkey + 2 lb of vegan gravy) or 4 pounds (3 lb of stuffed UnTurkey + 1 lb of vegan gravy).

589. Ang, Eng Tie. 1996. *Delightful tofu cooking*. Seattle, Washington: Ambrosia Publications. 160 p. Illust. Index. 23 cm.

• **Summary:** This cookbook, which is not vegetarian, includes recipes using pork, beef, chicken, fish, shrimp, crab, etc. It contains 152 original recipes from around the world. Contents: Acknowledgements. Introduction. About the author. 1. Condiments and sauces. 2. Appetizers and snacks. 3. Soups. 4. Salads. 5. Vegetables. 6. Seafood. 7. Meat and poultry. 8. Rice and noodles. 9. Desserts. Appendix: Diagrams, suggested menus, glossary. Ordering information.

"Eng Tie Ang was born in Indonesia of Chinese parents, moved to Brazil at the age of five, and came to the United States at the age of twenty-five. She learned cooking at an early age at home and in her parents' small restaurant in Suzano, Sao Paulo, Brazil. Her first and most influential cooking teacher was her mother, a master of various kinds of Oriental cooking. As a teenager, she studied Western cooking at a cooking school in her hometown. In addition to *Delightful Tofu Cooking* she has published three other cookbooks: *Delightful Thai Cooking*, *Delightful Brazilian Cooking*, and *Delightful Vietnamese Cooking*...

"In addition to writing cookbooks, Ms. Ang has been a cooking instructor for the University of Washington's Experimental College. She also frequently teaches courses through the Puget Consumers' Co-op and other cooking

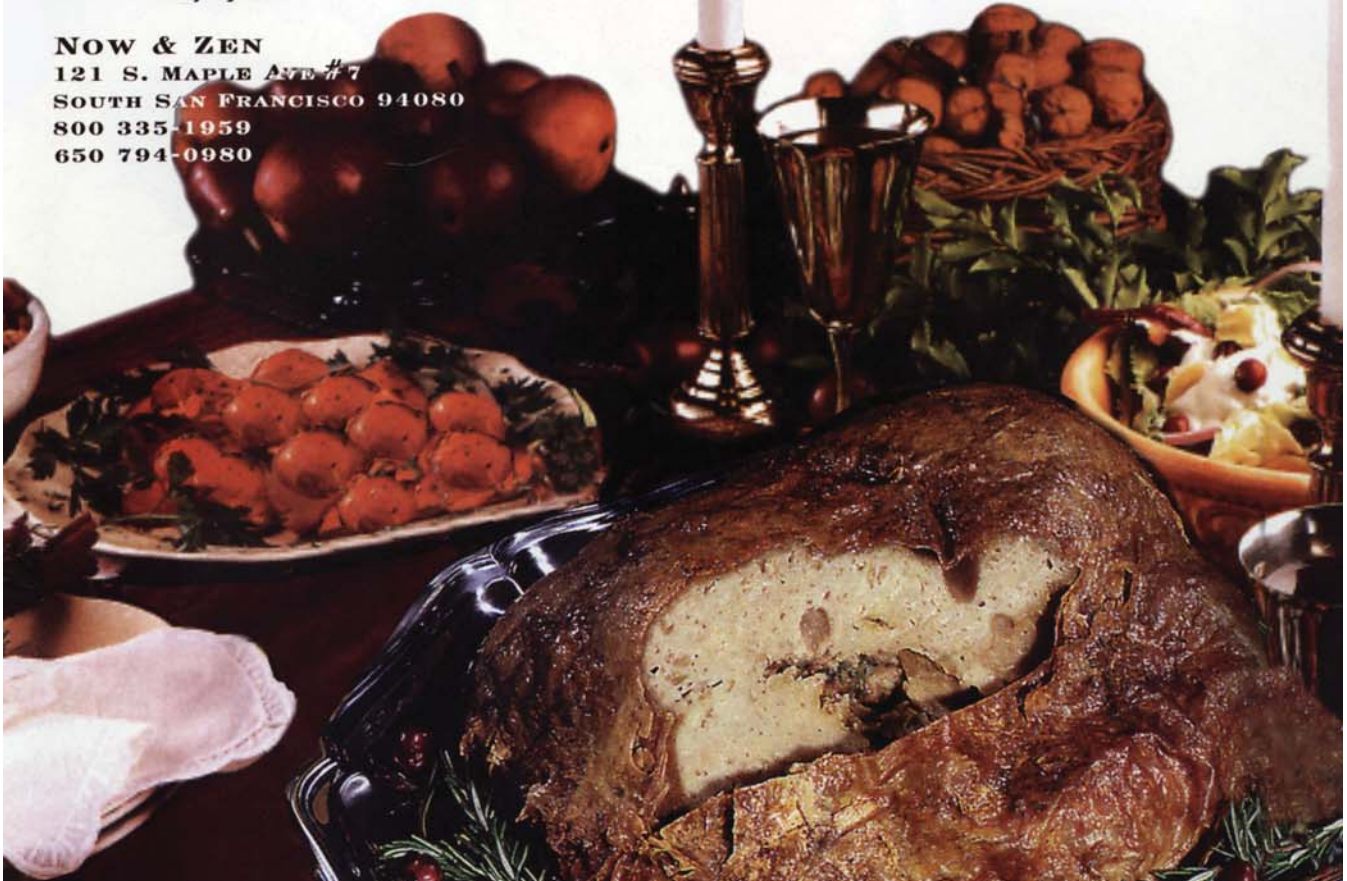
NOW & ZEN

The Great UnTurkey

*Let One of Now & Zen's featherless friends
be the centerpiece of Your Holiday table!*

This impressive creation is completely vegan and offers 5 solid pounds of boneless eating (enough for 8 hungry adults)! Made of delicately flavored, tender seitan, dressed in a delectable "skin" made from yuba (beancurd skin), stuffed with a savory bread stuffing and accompanied by a quart of delicious gravy, this innovative creation will delight vegetarians and non-vegetarians alike. This frozen "unbird" comes fully cooked, and needs only reheating to be enjoyed!

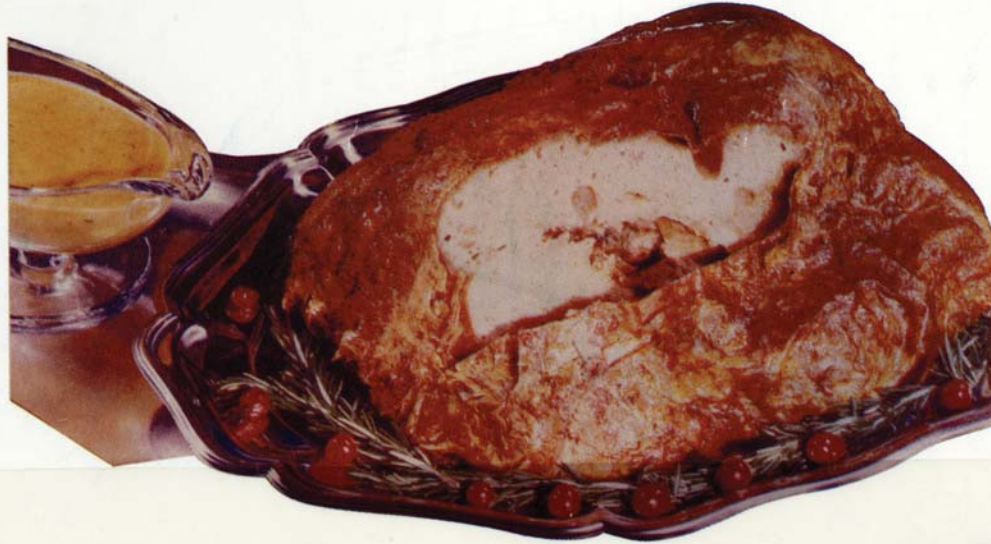
NOW & ZEN
121 S. MAPLE AVE #7
SOUTH SAN FRANCISCO 94080
800 335-1959
650 794-0980





Fully cooked – just heat and serve
Serves 2 – 4.

The Small UnTurkey™ Feast



All Natural, Vegan UnTurkey™ meal complete with stuffing and gravy!

Net Wt. 3 lbs. (1.36 kg.)

Nutrition Facts		
Serving Size 5oz. piece (142g)		
Servings Per Container about 10		
Amount Per Serving		
Calories 280	Calories from Fat 45	
% Daily Value*		
Total Fat 5g	8%	
Saturated Fat 0g	0%	
Cholesterol 0mg	0%	
Sodium 580mg	22%	
Total Carbohydrate 37g	12%	
Dietary Fiber 7g	28%	
Sugars 1g		
Protein 21g		
Vitamin A 15%	Vitamin C 2%	
Calcium 6%	Iron 10%	
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories: 2,000 2,500	
Total Fat	Less than 65g	80g
Sat Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g
Calories per gram:		
Fat 9 • Carbohydrate 4 • Protein 4		

Ingredients: UnTurkey: Water, vital wheat gluten, yuba (soy-beans and water), bread crumbs (Organically grown sprouted wheat berries*, organically grown sprouted barley*, organic unbleached wheat flour*, organic raisins*, organic dates*, wheat gluten, barley malt, sesame seeds, yeast, sea salt, soy lecithin), onions, celery, carrots, nutritional yeast, soy sauce (soy beans, wheat, salt, water), expeller pressed canola oil, white wine, garlic, salt, spices.

Gravy: Water, unbleached wheat flour, expeller pressed canola oil, soy sauce (soy beans, wheat, salt, water), nutritional yeast, white wine, garlic, onion, salt, spices.

*Organically grown and processed in accordance with the California Organic Food Act of 1990.



Manufactured by Now & Zen Inc.
665 22nd Street
San Francisco, CA 94107
(415) 695-2805 • (800) 335-1959

www.nowandzen.net



schools in the Seattle area. She offers courses in tofu cooking... Moreover, she is an avid organic gardener and an accomplished batik painter.

“Ms. Ang lives in Seattle with her husband, Donald Richard Bissonnette, and two sons, Alex and André.” A small black-and-white photo on the rear cover shows Eng Tie Ang. Address: Seattle, Washington.

590. Hosking, Richard. 1996. A dictionary of Japanese food: Ingredients & culture. Boston, Rutland, Vermont, Tokyo: Tuttle Publishing. 239 p. Illust. by Richard C. Parker. Index. 21 cm. [16 ref]

• **Summary:** This appears to be the same as the original 1972 edition. An excellent, accurate book. The basic entry for each word is given under its Japanese name (thus *daizu* rather than soybeans). Each entry includes the Japanese term in kana (usually hiragana) and (usually) kanji (Chinese characters). One hundred small illustrations are very helpful.

Here is a short example: “dengaku (hiragana, kanji) a preparation in which food such as eggplant, taro, konnyaku, or tofu are dressed with a sweetened miso topping and grilled on skewers. Fish *dengaku* is called *gyoden*.”

An example of a longer entry is “yuba (hiragana, kanji) soy-milk skin. A specialty of Kyoto, this skin that is formed when soy milk (*tōnyu*, 2 Chinese characters) is heated is not only delicious, but highly nutritious, being the richest source of protein known (over 52%). It is also high in natural sugars (12%) and polyunsaturated fats (24%) and therefore very high in energy. It is eaten both fresh and dried, being added to soups and used as a skin to roll up such things as cucumber and burdock. Nearly all yuba is made in Kyoto and it is fairly expensive. Much use is made of yuba in *shojin ryōri*.”

Seventeen appendices (p. 197-235) give detailed discussions of the following important Japanese foods and related items: Chopsticks. Katsuobushi. The kitchen and its utensils. Kombu. The meal. Miso. Saké. Salt. Sansai. Soy sauce. Sushi. Tea. The tea ceremony. Umami and flavor (incl. MSG). Vegetarianism (incl. Buddhism, *shōjin ryōri*, and *fucha ryōri*). Wasabi. Wasanbon sugar.

The author has lived in Japan since 1973. He holds an M.A. degree from Cambridge Univ. Address: Prof. of Sociology and English, Hiroshima Shudo Univ., Japan.

591. Winter, Ruth. 1996. Super soy: The miracle bean. New York, NY: Crown Publishers Inc. 192 p. Index. 21 cm. [106 ref]

• **Summary:** On the cover is written: “This wonder bean can help fight cholesterol, high blood pressure, blood sugar, cancer, ease menstrual and menopause symptoms, and keep a colon healthy. Includes a cookbook of 50 soy recipes from New York’s Natural Gourmet Cookery School.”

Contents: Introduction: The Cinderella bean. 1. How soy protects the heart and blood vessels: Full of fiber, the Eskimo

secret omega-3 fatty acids, lecithin and vitamin E, preventing strokes, magnificent magnesium, soy and the Mediterranean diet, foam to wash out cholesterol?, cholesterol competitors—phytosterols, is it thyroid hormone [when thyroxine levels rise, cholesterol falls]?, amino acid at work?, could it be the B’s?, is it the flavonoids?, the bean and obesity, high blood pressure and the bean, could it be just avoiding meat and dairy products?, summing it up. 2. How soy protects against cancer: Protease inhibitors, trypsin inhibitors, plant estrogens, polyphenols, terpenes—antioxidants, fighting phytates, maybe it’s due to low-count amino acid, saponins, inositol—the cancer-fighting phytic acid, which soy products have the most anticancer potential?, potential adverse effects of soybeans. 3. How soy helps ease digestive problems: Promoting regularity, calcium and soybeans. 4. How soy is beneficial in diabetic diets. 5. How soy is proving beneficial to women: The soy and the cycle, other hormonal benefits, magnesium, PMS and pregnancy, contraceptive or fertility inducer?, so “B” it, the bones need it, magnesium and bones, boron and bones, it could be the phytates. 6. Soy and men: Soy and sex, protein power. 7. Soy products and their nutritional value: Soybeans, edamame, soybean sprouts, tofu (also known as bean curd and dou fu-tofu), tempeh, soy milk, yuba, soy cheese, okara, soy yogurt, soy sauce, soy oil, soybean lecithin, soy nuts, miso, natto, soy flour, soy powder, soy protein isolates, concentrates and grits, texturized soy protein, convenience of soy foods. 8. Easy ways to add soy to your diet: Some other easy ways to add soy to your diet, sensible soybean use. 9. Recipes: Appetizers, soups, salads, main dishes/entrées, side dishes/breakfast, sauces/dips, desserts. Glossary. Where to get more information. References. Address: M.S., Health and science writer, Short Hills, New Jersey.

592. Jacobi, Dana. 1997. Re: Delicious tofu and pressed tofu sheets made at Soo Chow, a Chinese restaurant in New York City. Letter (fax) to William Shurtleff at Soyfoods Center, Jan. 8. 1 p. Typed, without signature.

• **Summary:** This restaurant, located at One Chatham Square, in Chinatown, New York City, recently began serving tofu they claim to make themselves. “It certainly tastes fresh and has a wonderful texture. It is fine like a silken tofu but holds together like a soft regular tofu, but without any graininess or rubbery quality.” They sell this tofu, and also use it in preparing dishes like bean curd with shrimp.

A woman at the restaurant also makes a pressed tofu sheets [called *pai-yeh* or *ch’ien-chang* in Chinese]; each sheet is about ¼ inch thick and elastic. Originally Dana thought these were fresh and tender yuba. These sheets are used in only one dish sold at the restaurant, and are not sold separately.

Yuba (the thin, firm kind that is used to make “vegetarian duck”) is also used in at least one dish at this restaurant—Buddha’s Delight—together with the “homemade”

tofu, enoki and shiitake mushrooms, shining noodles, Chinese vegetables, and a bit of seaweed. Some yuba can also be found in Chinatown stores, mostly refrigerated or frozen and not very good. The most frequent way one sees it served is in “vegetarian-duck.” Address: New York City.

593. Stevens & Associates, Inc. ed. and comp. 1997. U.S. 1997 soyfoods directory. Lebanon, Indiana: Indiana Soybean Development Council. 47 p. 28 cm. [29 ref]

• **Summary:** This second, expanded edition of the directory contains more than 270 company listings. Contents: Foreword. How to use the Soyfoods Directory (incl. Internet access). Daily soyfood guide pyramid (color). Soyfood descriptions (alphabetical): Introduction, green vegetable soybeans (edamamé), hydrolyzed vegetable protein (HVP), infant formulas—soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen dessert, okara (see soy fiber), soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate, soy protein—textured, soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk (soy beverages), soynut butter, soynuts, soyoil & products, sprouts—soy, tempeh, tofu & tofu products, whipped toppings (soy based—“similar to other nondairy whipped toppings, except that hydrogenated soyoil is used instead of other vegetable oils”), yuba. Soybean products chart: From whole soybeans, from soybean meal, from soyoil and lecithin. Soyfood companies by product (products listed alphabetically).

Composition and nutrient content of soyfoods (large table, p. 14). Soyfood companies (alphabetical by company name; Each listing contains address, contact, phone, soy products, product names, distribution, to locate product, classification). Mail-order soyfoods: Soyfood mail order companies (listed alphabetically by company). Soyfood companies by state (alphabetical by state; California has by far the most). Soybean promotion & research organizations (national, and state). Professional associations and industry information resources. Soy cookbooks (19). Soy resource books (10). Soyfood fact sheets and recipes: 1-2 pages each for meat alternatives, miso, soyoil, soy flour, soymilk, tofu, textured soy protein, whole soybeans. Soyfoods directory survey.

This directory is on the Internet’s World Wide Web at <http://www.soyfoods.com>. For more information or suggestions, call 1-800-301-3153. The Internet version of the Directory continues to improve. “The first year saw hits to our site increase from 1,000 the first month to more than 8,000 per month now. We have added a new search engine that makes it easier to find information and a new monthly e-mail newsletter, *Soyfoods USA*, designed to inform media sources, dietitians and consumers about the latest soyfoods information. To subscribe to this popular newsletter, just send an e-mail message to soyfoods@ind.com with the

words ‘Subscribe Soyfoods USA’ in the body or subject field.”

Talk with Roger Stevens. 1997. March 10. The 1997 directory was first available in January 1997. About 100,000 copies of this directory were printed, and all but 7,000 have already been sent out free of charge. About 77,000 copies were sent to registered dietitians nationwide; all are members of the American Dietetic Association. Another 10,000 copies were sent to the American Association of Family and Consumer Sciences—basically extension personnel at the Cooperative Extension Service in each county; these people provide a lot of consumer information about foods and agriculture. About 500 copies were sent to each of the 20 state soybean development councils. The remaining 6,000 copies were sent to callers who left their name and address at a toll-free answering service. The next step is to do a media tour in Indiana. Traveling with a registered dietitian, they expect to generate a lot of requests from citizens of Indiana. One of the goals is to show other states that if you promote soyfoods in this manner, you will get a lot of interest. Roger hopes to encourage other states to take a more active role in promoting soyfoods. The directory has generated a tremendous amount of information on the part of dietitians who call the toll-free number and have many questions about soyfoods; Roger tries to refer them to people who have the answers—such as 1-800-Talk-Soy. The Indiana Soybean Council has had to hire a new person just to handle the requests for this directory.

Next Roger plans to do a survey of registered dietitians to learn more about their responses to the 1997 directory. He might ask: Did you receive the book? Do you use it? If so, in what way and how often? How many people do you influence with regards to soyfoods as a result of this book? So if each of the 77,000 dietitians influences, on average, 10 people a year, the directory has reached more than 750,000 people. One major goal of this book is to help dietitians include more soyfoods in their own diets and in the diets of their clients. How can we better help you do this? Do you want a cookbook? A starter kit? Shall we include coupons?

From the focus groups he has already conducted, Roger thinks that future editions of the directory will be presented more like a cookbook or recipe book, with the directory in the back. “People really like the recipes. They just hand them out to their clients. We get requests for 100 books at a time from dietitians, who give the entire book to their clients at classes, in their offices, etc.” Roger has the funds to do the research to find out exactly what dietitians want in the way of soyfoods recipes and how they want them organized.

Other possible questions: Which part or parts of the book do you find most valuable? Which do you find least valuable. Is there any information which is not in the book that you wish were included?

Roger would also like to develop for the next edition of this book a graphic presentation of the inside of a typical

supermarket showing all the different products which contain soy.

Note: The word “soyoil” is used instead of “soy oil” throughout this directory. Address: Stevens & Associates, 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

594. Andoh, Elizabeth. 1997. In Tokyo’s ryotei, the art of service [omotenashi]. *New York Times*. April 20. p. XX6, XX24 (Sunday).

• **Summary:** Contains excellent reviews of five of Tokyo’s fine, traditional (and often expensive) restaurants: Tatsumura, Tsukiji Tamura, Bon, Kocho, and Saryo Arai.

Bon serves a type of vegetarian cuisine called fucha, which traces its origins to the Buddhist temple food of China. Bon serves “ivory-colored spirals of nama yuba (silky, fresh soybean curd sheets)” and uses kudzu in some dishes. Address: Japan.

595. Liu, KeShun. 1997. Nonfermented Oriental soyfoods. In: KeShun Liu. 1997. *Soybeans: Chemistry, Technology, and Utilization*. Florence, Kentucky: Chapman & Hall. xxvi + 532 p. See p. 137-217. Chap. 4. Index. [125 ref]

• **Summary:** Contents: Introduction. Soymilk: Traditional soymilk preparation methods, chemistry of beany flavors, modern soymilk preparation methods (Cornell method, Illinois method, rapid hydration hydrothermal cooking, methods using defatted soy material, deodorization techniques, commercial methods, novel approaches), basic steps and principles of soymilk preparation (starting material, water incorporation, grinding, soymilk extraction, heat treatment, formulation and fortification, final processing and packaging, additional processing), other constraints (objectionable aftertaste, chalkiness, yields), standardization of soymilk. Tofu: Tofu preparation methods (traditional methods, variations in tofu preparation methods), tofu varieties, quality and quantity attributes of tofu, factors affecting tofu making (soybean varieties and compositions, temperature of grinding soybeans, concentration of soymilk, heat processing of soymilk and tofu gelation mechanism, types of coagulants, concentration of coagulants, coagulation temperature, mode of adding coagulants, coagulation time, molding conditions, other factors, tofu made from full-fat soy flakes, novel treatments), microbiological safety. Yuba: Preparation, chemical composition, varieties, utilization, mechanism of film formation, conditions for film formation and their optimization. Other nonfermented soyfoods: Soybean sprouts, okara, roasted soybeans, soynuts, and soy flour, cooked whole soybeans, immature soybeans [green vegetable soybeans]. Address: PhD, Soyfood Lab., Hartz Seed, a Unit of Monsanto, P.O. Box 946, Stuttgart, Arkansas 72160-0946. Phone: 870-673-8565.

596. *Soya Bluebook Plus*. 1997. Oilseed glossary: Definitions

and terms commonly associated with oilseed products or processing. 1998. p. 354-60.

• **Summary:** Acidulated soapstock, activated, amino acids, antioxidant, biodiesel, biotechnology, bleaching, bleaching earth, bolls, Bowman-Birk trypsin inhibitor, bran, break material, cake, canola, canola meal, catalyst, coconut, coconut–desiccated, coconut milk, coconut meal, cold pressed soy oil, cold test, confection sunflower, cooking oil, copra, copra meal, corn bran, corn feed meal, corn flour, corn germ meal (wet milled), corn gluten feed, corn gluten meal, corn grits, cotton linters, cotton plant by-product, cottonseed–glandless, cottonseed cake (or cottonseed flakes)–mechanical extracted, cottonseed meal–solvent extracted, cottonseed screenings, cotyledon, cracked corn, cracking, crude cottonseed oil, crude soy oil, defatted soy flour, degermed, dehulled–dehulling, degummed soy oil, degumming, deodorized, desolventizer-toaster, diglyceride, drying oil, edamame, edible crude soy oil, edible refined soy oil, emulsifier, endosperm, esterification, expanded–expanding, expeller, extracted–mechanical, extracted–solvent, extruded, extruder, extrusion, fat, fatty acid, feed (feedingstuff), feed grade, fermented–fermenting, flaking, flour, free fatty acid (F.F.A.), full-fat soy flour (enzyme active or heated/toasted), fully refined soy oil, genetic engineering, germ, ghee, gossypol, grain, green vegetable soybeans, grits, groundnut, gumming, high-fat flour, hilum, hulls, hydrogenated vegetable oil, hydrogenization [sic, hydrogenation], hydrolyzed corn protein, hydrolyzed soy protein, isolated soy protein, kibbled soybean meal, Kunitz trypsin inhibitor, lecithin, lecithinated soy flour, linseed meal, linters, lipoxxygenase, low gossypol cottonseed meal, low-fat soy flour, malto dextrins [maltodextrins], margarine, maturity groups, meat analogs [meat alternatives], meat extenders, melting point, methyl esters, miso, monoglyceride, natto, nutraceuticals, oil, okara, once refined soy oil, oxidation, palm kernel oil, palm olein, palm stearin, peanut hulls, peanut meal, peanut skins, pellets, polymerization, processing or extraction of oilseeds (also called “crushers” or oil mill operations–solvent extraction, continuous pressing, batch pressing), protein, pulses, raffinose, rancidity, rapeseed meal–mechanical extracted, refining, refractive index (R.I.), rolled or rolling, salad oil, shortening, soapstock, solvent extracted, solvent extracted soybean flakes, soy flour, soy grits, soy protein concentrate, soy protein isolate, soy sauce (incl. that hydrolyzed with hydrochloric acid), soy sprouts, soya, soya lecithin, soybean(s), soybean ground, soybean cake, soybean curd, soybean fatty acids, soybean feed–solvent extracted, soybean flakes and 44% protein soybean meal, soybean flakes and high protein or solvent extracted soybean meal, soybean hay sun-cured ground, soybean hulls (or seed coats), soybean meal, soybean meal–dehulled–solvent extracted, soybean meal–dehulled–mechanical extracted, soybean mill feed, soybean mill run, soybean processor, soybean protein product–chemically

modified, soybean seeds–extruded ground, soybean seeds–heat processed, soybean solubles–condensed, soybean solubles–dried, soyfoods, soymilk, soynuts, spinning (to texturize soy protein isolate for food or industrial use), stachyose, steepwater, sterols, sunflower hulls, sunflower meal–dehulled–mechanical extraction, sunflower meal–dehulled–solvent extracted, sunflower meal–mechanical extracted, sunflower meal–solvent extracted, sunflower seed–oil varieties, technical grade refined soy oil, tempeh, textured soy concentrate, textured soy flour, textured soy protein, toasting, tofu, transgenic, triglyceride, trypsin inhibitors, unsaponifiable matter, unsaturation, vanaspati–vegetable ghee, wet-milled, whole-pressed cottonseed–mechanical extracted, winterized oil, yuba. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

597. Ontario Soybean Growers' Marketing Board (OSGMB). ed. and comp. 1997. Canadian soyfoods directory. Chatham, Ontario, Canada: OSGMB. 27 p. 28 cm.

• **Summary:** This excellent, complete, and accurate directory was compiled by the Collège d'Alfred of the University of Guelph, under contract with the Ontario Soybean Growers' Marketing Board (OSGMB). The project leaders were Suzanne Lavoie, Charles Goubau, and Ian Walker. The first Canadian soyfoods directory was published in April 1994 (22 pages).

Contents: Foreword–Ontario Soybean Growers' Marketing Board (OSGMB). Acknowledgements from researchers. Table of contents. Soyfood product descriptions: Green vegetable soybeans–Edamamé, meat analogs, miso, natto, okara, soy cheese, soy flour, soy frozen desserts, soy grits, soy isolate fibre, soy lecithin, soy oil, soy protein concentrate, soy protein isolate, soy pudding, soy sauce, soy sprouts, soy yogurt, soymilk (soy drink and soy beverage), soynuts, tempeh, textured soy flour–TSF, texturized soy protein, tofu, whole dry soybeans, yuba. Soyfoods for your health: Heart disease, cancer, osteoporosis, other conditions. Composition and nutrient value of soyfoods. Soyfood companies by product. Soyfoods companies by province: Alberta (7), British Columbia (21), Manitoba (2), Nova Scotia (2), Ontario (54), Quebec (20). Soyfood companies (105 companies that make or market wholesale soyfoods)–complete listings (address, phone and fax numbers, contact person, products). Soyfoods distributors–complete listings (13). Soybean distributors–complete listings (28). Research information sources–complete listings (24). Soyfoods information sources (23). Canadian soyfoods directory questionnaire.

Spot in *Ontario Soybean Growers' Marketing Board Newsletter*. 1997. Dec. p. 5. The Canadian Soyfoods Directory was launched in November after a two-month delay. "The project was undertaken following numerous information requests from consumers, processors and health professionals." Funded by the Board of OSGMB, it has been

mailed to all Registered Dietitians across Canada, and it will soon be available on the Board's website. Address: OSGMB, 180 Riverview Dr., P.O. Box 1199, Chatham, ON N7M 5L8, Canada. Phone: 519-352-7730.

598. Honda, Kyoko. 1997. Tofu & soybean cooking: The Japanese healthy way. Translated by Kazuhiko Nagai. Tokyo: Graph-sha Ltd. 64 p. Dec. Illust. 26 cm. [Eng]

• **Summary:** This full-color Japanese-style cookbook is loaded with color photos showing both steps in the process of preparing recipes and the finished dishes. Contents: Basic preparations: Parboiling soybeans, draining tofu, reconstituting Kôri-dofu, removing oil from abura-age, toasting okara. 1. Soybean cooking. 2. Tofu & natto dishes. 3. Other dishes from soybeans. Articles (summary of four articles), Chinese cheese "Furu." Address: Sc.D. (Doctor of Science), nutritionist, and lecturer at Women's Junior College of Nippon College of Physical Education.

599. **Product Name:** SuGee (Vegetarian Chicken) [Creamy Shanghai Style, or Hickory Smoke Peking Style].

Foreign Name: Su-ji.

Manufacturer's Name: CAMS Foods Inc. (Importer-Distributor).

Manufacturer's Address: Yorba Linda, CA 92886. Phone: 714-NL.

Date of Introduction: 1997.

Ingredients: Creamy: Rehydrated soybean curd, water, isolated soy protein, soy oil, sesame oil, fructose, salt, hydrolyzed vegetable protein, autolyzed yeast extract, natural flavors, spices.

Wt/Vol., Packaging, Price: 8 oz (226 gm) paperboard box.

How Stored: Refrigerated.

New Product–Documentation: Package with Label brought by Bob Gerner of Berkeley Natural Grocer. 1997. July 2. 2 by 2 by 5 inches. "Soy-based vegetarian delicacy. All natural. No preservatives. Wheat free. All vegan. No MSG. Keep refrigerated." An the box are the Chinese characters for "vegetarian chicken."

On the package is a toll-free Hotline (1-800-LA-SUGEE) which has been changed to a number which is incorrect. There is no listing for the company in Yorba Linda, California.

600. Hosking, Richard. 1997. A dictionary of Japanese food: Ingredients & culture. Boston, Massachusetts: Charles E. Tuttle. 239 p. Illust. 19 cm. *

• **Summary:** This is the 1st reprint of the 1996 edition. A 2nd reprint appeared in 2001.

601. Messina, Virginia Kisch; Messina, Mark. 1997. Soy to the world. In: 1997 Medical and Health Annual. Published by Encyclopedia Britannica, Inc. See p. 197-202.

• **Summary:** In the section titled "Diet and Nutrition"

is a long subsection on “Soy to the world.” Contents:

Introduction. Sacred crop (history). Varied and versatile: Whole soybeans (incl. green vegetable soybeans), traditional soyfoods (soymilk, tofu, okara, yuba, tempeh, miso, soy sauce or shoyu), modern soy products (textured soy flour or TVP), “second-generation” soyfoods. One of nature’s most nutritious foods. Health benefits: the evidence so far: Cancer, heart disease, osteoporosis, kidney disease, menopause. Tofu on your table (how to incorporate soy into American diets; incl. TVP, soymilk, soy flour, soy nuts). Address: 1. M.P.H., R.D.; 2. Ph.D. Both: PhD, 1543 Lincoln St., Port Townsend, Washington 98368. Phone: 360-379-9544.

602. Passmore, Jacki. 1997. *The vegetarian table: Thailand*. San Francisco, California: Chronicle Books. 160 p. Illust. (color photos). Index. 24 cm.

• **Summary:** The author dedicates this book to Isobel, her daughter, friend and critic, “who can’t pass a day without tofu.”

The Introduction notes that Thailand has a strong and living Buddhist tradition. Since Nature provides plenty of food, Thai cuisine has evolved with a moderate use of red meat, following “the Buddhist precepts on the slaughter of animals.” But many Thais make an exception for seafood, with this charming rationale: “If a fish is stupid enough to swim into a trap and die, then we may as well eat it!”

This book relies heavily on tofu as a meat alternative. The index has 28 entries at “Tofu,” so we will list only a few representative examples below. Contains a wealth of full-page color photos. In place of widely used fermented shrimp and fish pastes, this book uses various salt-fermented soy products such as yellow bean sauce, Chinese bean pastes, fermented tofu in brine, and tempeh (p. 11).

The Glossary defines the following that contain soy: Chili bean paste, fermented tofu, Hoisin sauce, kecap manis [sweet soy sauce], soy sauce (3 types), tempeh, tofu (tao hoo in Thailand); “The soybean is singularly one of the most important food plants in the world.” Few other food products can match the versatility and goodness of tofu. Incl. firm tofu, soft tofu, fried tofu and “bean curd sheets” or sticks [yuba], yellow bean sauce.

Soy-related recipes include: Classic Thai rice soup (with 6 oz. firm tofu, p. 74). Sweet and sour pomelo salad (with ¼ cup {3 oz.} cubed tempeh, p. 78). Green vegetable chu chee curry (with tofu or tempeh, p. 97). Vegetarian jungle curry (with fried tofu, p. 102). Tofu and beans with red curry paste (with fried tofu, p. 105). Clay pot of fried tofu and vegetables in brown sauce (p. 107). Stir-fried tempeh with garlic and pepper (p. 108). Stir fry of wheat gluten or tofu with straw mushrooms (p. 109). Tofu & tomato stir fry (p. 131). Thai fried rice with tofu and egg (p. 135). Pineapple fried rice (with firm tofu or tempeh, p. 136). Glutinous rice with peanuts and mushrooms (with diced fried tofu or tempeh, p. 141).

603. Saio, K. 1997. Soybean foods: Nutritionally and industrially valuable. In: Napompeth, Banpot, ed. 1997. *World Soybean Research Conference V: Proceedings*. Soybean Feeds the World. Bangkok, Thailand: Kasetsart University Press. xxiv + 581 p. See p. 521-26. Held at Chiang Mai, Thailand, 21-27 Feb. 1994. [10 ref]

• **Summary:** Contents: Abstract. Introduction. Localization of the components seeds and foods. Roles and behavior of the components in soybean food. Physical functionalities of the components. Nutrition and physiological functionalities of the components. Conclusion.

Contains 4 figures (incl. 11 photos and 1 graph) and 4 tables. Table 3, “Chemical composition of main soybean foods (in 100 gm)” includes tofu (regular), abura-age, kori-tofu, yuba, kinako, soybean sprouts, natto, miso (dark yellow), soy sauce (common), TVP [textured soy flour], isolate, soybeans (Japanese). Address: National Agricultural Research Center, 1-1-3 Kannondai, Tsukuba, Ibaraki, Japan 305.

604. Indiana Soybean Board. 1998. *Indiana soyfoods locator guide: A guide to finding soyfoods in the supermarket and health food store*. Lebanon, Indiana: Indiana Soybean Development Council. 48 p. 28 cm.

• **Summary:** This is the first edition of this Guide. On the cover is a paper grocery bag resting on a bed of soybeans and chock full of foods: Veggie Slices (soy cheese), soynut butter, veggie burger, tofu, soymilk, soy flour, plus carrots, celery, and cooking oil. Contents: Food pyramid. Soyfoods descriptions—Meat the Bean: Introduction, green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas—soy based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour, soy grits, soy protein concentrate, soy protein isolate (isolated soy protein), soy protein—textured (textured soy protein, textured soy flour), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk—soy beverages, soynut butter, soynuts, soybean oil & products, sprouts—soy, tempeh, tofu & tofu products, whipped toppings—soy-based, yuba. A taste for health—Scientists are learning about soy’s health benefits: Heart disease, osteoporosis, menopause, cancer, isoflavones. Soyfood icon chart. Soyfood facts & recipes: Meat alternatives, soybean oil, textured soy protein, whole soybeans, soy flour, soymilk, tofu. Composition and nutrient content of soyfoods. Soyfood conversion charts: description of one serving of soyfoods, guide to modifying recipes, soyfoods substitution chart. Mail order soyfood companies. Soyfoods Web site packed with information. Soy cookbooks. Soy resource books. 1-800-talksoy. Soyfoods market search map; where to find soyfoods in the supermarket (a two page color layout of a supermarket displaying where soyfoods are located). Soybeans... they’re

in almost everything. Finding soyfoods at the supermarket (store listings by county). Address: Indianapolis, Indiana 46205-1744. Phone: 1-800-275-7679.

605. Franke, Adrian A.; Custer, L.J.; Wang, W.; Shi, C.Y. 1998. HPLC analysis of isoflavonoids and other phenolic agents from foods and from human fluids. *Proceedings of the Society for Experimental Biology and Medicine [PSEBM]* 217(3):263-73. March. [58 ref]

• **Summary:** Discusses: Soybeans (raw, dry, Singapore), soybeans (roasted), soybeans (toasted), green soybean pods, soy protein, soybean sprouts, tofu (raw), tofu (fermented, Singapore), curd (fermented), soy milk, soy cheese, Foo Jook (skimmed, dry supernatant [dried yuba sticks], raw, Singapore), Foo Jook (cooked), Tau Kwa, raw (pressed tofu, raw, Singapore), Tau Pok, raw (fried Tau Kwa, Singapore), bean curd (fried). Daidzein, genistein, glycitein. Address: 1-2. Cancer Research Center of Hawaii, 1236 Lauhala St., Honolulu, Hawaii 96813; 3-4. Dep. of Community, Occupational, and Family Medicine, National Univ. of Singapore, Singapore 0511, Republic of Singapore.

606. Wu Kong. 1998. The use of green vegetable soybeans at Wu Kong, a Chinese restaurant in San Francisco (Interview). *SoyaScan Notes*. April 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Dana Jacobi went there for a meal, which included a dish with plenty of green vegetable soybeans; she found the restaurant to be excellent. Chez Panisse considers it the best Chinese restaurant in San Francisco. Wu Kong serves several recipes, unique to their restaurant, that contain green vegetable soybeans (GVS). The one with the most GVS is called Straw Mushrooms with Green Vegetable Soybeans (*Shin-ku Maodou*); it is served in a light gravy. Another is Yuba with Green Vegetable Soybeans (*Toufu-p'i Maodou*). Address: Rincon Center, San Francisco. Phone: 415-957-9300.

607. Ryan, Nancy Ross. 1998. Oh, boy! soy! Top chefs celebrate the diversity of soyfoods with 8 show-stopping dishes. *Vegetarian Times* No. 248. April. p. 36-43.

• **Summary:** Chefs from stylish restaurants sing the praises of tofu and offer their favorite recipes: Jump start smoothie (with soymilk). Veggie Peking 'Duck' (with frozen, dried sheets of yuba). Miso risotto. Curried tofu and sweet potato wakaya. Barbecued tofu. Sweet-and-sour tempeh with cucumber and cauliflower. Golden-fried bean curd with tomatoes. Sauteed eggplant with miso sauce. Note: The word "soyfoods" is misspelled as "soy foods" (two words) throughout this article. Address: Chicago.

608. **Product Name:** [Momen Tofu (Nigari), Okara, Oboro Tofu, Atsuagé (Deep Fried), Yaki Dofu (Grilled), Fresh Yuba].

Foreign Name: Momen Tofu (Nigari), Okara, Oboro-dofu, Atsuagé, Yaki Dofu, Fresh Yuba.

Manufacturer's Name: Awayuki.

Manufacturer's Address: Boerhaaveplein 2hs, 1091 AS Amsterdam, Netherlands. Phone: +31 (20) 468-5617.

Date of Introduction: 1998. June.

Nutrition: Tofu; SS-VA; USA; CSP; FibeOkIgûTofu; SS-VA; USA; CSP; FibeOkIg

New Product-Documentation: Letter from Mitsuo and Atsuko Kamada. 1998. Jan. 16. They plan to start a tofu shop making Japanese style momen tofu, yose-dofu, yaki-dofu, and atsuage. Present address: Gerrit van der Veenstraat 145/4, 1077 DZ Amsterdam. Company name: Awayuki-Japans Tofu en Delicatessen Producceren.

Letter from and form filled out by Mitsuo and Atsuko, husband and wife, founders and partners in Awayuki. 1999. Jan. 20. On 1 Jan. 1998 in Amsterdam they established a production and wholesale company named Awayuki. They began tofu production in June 1998. Their production is completely Japanese traditional style like Sangen-ya and uses nigari from Yoshikawa for curdling. Equipment: Japanese stone mill, stainless steel cauldron 60 cm in diameter with gas cooking stove, Japanese hand press machine, and a deep forming box. They bought some equipment and special tools from Japan. All their products are now made from organic soybeans, which they buy from a Dutch company. Two books by Shurtleff & Aoyagi (*The Book of Tofu*, and *Tofu & Soymilk Production*) were very helpful to them. Everything they know they learned from these books, because now in Japan it is difficult to find traditional tofu production. They now make the following amounts of the following soy products: Nigari momen tofu, started June 1998, about 2,500 packs/month (each pack weighs 370 gm). Atsuagé (Deep Fried), started Sept. 1998, about 300 packs/month. Yaki Dofu (Grilled), started Nov. 1998, about 100 packs/month. Fresh Yuba, started Nov. 1998, by special order only. A letter to Akiko in Japanese says that her many detailed illustrations in the above books were very helpful. Everyone in Amsterdam says their tofu is the tastiest available.

Photos sent by Mitsuo and Atsuko. 1999. April 5. Eleven color photos show how they make traditional tofu in their shop in Amsterdam.

609. Ndungi Khoto, Aubry. 1998. Contribution a l'avant-projet d'une usine de production de *lait de soja* en poudre a Lubumbashi [Contribution to the rough draft for a factory for the production of soymilk at Lubumbashi, Congo]. Civil Engineer thesis, University of Lubumbashi, Polytechnic Faculty, Dep. of Industrial Chemistry. v + 154 + 16 p. Illust. 30 cm. [73 ref. Fre]

• **Summary:** Preface and dedication. Introduction. Part I: Review of the literature. 1. General information about soya and proteins: 1.1. The soybean (Botanical, origin and history, soybean production and commerce worldwide, soya

in the Democratic Republic of the Congo {Congo, formerly Zaire}, structure and composition of soybean seeds, utilization of soybeans {with diagram}, food uses of soybeans {oil and meal, soy flour (4 types), soy concentrates and isolates, textured soy proteins {TVP, thermoplastic extrusion, spun fibers}, soymilk, tofu, other uses (shoyu, miso, tempeh, yuba)}, industrial uses of soybeans {linoleum, plastics, paints, varnishes, etc.}. 1.2. Proteins (in the human body, in foods), the structure of proteins (amino acids, ionization and acid-base properties of amino acids), protein bonds, denaturation. 1.3. Soya proteins (glycinin or globulin 11S, globulin 7S, hemagglutinins or lectins, protein inhibitors and other antinutritional factors, amino acid composition of soy protein). 1.4 Factors affecting the food value of soya: Acceptability problem (food value of raw soybeans), intolerance to soy proteins, off-flavors in soya and their source, inactivation of lipoxygenase, other treatments affecting the food value of soya: Alkalis.

2. Preparation and properties of soymilk. 2.1. Properties. 2.2. Advantages and disadvantages of soymilk compared with cow's milk. 2.3. Preparation. 2.4. Commercial / industrial production using the Alfa-Laval process.

3. Reminder of certain operations required for the preparation of soymilk powder: 3.1. Homogenization. 3.2. pasteurization and sterilization. 3.3. Concentration by evaporation. 3.4. Drying by atomization. 3.5. economies of energy in dewatering operations.

4. Some ideas on the methods of sensory evaluation: 4.1. The different methods. 4.2. Results and interpretations.

5. Important ideas in the study of the market, in determining the capacity of production, and in the economic evaluation of a project: 5.1. Study of the market. 5.2. Determining the capacity of production. 5.3. Economic evaluation of a project, incl. estimating fixed capital by adding capital costs.

Part II: Experimental, industrial calculations, economic calculations. Introduction. 6. Origin and characterization of the raw materials, trials for inactivation of lipoxygenase. 7. Determination of the optimal conditions for the preparation of soymilk. 8. Results of pilot plant trials. 9. Market study and determination of the capacity of production. 10. Description and calculations for the installation. 11. Economic evaluation of the project. General conclusion.

Tables show: (1) Number of people that can be supported for 1 year by the production from one acre devoted to certain crops and animals. Fewest: Beef 190. Pork 319. Poultry 457. Most: Potatoes 5,329. Split peas 6,901. Soybeans 9,075. Algae 43,200–154,000. Yeast 3,275,000.

(1.1) Leading soya producing countries in 1985 (worldwide, with area, production, and yield; USA, Brazil, China, Argentina, India). (1.2) Leading soya producing continents in 1985 (North and Central America, South America, Asia, USSR, Europe, Africa, Oceania). (1.3) Leading soya trading countries in 1985. Importers: Japan, Netherlands, R.F.A.

(Republique Federal Allemagne = Germany), Spain, Italy. Exporters: USA, Brazil, Argentina, China, Paraguay. (1.4) Production of soya in the Congo, by province 1970-1978 (the leading producer by far in 1978 was Western Kasai). (1.5) Production of soya in Katanga [formerly Shaba, before that Elisabethville] (1990-1994; by far the leading producer is Tanganyka). 1.6 Total production of soya in the Congo (1,000 metric tons) from 1970-1995 (increased from 1.7 in 1970-74 to 18 in 1995). (1.7) Average composition of different parts of the soybean seed. (1.8) Physico-chemical composition of soybean seed (ranges and average). (1.9). Mineral content of soybeans. (1.10). Vitamin content of mature soybean seeds and soybean meal. (1.11) Fatty acid composition of soybean oil. (1.11A) Enzymes in the soybean: Lipoxidase, urease, lipases, beta-amylase. (1.12) Properties and characteristics of the water-soluble fractions of soybean seeds. (1.12A) Variations in the solubility of proteins from defatted soy flour at various pH levels. (1.12B) Amino acid composition of soybean protein. Address: Lubumbashi, Katanga Province, Congo.

610. Ling, Kong Foong. 1998. Food of Asia: authentic recipes from China, India, Indonesia, Japan, Singapore, Malaysia, Thailand and Vietnam. Singapore: Periplus. 160 p. Illust (color). Index. 31 cm.

• **Summary:** A very attractive book printed on glossy paper with at least one color photo on almost every page. The introduction and essays are by Kong Foong Ling. The index, which is poor, makes the book hard to use if you are looking for particular foods found throughout Asia such as soybeans, soy sauce, miso, salted / fermented black beans, yuba [bean curd skin], etc.

Contents: The flavors of Asia. Ingredients. The Asian kitchen. China. India. Indonesia. Japan. Malaysia & Singapore. Thailand. Vietnam. Appendix.

The "Ingredients" section includes: Bean curd (incl. cotton or momen tofu, silken bean curd, deep-fried bean curd or aburage, grilled bean curd or yakidofu, fermented bean curd or nam yee). Bean curd skin [yuba]. Black beans, salted (and fermented). Hoisin sauce ("A sweet sauce made of soy beans, with spicy and garlicky overtones"). Miso (incl. red miso and white miso). Salted soy beans (incl. "yellow bean sauce"). Soy sauce (incl. light soy sauce, black soy sauce, red soy sauce, Kikkoman, tamari, thick sweet soy sauce (kecap manis-Indonesian)). Tempeh. Also: Red beans (dried azuki). Seaweed (incl. dried kelp, golden kelp, mozuku, salted dried kelp, laver or nori, wakame). Sesame (black and white seeds, tahina {tahini}). Sesame oil. Sesame rice crackers.

Beancurd or bean curd is mentioned on pages 12, 29-30, 34, 36, 88, 94, 101, 155.

Fermented bean curd: p. 25.

611. Sinclair, Charles Gordon. comp. 1998. International dictionary of food and cooking. Chicago: Fitzroy Dearborn.

594 p. See p. 234. 24 cm. *

• **Summary:** Vietnamese: dau hu: Bean curd. dau hu chien: Fried bean curd. dau hu chung: Bean curd. dau hu ki: Dried [sic, pressed] bean curd (p. 161).

fu jook pin (Chinese): Bean curd sticks [dried yuba sticks] (p. 219).

“*gochujang* (Korean): A chilli paste similar to sambal olek” (p. 234).

Indonesian: Kecap asin is thick, salty, dark colored soy sauce used for coloring and flavor. Kecap bentang manis: See kecap manis. Kecap manis: A sweet, thick, dark colored aromatic soy sauce used as a seasoning and condiment, and for satay. “Also called ketjap sauce, kecap bentang manis, sweet soya sauce” (p. 292).

Ketjap (Ho [Holland, Dutch]) Ketchup. Ketjap sauce. See kecap manis.

The word “soya” appears on 100 pages in this book. For example: Aburage (Japanese): Soya bean pouches made by deep-frying slices of pressed bean curd.

For “soy bean” see “soya bean.” For “soy bean oil” see “soya bean oil.” For “soy sauce” see “soya sauce.”

“Sweet bean paste. A thick brown sauce made from ground fermented soya beans mixed with sugar and brine. Popular in Taiwan as a condiment or seasoning” (p. 530).

612. Solomon, Charmaine; Solomon, Nina. 1998.

Charmaine Solomon’s encyclopedia of Asian food. Boston, Massachusetts: Periplus Editions. xiv + 480 p. Color illust. ([28] p. of plates). 29 cm. [67* ref]

• **Summary:** An outstanding book; the color illustrations of many ingredients are spectacular and very informative. The author has an insatiable curiosity.

Contents: List of illustrations. Introduction. How to use the *Encyclopedia of Asian Food*. Acknowledgements. A-Z of Asian Food. Bibliography. Illustrated index of selective ingredients. Index of recipes. Index of alternative words and main entries.

Soy related entries: Bean curd (p. 26-28, incl. all the different types, yuba, deep-fried tofu types, fermented tofu incl. ch’ou doufu [chou doufu]: “Despite its overpowering aroma, slimy texture, unappetizing color and the unfortunate odor it leaves on the breath, those brave enough to partake of it consider it a delicacy”).

Bean paste, sweet (p. 29. The three colors and types are red {from adzuki beans}, yellow {from mung beans, husked and split}, or black {from black soy beans}. “The pastes are usually available ready-made sweetened in cans. It is possible to make your own, starting out with dried beans.” Name in Chinese: dow sa, tau sa {sweet bean paste}).

Bean paste, yellow (p. 29. Despite what the label says, this thick, salty condiment is brown, not yellow, in color).

Bean sauces (p. 29. “Made from fermented soy beans,” they range in color from yellow to brown to black [sweet black bean paste]. Their consistency is more like pastes that

must be spooned from the jar than pourable tomato ketchup).

Beans, salted yellow (p. 31. Canned yellow soybeans which have been salted and fermented).

Beef (p. 31-37 incl. Teriyaki steak, Sukiyaki, Beef with black bean sauce, incl. “2 tablespoons canned salted black beans [fermented black soybeans]”).

Black bean (p. 43-44. Black soy beans which are fermented and salted. “Some are sold in cans in a salty liquid, others in plastic bags, covered with salt crystals.” Also called “preserved black beans”).

Flours & starches (p. 157-61). Incl. soy flour, which is “used mostly in Japan [where it is called kinako] and China. In Korea roasted soy bean flour and fermented soy bean flour are used to make a variety of bean pastes.”

Legumes & pulses (p. 206-18). A long and interesting section. All entries have a scientific name. Many have an illustration. Those found in many Asian countries (e.g., green bean, green pea) have the name in each country. Includes: Introduction, adzuki bean, asparagus bean (see winged bean), asparagus pea, black-eyed pea (a variety of cowpea), black gram, blue pea, broad bean, butter bean (see lima bean), chick pea, cowpea (see yard-long bean), fenugreek, green bean, green pea, hyacinth bean (see lablab bean), lablab bean, lentil, lima bean, long bean (see yard-long bean), moong bean (see mung bean), moth bean, mung bean, parkia, peanut, pigeon pea, red bean (see adzuki bean), red kidney bean, rice bean, sataw bean (see parkia), snow pea, soy bean (short entry), sugar snap pea, tamarind, white gram (see black gram), winged bean (China: su-ling dou; India: Goa bean; Indonesia: kecipir; Japan: shikakumame; Malaysia: kacang botor; Philippines: sigarilyas; Sri Lanka: dara-dhambala. Thailand: thua pu). Yard-long bean (this is the fresh bean known by a host of names). Recipes: Adzuki bean soup.

Master sauce (p. 232). “Also known as ‘flavour pot’ or ‘lu,’ this sauce has a base of soy sauce, water, sugar and Chinese wine or sherry, with a few variable additions...” Cooking with it is similar to ‘red-cooking.’

Miso (see soy bean products). Mushrooms & fungi (p. 237-40, incl. recipe for Braised bean curd, cloud ear and vegetables, and Braised soy mushrooms). Natto (see soy bean products).

Oils (p. 258-59, incl. coconut oil, gingelly oil [sesame oil], mustard oil, palm oil, palm kernel oil, peanut oil, perilla oil, sesame oil). Note: Soy oil is not mentioned here! Okara (see soy bean products). Salads, incl. recipe for Indonesian vegetable salad (gado-gado), that calls for 4 oz. fried bean curd. Shoyu (see soy sauce).

Soy bean, dried (349). China: da dau, wong dau, hak dau, tai dau. Indonesia: kacang kedelai. Japan: daizu. Korea: jaa jang. Malaysia: kedelai. Philippines: utaw. Thailand: thua lueang.

Soy bean, fresh. China: mao dau. Indonesia: kacang soja. Japan: edamame. Malaysia: kacang soja. Recipe: Fresh

soy beans with bean curd.

Soy bean products (p. 350): Miso (incl. recipe for miso soup). Natto. Soy bean paste (go). Soy milk. Tahuri (Philippine fermented tofu). Tokwa (tokwan; very firm square tofu).

Soy bean sprouts, with recipe for soy bean sprout salad. China: dai dau nga choi. India: bhat. Indonesia: kacang kedele, taugh. Japan: daizu no moyashi. Korea: Kong namul. Malaysia: kacang soja, taugh. Philippines: utaw. Thailand: thua-lueang.

Soy sauce (p. 351-52). Chinese soy sauce: Dark soy sauce. Light soy sauce (“Usually labeled ‘superior soy’”). Mushroom soy sauce (Dark soy sauce that has been flavored with straw mushrooms). Japanese soy sauces: Koikuchi (regular shoyu), tamari, usukuchi. Korean soy sauce (“About the same colour as Chinese light soy sauce, but not as fiercely salty and with a sweet malted aroma”). Thick and flavoured soy sauces: Kecap asin (“A dark, salty soy sauce, from Indonesia, a little thicker than the dark soy of China”). Kecap manis (A thick, sweet soy sauce from Java, Indonesia). Kicap cair: “The Malaysian equivalent of light soy sauce.” Kicap pekat: “The Malaysian equivalent of dark soy sauce, though thicker than the Chinese version, but not as thick as kecap manis.” Ponzu shoyu. Toyo mansi (p. 352): “A soy sauce used in the Philippines soured with kalamansi juice.”

Note: This is the earliest document seen (April 2012) that uses the term “Kicap cair” or the term “Kicap pekat” to refer to light and dark Malaysian soy sauces, respectively.

Tempeh (p. 386). Incl. recipes for Savoury Tempeh and Thai style tempeh. Tofu (see bean curd).

Also discusses: Adzuki bean, agar-agar (incl. almond bean curd, awayuki), almond, amaranth, cowpea, crab in black bean sauce (recipe at crab), daikon, millet, monosodium glutamate (“I would strongly recommend omitting it”), Nonya (pronounced ‘Nyonya.’ The unique cookery found in Malaysia and Singapore resulting from the fusion of Malay and Chinese cuisine during the last century), peanut, peanut sauce, sago (this palm flowers only once in its life, at about age 15. Just before flowering, it builds up a large reserve of starch in the pith. The tree is felled, the pith scooped out, ground and washed to make sago starch), seaweed (incl. agar-agar, hijiki, kombu / konbu, mozuku, nori / laver, wakame), sesame paste, sesame seed, vegetarian meals (“By far the most important vegetarian food in the Far East... is bean curd”). Address: Australia.

613. Tokushû 1 Takikomi gohan. Tokushû 2 Tôfu yuba [Special edition 1. Rice cooked with other ingredients. Special edition 2. Tofu and yuba]. 1998. Tokyo: Shibata Shoten. 176 p. 26 cm. [Jap]*
Address: Aomori, Japan.

614. Wise, Victoria. 1998. The vegetarian table: Japan. San

Francisco: Chronicle Books; London: Hi Marketing. 156 p. Illust. (color photos by Deborah Jones). 22 x 21 cm. Series: The Vegetarian Table.

• **Summary:** Contents: Introduction. Basic ingredients and seasonings for the Japanese table. 1. Appetizers and condiments. 2. Soups. 3. Rice. 4. Noodles. 5. Vegetables. 6. Sweets. Table of equivalents.

Ingredients include: Soybeans, soy sauce, tofu (incl. silken tofu, tofu puffs, grilled tofu), miso (red, white, yellow, brown, barley), fresh soybeans, dried soybeans (incl. black soybeans), soybean sprouts, freeze-dried tofu, soybean milk skin (yuba), and soybean curd pulp [okara]. Azuki beans, sea greens [sea vegetables incl. agar, kombu, nori, wakame], sesame seeds, umeboshi (pickled plums), wasabi, saké.

Contains too many soy-related recipes to list them all. The color photos and food styling are superb—perhaps the most beautiful we have ever seen in a cookbook.

Note: Other books in this series (all published by Chronicle Books) are: France, India, Italy, Mexico, and North Africa. Address: Oakland, California.

615. Mahy, Dixie. 1999. Work at Now & Zen Bakery (Interview). *SoyaScan Notes*. March 10. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** For 25 years Dixie Mahy was head of the San Francisco and a teacher in the San Francisco school system. She has long eaten a vegan diet. When she retired, she invested much of her retirement funds in Now & Zen, a company founded and run by Japanese-American Miyoko Schinner which had a vegan restaurant and a bakery that made delectable vegan cakes, cookies and other desserts. One of their best-selling products in recent years (also made at their factory) has been their UnTurkey, a meatless turkey based on seitan, with a yuba skin. New products may include a Barbecue UnRibs, and a breast of UnChicken. She is now on the company’s board of directors, and she is learning a lot about business and money. The company started on a shoestring and they are still running on a shoestring. Unfortunately, last year, in June 1998, they had to close the Now & Zen restaurant, because they could not keep both the restaurant and factory running at the same time. Part of the reason is that Miyoko now has two little girls.

Now & Zen supplies various vegan products (including chocolate chip cookies and cinnamon rolls) to United Airlines. Address: Now & Zen, Inc., 665 22nd St., San Francisco, California 94107. Phone: 415-695-2805.

616. Kushi Institute. 1999. Kushi Institute store: Food, books, kitchenware, bodycare, video, audio. Spring/summer 1999 (Mail-order catalog). Becket, Massachusetts. 40 p. 28 cm. [8 ref]

• **Summary:** A good new source of macrobiotic supplies. Includes: Amazake (from Kendall Food Co.), arame (sea vegetable), azuki beans (from Hokkaido {Japan} and

organic), barley malt, black soybeans (from Hokkaido and USA), dulce, fu (dried wheat gluten), hato mugi [hatomugi], hijiki, kanten flakes, koji, kombu, kuzu, mirin, miso, mochi (organic, Kendall), natto (organic, Kendall), natto miso, nori, rice syrup, sea palm, sea vegetable kit (8 varieties), shoyu, suribachi, tamari, tekka, tofu–dried, tofu kit, umeboshi, umeboshi concentrate, wakame, yuba. Address: P.O. Box 500, Becket, Massachusetts 01223-0500. Phone: 1-800-645-8744.

617. Liu, KeShun. 1999. Oriental soyfoods. In: C.Y.W. Ang, K. Liu, and Y-W. Huang, eds. 1999. *Asian Foods: Science & Technology*. Lancaster, Pennsylvania: Technomic Publishing Co., Inc. 546 p. See p. 139-99. Chap. 6. March. [60 ref]

• **Summary:** Contents: Introduction: Soybeans as a crop, composition and nutritional quality of soybeans, soyfoods–from the east to the west, soyfood classification.

Soymilk: Introduction, traditional soymilk, modern soymilk (techniques for reducing beany flavors, commercial methods, formulation and fortification, homogenization, thermal processing, and packaging), concentrated and powdered soymilk, fermented soymilk (with lactic acid bacteria), soymilk composition and standardization.

Tofu: Introduction, methods of tofu preparation, factors involved in tofu making (soybean varieties, concentration of soymilk, heat process of soymilk, types of coagulants, concentration of coagulants, coagulation temperature, coagulation time, process automation, packaging), varieties of tofu (silken tofu, regular and firm tofu, Chinese semidry tofu {*doufu gan*}, Chinese tofu sheets and tofu noodles, lactone tofu), varieties of tofu products (deep-fried tofu, Japanese grilled tofu, frozen tofu, Japanese dried-frozen tofu, Chinese savory tofu, fermented tofu {Sufu or Chinese cheese, varieties of sufu, preparation methods, preparation principle}).

Soymilk film (yuba). Soybean sprouts. Green vegetable soybeans. Other non-fermented soyfoods: Okara, roasted soy powder.

Fermented soy paste (Jiang and miso): Koji, koji starter, and inoculum (koji, koji starter, inoculum), Chinese jiang (traditional household method, pure culture method, enzymatic method), Japanese miso (preparing rice koji, treating soybeans, mixing and mashing, fermenting, pasteurizing and packaging), principles of making jiang or miso.

Soy sauce (Jiangyou or shoyu): Chinese jiangyou (traditional household method, modern methods), Japanese shoyu (treatment of raw materials, koji making, brine fermentation, pressing, refining), principles of making soy sauce, chemical soy sauce (made by acid hydrolysis; heat with 18% hydrochloric acid for 8-12 hours, then neutralize with sodium carbonate and filter to remove insoluble materials), proximate composition of soy sauce, quality attributes and grades.

Japanese natto: Methods of preparation, principles of preparation.

Indonesian tempeh: Traditional method, pilot plant method, principles of tempeh preparation. Fermented black soybeans (Douchi or Hamanatto): Chinese douchi, Japanese Hamanatto.

Tables: (1) Names (English, Chinese, Japanese, Korean, Indonesian, Malay, Filipino) general description, and utilization of nonfermented Oriental soyfoods. (2) Names (English, Chinese, Japanese, Korean, Indonesian, Malay, Filipino) general description, and utilization of fermented Oriental soyfoods. (3) Proximate composition (gm per 100 gm fresh weight) of some fermented soyfoods.

Figures show: (1) Flowchart: Traditional Chinese method for making soymilk and tofu (from whole soybeans). (2) A commercial processing method (Alfa Laval) for making soybase and a subsequent product–soymilk. (3) Photo of homemade firm tofu. (4) Photo of a dish of tofu and mushrooms. (5) Photo of cubes of sufu (Chinese cheese) on a white plate. (6) Flowchart for making sufu from firm tofu. (7) Photo of two packages of dried yuba sticks (Chinese). (8) Photo of a bowl of soy sprouts. (9) Photo of Chinese chiang, and Japanese red and white miso, each on one of three spoons in a shallow white bowl. (10) Flowchart of a common method for making Japanese rice miso [red miso]. (11) Photo of soy sauce in three different containers: dispenser, small bottle, and large Chinese can. (12) Flowchart of a common method for making Japanese koikuchi shoyu (soy sauce). (13) Photo of two chopsticks lifting some Japanese natto from a bowl full of natto; the thin strings connecting the natto above and below are clearly visible. (14) Flowchart of a common method for making Japanese natto from whole soybeans. (15) Photo of tempeh made in the USA in perforated plastic bags (Courtesy of Mr. Seth Tibbott, Turtle Island Foods, Inc., Hood River, Oregon). (16) Flowchart of traditional Indonesian method for making tempeh from whole soybeans. (17) Photo of Chinese *douchi* (fermented black soybeans) on a white plate.

Note: For a biography of KeShun Liu PhD see p. 544. Address: PhD, Soyfoods Lab., Hartz Seed, A Unit of Monsanto, Stuttgart, Arkansas.

618. Shurtleff, William; Aoyagi, Akiko. 1999. *The book of tofu*. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 336 p. May. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]

• **Summary:** This edition contains a completely new “Appendix B–Directory of Tofu Makers” (p. 313-316, updated to 1 Aug. 1998). The page “About the Authors” (autobiographical) has been updated, and the original photograph has been replaced with two more recent ones–reflecting the fact that Bill and Akiko separated in Nov. 1993 and their marriage ended in May 1995.

After the first printing in Oct. 1998, the Preface was

quite extensively revised (but not updated) to include more about how this book came into being (early dates and names), including the important contributions on Jeffrey and Gretchen Broadbent, and of Nahum and Beverly Stiskin. These Preface changes first appeared in the second printing of May 1999.

On page 336 is “The Best of Vegetarian Cooking from Ten Speed Press” (descriptions of eight cookbooks, with price and ISBN). The inside rear cover has been updated, and now includes current information about SoyaScan, the unique computerized database produced by Soyfoods Center. This database now contains more than 55,000 records from 1100 B.C. to the present, and more than 73% of all records have a summary / abstract averaging 128 words in length. A description of the four different types of records (published documents, commercial soy products, original interviews and overviews, and unpublished archival documents), and the number of each type, is given.

The front and rear covers, title page, table of contents, and the first page of each section have been redesigned to give the book a much more contemporary look. Still contains 500 vegetarian recipes—both Western and Eastern style.

Ten Speed Press gave this book a new ISBN: 1-58009-013-8. Yet despite the many changes described above, the authors preferred not to have this called a “new edition” or “revised edition.” Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

619. Grogan, Bryanna Clark. 1999. Soyfoods cooking for a positive menopause. Summertown, Tennessee: Book Publishing Co. 192 p. Sept. Index. 23 cm. [31 + 49 websites ref]

• **Summary:** On the front cover: “Reduce the discomforts of menopause naturally. Lower your cholesterol. Reduce your risk of heart disease and cancer. Over 150 family pleasing recipes.” Eating a diet rich in soyfoods may alleviate many of the discomforts of menopause.

Content: Introduction. Glossary. 1. The soy prescription. 2. Soy for strong bones and weight loss. 3. Preventing the number one killer of women-heart disease. 4. Can soy prevent cancer? 5. A soyfoods primer. 6. Baking and cooking with soyfoods. 7. Breakfast foods and beverages. 8. Condiments, sauces, dips, dressings, and spreads. 9. Appetizers, salads, and soups. 10. Lunch, supper, and side dishes. 11. Dinner entrees. 12. Desserts. Bibliography and websites. Sources for ingredients.

620. Bladholm, Linda. 1999. The Asian grocery store demystified: A food lover’s guide to all the best ingredients. Los Angeles, California: Renaissance Books. 234 p. Foreword by Jonathan Eismann. Illust. Index. 23 x 13 cm. Series: A Take it With You Guide.

• **Summary:** An original, well-researched and well-written book—though some of the terminology (such as “beancurd”)

is outdated. Soyfood products include: Beancurd noodles (p. 38). Kinako (p. 47). Soy sauce, mushroom soy sauce, kecap manis (p. 53). Hoisin sauce (p. 54).

Chapter 10, titled “Soybean products” (p. 93-99) includes: Black bean sauce, dried soybeans, tempeh, beancurd (pressed beancurd, deep-fried beancurd, savory grilled beancurd {yaki-tofu}, freeze-dried beancurd [sic] {koyadofu}, bean curd sheets {fu pei, yuba, fu jook; the latter are “rolled-up, long, ruffled, cream-colored sticks of bean curd skin, bent in two”}), fermented beans (preserved black beans {fermented black beans, tau see}, bean sauce, toen-jang, chili/hot bean sauce, fermented beancurd), okara, edamame, soybean sprouts, soy milk.

Note: This is the earliest English-language document seen (March 2009) that uses the word “toen-jang” (or “toen jang”) to refer to Korean-style soybean jang (miso).

Concerning preserved black beans: “Also called salted or fermented black beans or ‘tau see,’ this is made by steaming small black soybeans, then fermenting them with salt and spices. Used in a variety of dishes to add a pleasant rich aroma and salty taste... Crush or mash beans slightly to release more flavor or mix with garlic, fresh ginger, or chilies. Available in small glass jars, cans, and plastic bags. They should feel soft and not be dried out... Look for Pearl River Bridge brand labeled ‘Yang Jiang Preserved Beans’ in a 1-pound yellow canister, and Koon Chun Sauce Factory, Double Parrot, and Zu Miao Trademark brands all in 8-ounce bags.” Note: This is the earliest English-language document seen (Nov. 2011) that uses the term “tau see” to refer to Chinese-style fermented black soybeans (preserved black beans).

Concerning bean sauce: “Varieties of this Asian staple include yellow bean sauce, brown bean sauce, bean paste (tau jeong), or sweet bean condiment. All are made from yellow or black soybeans, fermented with salt and in the sweet Northern Chinese type, with sugar-sweetened crushed yellow [soy] beans. Two forms are found: whole beans in a thick sauce and bean paste, which is mashed, ground or pureed beans. The whole bean type has a rounder flavor and adds texture, while the pastes are very salty and should be used sparingly... The yellow bean paste is tau cheo... Sold in glass jars and cans. Look for Koon Chun Sauce Factory, Kon Yick Wah Kee bean sauce, Amoy, or Yeo’s.

Chapter 18, titled “Japanese food products” (p. 168-81) includes: Tsukemono (pickled in miso), miso paste, shiromiso, akamiso, mamemiso, natto, miso soup, noodle dipping sauce base (memmi), tamari sauce, teriyaki sauce, tonkatsu sauce.

Interesting non-soy products include: Sesame paste (p. 57). Satay sauce (with peanuts), gado-gado-dressing (p. 58). Peanut oil (p. 64). Sesame oil (p. 65). Amaranth (vegetable, p. 72). Winged beans (p. 76). Pickled wheat gluten (p. 108). Sesame seeds, peanuts, roasted peanuts (p. 118). Red/azuki beans, agar-agar (p. 121). Wheat gluten (p. 127). Sesame

candy, peanut roll (p. 136). Sesame seed and peanut cookies (p. 137). Sweet red bean paste (azuki *an*, p. 139). Coix seed (Job's tears, p. 165). Japanese seaweed and kelp (p. 169-70). Umeboshi (p. 171). Fu (dried wheat gluten cakes), mochi (p. 177).

Note: Although *angkak* / *ang-kak* is not mentioned by name, under "red yeast rice" part of the description is "Did you ever admire those glowing red ducks and spare ribs in Chinese restaurants? The red color comes from powdered red yeast rice which is an ingredient in the marinade and barbecue sauce." Since this product is made with a mold (*Monascus purpureus*) and not a yeast, we prefer the term "red rice koji" in English. Address: Writer, designer, illustrator and photographer, Miami Beach, Florida.

621. Davidson, Alan. 1999. *The Oxford companion to food*. New York, NY and Oxford, England: Oxford University Press. xviii + 892 p. Illust. by Soun Vannithone. Index. 29 cm. [1500+* ref]

• **Summary:** The 2,650 alphabetical entries in this excellent encyclopedia and cornucopia represent 20 years of Davidson's work. The 175 illustrations by Laotian artist Soun Vannithone are superb. There are 39 longer entries about staple foods such as rice, noodles, and apples. A comprehensive bibliography provides access to further information. The book does not contain recipes.

Soy-related entries include: Bean sprouts (p. 64). Black beans, fermented (*chi*, p. 79). Kecap (Indonesian soy sauce, made "basically from soya beans and palm sugar only." "The word 'kecap' has passed into the English language as catsup or catsup and then as Ketchup, which now means something quite different." p. 429). Ketchup ("probably via the Malay word *kechap*, now spelled *kecap*, which means soy sauce. The word was brought back to Europe by Dutch traders who also brought the oriental sauce itself. The sauce has changed far more than has the word, although the name has appeared in a large number of variations such as catsup and catsup."

Tomato ketchup is now the best known and widely used—in fact almost the only ketchup left. Whereas tomato ketchup contains much sugar and vinegar, mushroom ketchup contains neither, and is basically a salted mushroom extract with a liquid, transparent consistency. The British food historian, C. Anne Wilson (1973), believes that mushroom ketchup was the first kind of ketchup in Britain; she argues that people used to pickle mushrooms, intending to use the mushrooms, but then started using the pickle too, and finally began using the pickle by itself.

"Oysters, mussels, walnuts, and many other ingredients have been used to make ketchup, and could be blended with spices, garlic or onions, wines and spirits to vary the flavour" p. 430-31). Koji (p. 435). Lecithin (p. 447). Miso (p. 509). Natto (p. 530). Soybean (p. 739). Soy milk (p. 739-40). Soy sauce (p. 740). Tempe (or tempeh, p. 788). Tofu (p. 798-99), including plain tofu (*doufu* in Chinese), pressed tofu

(*doufu-kan*, sic, *doufu-gan*), *wu-hsiang kan*, cotton tofu or momendofu, kinugoshi or silk tofu, *sui-doufu*, freeze-dried tofu [dried frozen tofu], smoked tofu. Cooked forms of tofu: Deep-fried tofu, *doufu pok*, *cha-dofu*, *abura agé* or deep-fried thin slices which can be opened to make *Inari-zushi*, *ganmodoki* or deep-fried tofu balls, *yaki-dofu* or tofu which has been grilled. Fermented tofu: The generic term is *doufu-ru*. The most popular type is white *doufu-ru*, and there is red *doufu-ru*, *tsao-doufu*, *ch'ou doufu* [*chou doufu*], *chiang doufu*. In the Philippines fermented tofu is called *tausi* [sic, *tahuri*, *tahuli*; *tausi* is fermented black soybeans]. Miscellaneous: A specialty of Japan is *umesutsuke*, "tofu pickled in plum vinegar with a purple exterior." Note: As of Oct. 2011 not one hit / result for *umesutsuke* can be found on Google. Nor have we ever heard of such a Japanese tofu product.

Dofu nao (literally "bean brain") or smooth curds, *yuba* or "bean curd skin" or "tofu skin," *okara* or "presscake" (pulped skins of soya beans) (p. 798-99). *Yuba* (p. 860-61).

Also discusses: Alfalfa (p. 10). Almond (p. 12-13, incl. "almond milk"). Amaranth (p. 13). American cookbooks, history (p. 15-17). Azuki beans (p. 44-45). Barley, barley breads, and barley sugar (p. 58-60). Beef—BSE (mad cow disease, p. 68). Chia (p. 166). Cowpea (p. 230-31). Chufa (p. 185). English cookery books, history (p. 276-80). Five grains of China (p. 305). Gluten (p. 341). Groundnuts (or peanuts, p. 356-57). Hemp (p. 377-78). Hydrogenation (p. 391). Japanese culinary terms (p. 415-17). Kudzu (p. 437). Linseed (p. 454-55). Lupin (p. 463). Margarine (p. 478-79). Mung bean (p. 518). Nori (p. 534). Noodles of China (p. 537, incl. "Gan si {soya bean noodles}" and "Fen si {also fen-szu} {mung bean vermicelli}." Oncom (p. 553-54). Quark (p. 644). Quinoa (p. 645). Seaweeds (incl. *hijiki*, *kombu/konbu*, *nori*, *wakame*, etc., p. 712). Sesame (p. 713). Shortening (p. 721-22). Sprouts (no listing). Tahini (p. 779). Toast (p. 797, incl. *Melba toast*). Ume and *umeboshi* (p. 817). Winged bean (p. 849).

The entry for "Fermentation" states that the two main reasons for subjecting a food to fermentation are: (1) To "convert it from a form that will not keep, such as milk, to one which will, such as cheese." (2) To "make foods which are indigestible in their original state, such as wheat or soya beans, digestible by turning them into products such as bread or tempe." Other benefits include improvements in flavour. Many do not realize that fermentation is part of the process of making coffee, cocoa, vanilla, and many kinds of sausage. A brief biography and nice portrait photo of Alan Davidson, a man of extraordinary knowledge in the world of food, appear on the rear dust jacket.

Note: The paperback edition of this book (2002) is titled *The Penguin companion to food*. Address: World's End, Chelsea, London, England.

622. Klingel, Brigitta. 1999. *Gesundheit fuer die Zellen—*

Soja-Lezithin [Health for the cells–Soya lecithin]. Munich, Germany: Suedwest Verlag GmbH. 96 p. Illust. (color photos). Subject index. Recipe index. 21 cm. [9 ref. Ger]
 • **Summary:** A popular introduction to lecithin, with basic information about other soyfoods and vegetarian recipes. Contents: Lecithin–The multitasking. Soya lecithin. Help for the heart. Lecithin lowers blood cholesterol. Mental and bodily top fitness. Beauty thanks to lecithin. Soyfood products: Dry soybeans, soymilk, yuba, okara, tofu, tempeh, miso, soy sauce, soy sprouts. Recipes with lecithin. Address: Germany.

623. Mowe, Rosalind. ed. 1999. Southeast Asian specialties: A culinary journey through Singapore, Malaysia, and Indonesia. Cologne, Germany: Culinaria Koenemann. 319 p. Illust. (color photos by Günter Beer). Index. 26 x 22 cm.
 • **Summary:** Translated from the German. Includes headings in Chinese. This book is a feast for the eyes, printed on glossy paper with informative color photos on almost every page. The structure and content are also creative and very interesting; it has caught the heart and spirit and nuances of the culture. On some pages, however, the type is too small to read. The name of most recipes and ingredients is given in their native language. A 2-page map of Southeast Asia appears near the front. The basic structure: Singapore (p. 12-109). Malaysia (p. 110-215). Indonesia (p. 216-301). Glossary (p. 302-04). Introduction to Chinese nutritional theory, by Andrea Fülling (p. 305-06): Introduction, yin and yang, the three warmers, the warming effect of foods (the five energy states are hot, warm, neutral, refreshing, and cold), the five elements. Acknowledgements. Photo credits. Index.

The contents includes: Healing herbs (p. 26-29). Soup as medicine (p. 30-33). Soybean (in Singapore, p. 40-47): Introduction (familiar forms are sprouts, soy sauce, beancurd, tempeh; new disguises are “vegetable protein,” emulsifier,” “lecithin,” “vegetable oil” which are found in dairy products, canned fish, candies, desserts, and much more), in the West soybeans are “often grown as monocultures, with the disadvantages that this entails, such as the use of chemical fertilizers and pesticides,” and genetically engineered soybeans, great nutritional value yet rarely used as whole dry soybeans, most of the harvest in SE Asia is processed into beancurd and tempeh, importance of fermentation, soy milk resembles cow’s milk and is an excellent substitute, soy sauce is used throughout this cuisine. Photo of green soybean plants with green pods.

Soybean sprouts: “Black soybeans are imported from Thailand and Myanmar (Burma).” After washing, the beans are spread out in deep baskets and kept in the dark for 6 days. “Before the baskets of sprouts can be sold, the top layer if green leaves is trimmed off. They are used as feed for chickens and ducks. One basket yields 154 lb (70 kg) and the output of a medium-sized business is 60 baskets a day.”

Soybean “sprouts should never be eaten raw, nor should they be cooked for too long.” Mung bean sprouts are better known than soy sprouts, but both can be bought fresh.

Dou ban jiang (“Salted soya bean sauce.” Photo of jar and Sinsin label). Dou chi (“Black bean sauce.” Photo of jar and Sinsin label). Note 1. Typically Dou chi are named “Salted black beans.” Photo of five glasses showing how dry soybeans are transformed into soymilk, then curds.

Tofu: Meat from the fields (p. 42-44). The best tofu is made from special types of soybeans that are different from those that are crushed to make oil and meal. Most of the tofu in Singapore is made from soybeans imported from Canada. Describes the basic process for making commercial pressed tofu or soft tofu, with 7 photos showing the steps. Implies that making yuba is part of the process for making tofu; it “is eventually sold as dried beancurd sticks (*fu chok*).

Soy milk products: Fu pei–dried tofu skin [yuba]. Fu chok–dried tofu sticks [dried yuba sticks]. Tim chok–sweet tofu pieces [sic, sweet dried yuba / ama-yuba].

Note 2. This is the earliest English-language document seen (Feb. 2012) that uses the term “Tim chok” to refer to sweet dried yuba, or that uses the term “dried tofu sticks” to refer to dried yuba sticks.

Tofu fa–soft tofu as a dessert [tofu curds]; a little tapioca flour may be added. “Served warm or cold with a syrup flavored with almond extract.” Color photo shows yellow yuba atop hot soymilk, and a woman removing a slab pressed tofu from its mold.

Tofu recipes for every taste (p. 44-45): “Tofu on its own is rather bland in taste, but this is precisely its strength, since when it is combined with different ingredients and condiments it tastes new and different every time. Recipes: Niang dou fu (Fried beancurd pockets). Xia ren dou fu (Stir-fried beancurd with jumbo shrimp). Hong shao dou fu (Braised beancurd). Sui rou zheng dou fu (Steamed soft beancurd with ground pork). Dou hua (Sweet beancurd dessert). Zha fu pi juan (fried beancurd skin [yuba] roll). Color photos show the 2nd and last recipes.

Soy sauce (p. 46-47): A naturally fermented product made with mold cultures of *Aspergillus oryzae*. Describes the process for both light and dark soy sauce; the koji is made in shallow round trays, ready after 4 days. It is “then transferred into fiberglass tanks [or earthenware jars], covered with brine, and left to ferment for 3 months,” after which the 1st extraction of crude soy sauce takes place [but not through pressure]. More brine is added and a second extraction takes place 1 month later; this process is repeated for the third extraction. “At this point, the paths of the different soy sauces diverge.” The saltier, light-colored soy sauce is mixed with a preservative, pasteurized, “and stored in tanks to clarify before bottling.” The dark soy sauce is mixed with both a preservative and caramel coloring, is allowed to mature for an additional 4 weeks, then is pasteurized and bottled. Note 3. What happens to the 2nd

and third extractions? Color photos show five steps in the process, but a traditional earthenware vat is shown instead of the fiberglass tanks. Dark soy sauce is thicker than light. Recipes: Jiang you ji (Chicken in soy sauce, with marinade). Hong shao niu nan (Braised shoulder of beef).

Oyster sauce (contains no soy). Sesame oil (p. 49, with 7 photos).

Condiments (p. 50-51): Color photos show the front and label of 15 separate jars and bottles with a substantial description under each. Those containing soy are: Hoisin sauce. Dou chi (Fermented bean dried). Dou ban jiang (Tou cheong). Fu ru (Beancurd preserved). Jang qing (light soy sauce). Hei jiang you (Dark soy sauce). Tian jiang (Sweet sauce).

Peking duck (p. 62-65; soybean paste {no Chinese name is given} and Hoisin sauce are ingredients in the sauce). One key is the crisp skin. It is served in thin Mandarin pancakes.

Suckling pig (p. 86-87): Piglets are bred in Hunan province. Slaughtered at the age of 3-4 months. After a dead piglet has been patted dry, it is brushed with soy sauce, then coated with a marinade that includes fermented red bean curd and light soy sauce. As with Peking Duck, suckling pig is prized for its crisp, tasty skin. Six photos show the skewered baby pig.

Symbolic foods (p. 98-101): One of these is Moon Cakes from the mid-autumn festival (15th day of the 8th lunar month). "Traditional fillings include sweet black bean or lotus paste." Is the sweet black bean filling made from soy beans?

Instant cup noodles [instant ramen] (p. 48): Note 4. Wikipedia says at Momofuku Ando: ORS [Order of the Rising Sun], (lived March 5, 1910–Jan. 5, 2007) was the Taiwanese-Japanese businessman who founded Nissin Food Products Co., Ltd. He is famed as the inventor of instant noodles and cup noodles, which he launched on 25 Aug. 1958 (at age 48) under the name Chikin Ramen—after months of trial and error experimentation to perfect his flash-frying method. On 18 Sept. 1981 he launched his most famous product, Cup Noodle.

Beansprouts (p. 154-57): With a long introduction, a description of the process, beautiful photos, and recipes: Taugeh goreng kucai (Fried beansprouts with chives). Taugeh masak kerang (Fried beansprouts with baby clams). Tahu goreng (Fried tofu with beansprouts). Bihun goreng (Fried rice noodles). Urap taugeh (Fried beansprouts with grated coconut).

Nasi tumpeng (rice cone) (p. 220). Served with sambal goreng tempe (crisp-fried marinated strips of tempeh). Gudeg (rice with green jackfruit cooked in a sweet sauce, p. 221) is served with a side dish of tahu goreng bacem (tofu cooked with spices, then fried).

Tempeh (p. 228-29), soybeans fermented with *Rhizopus oligosporus* mold. Indonesians consume more tempeh than tofu. The process is described, with 4 color photos: Recipe:

Tempe goreng (fried tempeh).

Glossary (p. 302-04) includes: Fermentation. Soy sauce ("Probably the best-known Asian seasoning agent,..."). Sticky rice (also known as glutinous rice). Tahu (Indonesian; tofu). Tempeh. Tofu (beancurd, incl. hard, soft, and smoked).

624. Wakai, Kenji; Egami, Isuzu; Kato, Kumiko; et al. 1999. Dietary intake and sources of isoflavones among Japanese. *Nutrition and Cancer* 33(2):139-45. [35 ref]

• **Summary:** The dietary intake and sources of isoflavones (daidzein and genistein) among Japanese subjects were examined based on dietary records (DRs). The subjects comprised two groups: 1,232 who completed one-day DRs (Group 1) and 88 men and women who kept four four-day (16-day) DRs. For quantitative data on the level of daidzein and genistein in soy foods, the literature was thoroughly examined, particularly for Japanese soy foods, and adopted the median value for each food. The median intake of daidzein was 12.1 and 9.5 mg/day among Groups 1 and 2, respectively, while the corresponding values for genistein were 19.6 and 14.9 mg/day. About 90% of the daidzein and genistein in the Japanese diet comes from 3 soyfoods—tofu (including fried tofu), miso, and natto.

Table 2, titled "Estimated total daidzein and genistein contents of soy foods: Median values among results of food" lists these foods: Soybeans, dry. Soybeans, green [edamame]. Soybeans, boiled. Kinako (roasted and ground soybeans). Soybean sprouts. Tofu. Tofu, freeze dried ("kohri tofu"). Fried tofu, thin ("abura-age," deep-fried). Fried tofu, thick ("nama-age," fried briefly). Fried tofu and minced vegetables / seaweed ("ganmodoki"). Soy milk. Okara (tofu lees). Yuba (dried soy milk skim). Natto (fermented soybeans). Miso. Soy sauce. Address: Dep. of Preventive Medicine, Nagoya Univ. School of Medicine, 65 Tsurumai-cho, Showa-ku, Nagoya 466-8550, Japan.

625. Asimov, Eric. 2000. Chinese cuisine with something old, something new: \$25 and under. *New York Times*. Jan. 5. p. F9.

• **Summary:** This is a review of the Chinese restaurant Our Place Shanghai Tea Garden (141 East 55th Street, Manhattan, New York). This restaurant excels at tofu dishes: Recommended dishes include "the rich and delicious braised bean curd with crab meat and spinach," knots of bean curd skin tossed with fresh soybeans and chopped mustard greens, and fresh bacon with bean curd skin.

This same information, in condensed form, appears in the 4 Feb. 2002 edition (p. E42) of this newspaper.

626. Stephens, Roger; Stephens, Jane Ade. ed. and comp. 2000. Soyfoods guide 2000: Helpful tips and information for using soyfoods. Indianapolis, Indiana: Stevens & Associates, Inc. Distributed by the Soy Protein Partners. 24 p. Illust. No index. 28 cm. [23 ref]

• **Summary:** This guide is available only on a limited basis to dietitians and health professionals. Contents: Health: Add soy to diet to reduce heart disease (FDA recommends 25 grams of soy protein a day to reduce blood cholesterol levels), sample day soy meal planner (easy ways to add 25 grams of soy protein). Daily soyfood guide pyramid. Soy and your health—Scientists are learning about soy’s health benefits: Isoflavones, heart disease, menopause & osteoporosis, cancer, allergies, diabetes & kidney disease, fat. Soyfood Descriptions: Meet the bean: Green vegetable soybeans (edamame), hydrolyzed vegetable protein (HVP), infant formulas, soy-based, lecithin, meat alternatives (meat analogs), miso, natto, nondairy soy frozen desserts, soy cheese, soy fiber (okara, soy bran, soy isolate fiber), soy flour (50% protein), soy grits, soy protein concentrate, soy protein isolate (isolated soy protein, 90% protein), soy protein, textured (flour or concentrate), soy sauce (tamari, shoyu, teriyaki), soy yogurt, soybeans, soymilk, soy beverages, soynut butter, soynuts, soybean oil & products, sprouts (soy), tamari (see soy sauce), tempeh, Teriyaki sauce (see soy sauce), tofu & tofu products, whipped toppings, soy-based, yuba. Helpful charts: Soyfood substitutions, soyfood isoflavone content. Soyfoods web site. Soyfood composition. Recipes using: Meat alternatives, textured soy protein, whole soybeans, soy flour, soynut butter, soymilk, tofu. Address: 4816 North Pennsylvania Street, Indianapolis, Indiana 46205. Phone: 317-926-6272.

627. Jacobi, Dana. 2000. *The joy of soy: 75 delicious ways to enjoy nature’s miracle food*. Roseville, California: Prima Publishing. xii + 244 p. May. Illust. Index. 22 cm. Series: *The natural kitchen*. [16 ref]

• **Summary:** This is basically a reprint of Dana’s 1996 book titled *Soy! 75 Delicious Ways to Enjoy Nature’s Miracle Food*, also published by Prima Publishing. It contains no new text and no new recipes; a few small errors have been corrected and the design of both covers and the title page is new. Address: Food writer, New York, NY.

628. Kato, Hiroko. 2000. How to eat at a Japanese restaurant the vegan way. *Vegetarian Journal (Baltimore, Maryland)*. May/June. p. 20-23.

• **Summary:** Describes how to avoid fish and bonito extract and flakes. Traditional Japanese vegan cuisine, called *shojin ryori*, was created by Zen Buddhists; it is very easy to enjoy beautiful and delicious Japanese vegan dishes at such restaurants. Sushi can include *natto maki*, *yuba maki*, or *inari-zushi* (rice wrapped in season aburage). Tofu dishes may include *yu-dofu*, *hiya yakko*, *tofu dengaku*, *agedashi-dofu*, and *goma-dofu* (made of sesame seeds; no soy). Other dishes: Edamame, miso soup, vegetable tempura, or *gyoza*.

629. Lee, Ken. 2000. New developments with yuba, soymilk, and tofu at Soyfoods of America (Interview). *SoyaScan*

Notes. Aug. 18. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Soyfoods of America still makes yuba and, in fact, cannot keep up with the demand. The fresh frozen sheets is their best selling yuba product; it is sold mostly to restaurants, where it is used like an egg-roll wrapper. The dried yuba sticks are used in soups. Ken is developing the equipment and a process for automating the yuba-making process.

The company’s best selling product of all is Furama soymilk, sold in both the Oriental and Caucasian markets in the USA. Ken no longer makes tofu; he has House Foods make it for him under his label, since they are the lowest-cost manufacturer.

Two weeks ago Ken’s company introduced a cultured soy beverage under the Trader Joe’s label, in peach and strawberry flavors. It was developed by Tim Huang. Ken will soon introduce a similar product under his SoyWise brand. Address: President, 1091 E. Hamilton Rd., Duarte, California 91010. Phone: 626-358-3836.

630. Asimov, Eric. 2000. \$25 and under: Going beyond sushi, on an unlikely street. *New York Times*. Aug. 30. p. F9.

• **Summary:** This is a review of the Japanese restaurant Miyagi (220 West 13th St., Greenwich Village—a largely residential area on the west side of downtown {southern} Manhattan in New York City). One of the writer’s favorite dishes was “greens tossed with delicate soy milk skins [yuba] in a mustard-and-miso dressing (\$4.25). The dish is so bright and winning that only on closer examination can you tell that the greens are broccoli rape.”

631. Hagler, Louise. 2000. *Soja: Wandelbarste Bohne der Welt. Eine ‘coole’ Proteinquelle [Soya: The most versatile bean in the world. A ‘cool’ source of protein]*. Aitrang, Germany: Windpferd. 140 p. Illust. Index. 18 cm. [Ger]

• **Summary:** Foreword by Peter Golbitz. Foreword by Louise Hagler. Introduction by Dr. Mark and Virginia Messina. Basic soyfoods. Feeding babies and children soyfoods. Breakfast, brunch & bread. Whole soybeans. Sauces, spreads, dips & dressings. Soup & salad. Main dishes. Desserts. Drinks & yogurt.

No dairy products or eggs are used; honey is called for in some recipes. Address: The Farm, Summertown, Tennessee.

632. Huang, H.T. 2000. *Science and civilisation in China*. Vol. 6, Biology and biological technology. Part V: Fermentations and food science. Joseph Needham series. Cambridge, England: Cambridge University Press. xxviii + 741 p. Illust. Index. 26 cm. [200+ soy ref]

• **Summary:** This is the most important book on soyfoods in China ever written, and it is especially good on their origins and early history in China. It is also one of the best books

seen on food in Chinese culture and history.

The section titled “Soybean processing and fermentation” (p. 292-378) comprises 14.3% of the book’s text, and has the following contents: Introduction. Soybean sprouts. Soybean curd and related products: The origin of bean curd, transmission of *tou fu* to Japan, products associated with *tou fu* (soymilk {*tou fu chiang*}, tofu curds {*tou fu hua* or *tou fu nao*}, pressed tofu sheets {*ch’ien chang* or *pai yeh*}, yuba {*tou fu i* or *tou fu p’i*}, deep-fried tofu {*yu tou fu* or *tou fu p’ao*}, pressed tofu {*tou fu kan*}, five-spice pressed tofu {*wu hsiang tou fu kan*}, plain dried tofu [pressed tofu] {*pai tou fu gan*}, smoked tofu {*hsün tou fu*}, dried tofu soaked in brine and fermented {*ch’ou tou fu kan*}, frozen tofu {*tung tou fu*}, making fermented tofu {*fu ju*}, comparison of *tou fu* and cheese, addendum. Fermented soybeans, soy paste, and soy sauce: *Ferments* for food processing, fermented soybeans—*shih*, fermented soy paste—*chiang*, fermented soy sauce—*chiang yu*, soy fermentations in China and Japan.

There are also long sections on the history koji (*qu*) and of red rice koji (*hong qu*) in China (p. 192-203).

Note: This is the earliest English-language document seen (Feb. 2004) that uses the term “hsün tou fu” [pinyin: *xun doufu*] to refer to smoked tofu. Soy is also discussed in other parts of the book. Address: Alexandria, Virginia.

633. Huang, H.T. 2000. Soybean curd and related products: Yuba (*doufu-pi*) and dried yuba sticks (*fuzhu*) (Document part). In: H.T. Huang. 2000. Science and Civilisation in China. Vol. 6, Biology and Biological Technology. Part V: Fermentations and Food Science. Joseph Needham series. Cambridge, England: Cambridge University Press. xxviii + 741 p. See p. 303, 320-23. [6 ref]

• **Summary:** Dr. Huang discusses yuba and dried yuba sticks mainly on pages 303, and 320-23.

When a film forms on the surface of heated soymilk, it can be lifted off to give *doufu-yi* [“tofu robes”] or *doufu-pi* [“tofu skin”] (3 Cc = Chinese characters given for each) as stated in the *Bencao Gangmu* [The great pharmacopoeia, by Li Shizhen, 1596] (Huang, p. 320).

Note: In Japanese this film is called yuba.

In a flow diagram of the process for making tofu (Huang, p. 321). “soy milk skin” [yuba] is shown as one of the by-products. This yuba can be further processed to give “Vegetarian chicken” and “Vegetarian ham.”

Table 29 title “Family of products related to soybean curd” [tofu] (Huang, p. 322) includes *doufu-pi* which is called “Soy milk skin.” Method of production: “Film skimmed off heated soy milk.”

Huang, p. 323: The next food related to tofu is *doufu-pi* (3 Cc) bean curd skin [yuba], which is commonly known today as *fuzhu* (2 Cc, bean curd bamboo) [dried yuba sticks or rolls], apparently because its shape resembles a fairly young bamboo shoot. *Fuzhu* comes in long wrinkled strips

that are light yellow in color. As mentioned on p. 303, the *Bencao Gangmu* [The great pharmacopoeia, by Li Shizhen, 1596] states that a skin is formed on the surface of soymilk when it is heated; it can be lifted off and dried to give yuba. It seems reasonable to assume that yuba had been made in China for at least several hundred years before the *Bencao Gangmu* appeared.

It is mentioned in the *Bencao Gangmu Shiyi* [Supplemental Amplification of the *Bencao Gangmu*, by Zhao Xuemin, 1765, page 365] and in several literary works from the Qing (Manchu) dynasty (1644-1912).

Footnote 72: On page 365, one of the poems on tofu by Li Tiaoyuan describes the froth on the surface of cooked soymilk folding like a cloth. Doufu-pi [yuba] is directly mentioned as a dish in the popular Qing novels *Yu Lin Wai Shi* by Wu Jingzi (1701-1754), chapter 22, and *Jing Hua Yuan* by Li Ruzhen (1763-1830), chapter 23, and as a skin for dumplings in the *Hong Lou Meng* by Cao Xueqin, chapter 8. All four references are cited in Hong, Guangzhu. 1987. *Zhongguo Doufu* [Chinese Tofu]. Beijing, China: Commerce Publishers (p. 30-32).

As can be inferred from Table 29, yuba is the product in this group that contains the least amount of water. After drying, it can be stored for a long time without refrigeration, and has long been a popular ingredient in many Buddhist vegetarian dishes.

Footnote 73: Fuzhu is also translated as “dried bean curd sticks, as it is called in the basic Buddhist vegetarian recipe given in: Miller, Gloria Bley. 1966. *The Thousand Recipe Chinese Cookbook*, p. 624.

Note: This is the earliest English-language document seen (June 2011) that uses the term “bean curd bamboo” to refer to dried yuba sticks. Address: Alexandria, Virginia.

634. Shurtleff, William; Aoyagi, Akiko. 2000. Tofu & soymilk production. 3rd ed. Lafayette, California: Soyfoods Center. 336 p. Illust. by Akiko Aoyagi Shurtleff. Index. Dec. 28 cm. [223 ref]

• **Summary:** Contains many new advertisements, plus changes on the title page, copyright page, and rear cover of both paperback and hardcover editions (new ISBN for each). Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

635. Hosking, Richard. 2000. At the Japanese table. New York: Oxford University Press. x + 70 p. Illust. (some color). Index. 20 cm. Series: Images of Asia. [19 ref]

• **Summary:** Contents: Acknowledgements (thanks to Dr. Naomichi Ishige). The Japanese and food. Food: the raw and the cooked. Seasonal foods and drinks. Appearance, texture, and flavour. The dining room and kitchen. Meals and menus.

Briefly mentions: Soy sauce (p. 2, 12, 20), bean curd (2), tamari (p. 20), Japanese Worcester sauce (p. 20), other soy bean products (p. 20-21), tofu (p. 21, 25), yuba (p. 21,

36), deep-fried tofu—aburaage, agedofu (p. 21), miso (p. 21), green vegetable soybeans (p. 21), teriyaki sauce (p. 28), miso soup (p. 35).

636. Liberty, Anne. 2000. *Super soy! Protect yourself against bone loss, heart disease, cancer, menopause, high cholesterol*. Boca Raton, Florida: American Media Mini Mags Inc. 66 p. 14 cm. [1 ref]

• **Summary:** This mini-book (only 5½ inches high) was sold (for \$1.19) next to the tabloid magazines at the checkout stand at Longs Drug Store in Lafayette, California. On the little cover is a color photo of a grey-haired and healthy-looking lady holding a glass of soy milk. Contents: All about soy: Inside the soybean (phytoestrogen, isoflavones, genistein, protease inhibitors), eight of soy's top health benefits (antioxidant protection from free radicals, breast cancer protection, cholesterol control, colon cancer protection, strong bones, hot flash reduction, a strong immune system, and kidney disease prevention), different soy products (green soybeans, hydrolyzed vegetable protein {HVP}, infant formula {soy-based}, lecithin, meat alternatives, miso, non-dairy frozen soy ("soy ice cream"), soy cheese, soy flour, soy grits, soy protein (incl. TSP = textured soy protein = textured soy flour), soy sauce, soy yogurt, whole soybeans, soy nut butter, soy nuts, soy oil, soy sprouts, tempeh, tofu, whipped soy-based topping, yuba), nutritional value, how much do you need? Bone loss. Heart disease and cancer: Heart disease, cancer (genistein, isoflavones, phenolic acids, phytates, protease inhibitors). Menopause. Cholesterol. Cooking with soy products: Soy flour, miso, soy milk, soy protein, tofu, tempeh. Delicious soy recipes.

The author frequently refers to Earl Mindell, PhD, but has no real scientific references. Many of the recipes were provided by the United Soybean Board. On the last page are two sources of more information and recipes: The United Soybean Board website www.talksoy.com and the Indiana Soybean Board website www.soyfoods.com.

637. Shimbo, Hiroko. 2000. *The Japanese kitchen: 250 recipes in a traditional spirit*. Boston, Massachusetts: Harvard Common Press. xiii + 512 p. Foreword by Ming Tsai. Illust. (by Rodica Prato). Index. 23 cm.

• **Summary:** An excellent book with exquisite illustrations. The index contains 46 entries for miso, 20 for tofu, 12 for shoyu, 10 for teriyaki, 7 for edamame, 6 for natto (fermented soybeans), 6 for soybeans, 5 for koji ("a fermentation starter"), 3 for koyadofu (freeze-dried tofu), 2 for soy milk, soy sauce dressing, soybean lover's soybean rice, soybean miso, soybean pulp, 1 each for kinu dofu, moyashi (incl. soybean sprouts; "Until recently, moyashi used for cooking in Japan were predominantly soybean sprouts," p. 42), nama-age, nama-miso, nama-shoyu, okara (soybean pulp), saikyo miso, and tamari.

In the section on *Daizu* "(Dried soybeans)" (p. 96-97) both roasted soybean flour and *kinako* are mentioned. Dried green soybeans, are toasted then ground to a flour (*kinako*) which "is mixed with sugar and used to coat moist or sticky Japanese sweets." During the summertime, edamame (fresh green soybeans) are boiled and served in the pods.

The section on *Tofu seihin*—"Cooked tofu products" (p. 139-41) includes *Abura-age*—"Fried thin tofu." *Atsuage*—"Fried tofu." *Ganmodoki*—"Fried tofu dumplings." *Yakidofu*—"Lightly broiled tofu." *Yuba*—"Soy milk sheet."

The latter section states nicely: "Because freshly collected yuba is soft and fragile, many sheets may be piled together and rolled into a 1-inch-thick stick. The stick is chilled, cut into bite-sized pieces, and eaten with a little shoyu (soy sauce) and grated wasabi. Fresh yuba has a wonderful creamy texture and a sweet, nutty taste."

"Because fresh yuba is perishable, most yuba found in stores is in the form of a dried sheet." It must be reconstituted in water, but after it has regained its flexibility it makes an excellent wrapper for other foods in fried or simmered dishes.

Shimbo-Beitchman is a knowledgeable and talented Japanese cooking teacher who ran a cooking school in Tokyo for eight years and in London for two; she now teaches in New York City. Address: Teacher of Japanese cooking, Hiroko's Kitchen, London, England. Phone: Fax: 44-171-289-0855.

638. Shurtleff, William; Aoyagi, Akiko. 2001. *The book of tofu*. 2nd ed. Revised. Berkeley, California: Ten Speed Press. 336 p. May. Illust. by Akiko Aoyagi Shurtleff. Index. 28 cm. [321 ref]

• **Summary:** This edition contains an updated "Appendix B—Directory of Tofu Makers" (p. 313-316, updated to 22 Feb. 2001). The copyright page and inside rear cover have also been updated. The preface has been expanded. Numerous other small changes have been made throughout the book. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549. Phone: 925-283-2991.

639. Kanai, Atsuko. 2001. Working with Fuji Seiyu to introduce new Japanese-style frozen tofu products to the USA (Interview). *SoyaScan Notes*. June 11. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Fuji Seiyu is a Japanese oil milling company that got interested in soy protein products in the 1970s. They have strong research on soy protein and on developing soy protein products, but they do not have strong marketing or distribution in the USA; that is Mutual Trading Company's forte. So Mutual began working with Fuji Seiyu to bring their ready-to-eat frozen tofu products to the USA, introducing them first to Japanese restaurants in Dec. 2000. Her concept was to sell "authentically Japanese" tofu products that were not easily replicated by American

manufacturers. Fuji Seiyu has dozens of such products; Mutual is test marketing only a few. This is one of Mutual's priority food lines in 2001. Eventually Atsuko would like to get one or more of those items into large natural foods retailers.

Atsuko sends two leaflets which describe eleven products in this "Miyako Tofu Course Series." For each is given: A photo of the finished product, the item number, pack size, product name and description in English and in Japanese (*hiragana*), and price per case, pack, and serving. The following products are sold: (1) Fukkura Ogon Tofu: Golden fried tofu puff. (2) Veggie-Fish Tsutsumi: Tofu stuffed squares patty. (3) Gomoku Inari: Vegetable medley squares patty. (4) Yuba to Yasai no Cabbage Tsutsumi: Yuba and tofu stuffed cabbage. (5) Ajitsuke Inari: Inari sushi pocket. (6) Yawaraka Ganmo: Tofu vegetable patty. (7) Yuba Shumai: Yuba and tofu shumai. (8) Vegetable Kinchaku: Tofu vegetable pouch. (9) Koimo Kinchaku: Tofu taro pouch. (10) Shrimp Yubamaki: Tofu shrimp roll. (11) Vegetable Yubamaki: Tofu vegetable roll. Address: Mutual Trading Co., Inc., 431 Crocker St., Los Angeles, California 90013. Phone: (213) 626-9458.

640. Slater, Nigel. 2001. Tofu at the top. *Observer (London)*. June 17. p. F50.

• **Summary:** Nigel Slater does not like tofu, but he's willing to give it a try. "Tofu, dou fu, bean curd, call the stuff what you will, has never exactly been on my shopping list." Slater quotes from a new book titled *Sichuan Cookery*, by Fuchsia Dunlop, the BBC's East Asia specialist. Note: Chengdu is the capital of Sichuan province.

"In most Chengdu markets the standard white bean curd is available in several consistencies; there is also smoked bean curd in thin, firm slabs with a honey-brown surface, glossy chunks of firm bean curd which have been simmered in five-spice broth, large squares of 'bean curd skin' [probably yuba], sausage-shaped rolls of bean curd with an Edam-like texture, tender flower bean curd and ripe-smelling fermented bean curd in chilli sauce."

Slater notes that in Chinese grocery shops in England, one can generally find three kinds of tofu: Firm tofu, smoked tofu, and silken tofu (slithery, "with the texture of a gently quivering custard, and the non-flavour of spring water").

He gives two recipes from two different books: Fuchsia Dunlop's home-style bean curd (with "500g block of bean curd"), and Vatcharian Bhumichitr's tahu goreng (with "4 blocks soft bean curd, each about 5cm square"). The latter recipe comes from *Vatch's Southeast Asian Salads*.

641. Dillman, Erika. 2001. *The little soy book*. New York, NY: Time Warner. xiii + 190 p. Index. 15 x 16 cm. [58 ref]

• **Summary:** Contents: Introduction. 1. It's soy time. 2. Why eat soy? Health benefits of soy? Soy foods: Soy milk, soybean oil, soy sauce, soy meat alternatives, tofu, tempeh,

miso, whole soybeans, edamame, soy nuts, soy nut butter, soy sprouts, soy ice cream, soy yogurt, soy cheese, soy flour and grits, textured soy protein (TSP), soy protein concentrate, soy protein isolate, hydrolyzed vegetable protein, infant formula, lecithin, natto, yuba, soy fiber, Cooking with soy (recipes). Notes [references]. Resources [Directory]. Glossary. Address: Seattle, Washington.

642. Jacobi, Dana. 2001. *Amazing soy: A complete guide to buying and cooking this nutritional powerhouse, with 240 recipes*. New York, NY: William Morrow. An imprint of HarperCollins Publishers. xiv + 364 p. Aug. Index. 24 cm. [50 ref]

• **Summary:** Contents: Introduction. Ingredients and techniques. Breakfast. Smoothies and drinks. Dips and starters. Soups and breads. Salads and dressings. Wraps, burgers, and savory pies. Pizzas and pastas. Stews, casseroles, and chilis. Steaks, chops, skewers, and meat loaf. Stir-fries and curries. Seafood. Mainly vegetables. Desserts. Sources. Bibliography.

Kinako (roasted soybean powder) is called for in the recipe for Cinnamon toast (p. 59). Address: Food writer, New York, NY.

643. Mai, Pham. 2001. *Pleasures of the Vietnamese table: Recipes and reminiscences from Vietnam's best market kitchens, street cafés, and home cooks*. New York, NY: HarperCollins Publishers. xii + 242 p. Aug. Illust. (Photos by Martin Jacobs, some color). Index. 24 cm.

• **Summary:** This is a marvelous, very original book, with real passion for food and cookery and a deep curiosity on this subject and desire to learn. It overflows with warmth, devotion, and kindness, and is full of insights about Vietnam, its food, and most of its best cooks—street food cooks. Here we see the origin of the modern restaurant and its chefs. Contains more than 100 authentic recipes and many black-and-white photos.

The Vietnamese eat fresh herbs like vegetables. The Hmong are one of Vietnam's ethnic groups.

The ancestors of today's Vietnamese migrated south from southern China in about 1500 BC. By the 2nd century BC they had annexed the country and introduced their system of government, Confucianism, and Buddhism. Over the centuries they introduced their food traditions—stir-frying, eating with chopsticks, steaming, and such ingredients as soy sauce, tofu, noodles, and ginger.

Vietnam is often divided into three culinary regions: the fertile south, the cooler central region, and the harsh, mountainous north—which suffered most from recent American war.

Important ingredients include: Bean sauce (tuong hot). Hoisin sauce (sot tuong). Soy sauce (nuoc tuong {liquid}); Brands—Pearl River Bridge, Kikkoman. Although not used as widely as fish sauce, soy sauce is a common seasoning in

vegetarian and stir-fried dishes).

Soy related recipes: Vietnamese bean dipping sauce (tuong goi cuon, with ¼ cup fermented whole soybeans {tuong hot}, p. 28). Soy-lime dipping sauce (nuoc tuong pha, with 1/3 cup soy sauce, preferably light Chinese style sold under the brands Kim Lan, Bo De, or Pearl River Bridge, p. 29). Sweet soy sauce with chilies and ginger (nuoc tuong den ot, with 3 tablespoons sweet soy sauce, p. 30, 37). About soy sauces (light, dark, and sweet, p. 37. Kikkoman is considered light. There are two types of dark soy: One, also called “black soy,” contains molasses and is thick. The other, called sweet soy sauce, is even thicker and sweeter).

Tofu, tomato and chive soup (canh dau hu he, with 6 ounces soft or medium tofu, p. 74). About fermented black beans [fermented black soybeans] (tau xi, an ancient Chinese seasoning, also called salted black beans, are sold in 1-pound plastic bags, paper cartons, or earthenware jars. The author prefers Yang Jiang Preserved Beans with Ginger by Pearl River Bridge).

Chapter 7 is “Return to the grandmotherland: Vegetarian favorites and meatless recipes.” Of her beloved grandmother (now age 102) she writes: “When my grandfather died years ago at an early age, my grandmother was forced to raise seven kids by herself while running the family plantation. That twist of fate turned her into a vegetarian, in part because vegetarianism is a form of merit-making” (gaining merit, duoc phuoc). “In doing so, one’s wishes would be granted. In my grandmother’s case she prayed for the well-being of her children.” “Many Vietnamese are vegetarians who practice vegetarianism on one level or another... With the shortage of animal protein and the pervasiveness of the Buddhist influence in the culture, it is not uncommon to find many Vietnamese dishes eaten in two ways—*man* (with meat) and *lat* (without meat). Indeed almost every meat dish in this book can be made vegetarian.”

Vegetarian recipes (p. 185-99, with tofu unless stated): Salad rolls with jicama, peanuts and basil (bo bia chay, with 1 {6 ounce} piece tofu and 1 tablespoon soy sauce). Salad rolls with tofu and mushrooms. About tofu and *tau hu ky* [yuba or dried yuba sticks]. Cucumber and tofu salad (goi chay). Vegetarian pho noodle soup (pho chay). Vegetable curry (ca ri chay, with 2 pieces dried bean curd skin [yuba]). Spicy lemongrass tofu (dau hu xa ot). Rice noodles with stir-fried vegetables (bun chay). Vegetarian claypot rice with ginger (com tay cam chay). Black mushrooms with bean threads in claypot (nam kho). Water spinach with tofu (rau muong xao). Twice-cooked eggplant with garlic and basil (ca tim xao rau que).

Warm soymilk with pandanus leaf (sua dau nanh, with 1 pound dried soybeans made into fresh soymilk, p. 220-21). The headnote to this interesting recipe begins: “I grew up on soy milk, but never thought of making it fresh until I started going back to Vietnam. There, fresh soy milk is sold at markets and on street corners early in the morning and late

at night. Sometimes I can walk into a market and just sniff my way to a soy milk vendor. I definitely have a nose for *sua dau nanh*, especially if its been flavored with pandanus leaf.”

Glossary (p. 223-32) includes: Bean sauce (*tuong*). Fermented black beans (*tau xi*). Fermented soybeans (*tuong hot*). Hoisin sauce (*sot hoisin*, incl. soybean purée). Peanuts (*dau phong*). Tofu (*dau hu*).

About the author (with portrait photo on inside rear dust jacket): She was born in Vietnam and raised in both Vietnam and Thailand. She fled Vietnam “just days before Saigon fell to Communist rule on April 30, 1975. We left with the clothes on our backs, fighting our way through the pandemonium at the airport before climbing aboard a plane that would fly us to safety.” Six years ago she ventured back to Vietnam for the first time—to be with her grandmother (and give her a modern wheelchair) and to eat *pho*. Her inaugural tour to Vietnam in 2000 was televised internationally by CNN, and was frequently rebroadcast on United and Delta airlines. She has returned about once a year since then, for the same reasons but also to learn about the food and cookery from the best cooks in the country—at market stalls, not fancy restaurants. She is now chef and owner of the acclaimed Lemongrass Restaurant in Sacramento, California. She also writes and teaches. Her first book, *The Best of Vietnamese and Thai Cooking* was published in 1996. Address: Chef and owner, Lemon Grass Restaurant, Sacramento, California.

644. Thym, Jolene. 2001. A twist on tofu: New, tastier food products put the joy in soy. *Oakland Tribune*. Sept. 5. Bay Area Living section. p. 1, 6.

• **Summary:** This front-page story contains a long interview with Dana Jacobi, author of *Amazing Soy*, plus a large color photo showing ten different types of soyfoods. The writer has discovered that “there’s a whole lot more to soy than plain tofu.” A sidebar titled “Name that food” is a glossary including: Edamame, silken tofu, miso, tempeh, fermented bean curd, fried tofu balls, yakidofu, yuba, soynuts, soy sauce, soy milk. Contains four recipes from Jacobi’s book. Address: Staff writer.

645. Carter, Rachel; Kistner, Stephanie. eds. 2001. *The soy alternative*. Vancouver, BC, Canada: Whitecap Books Ltd. 240 p. Illust. (color). Index. 26 cm.

• **Summary:** This is an attractive book, with a full-color photo on almost every other page. However it is edited by a team of people who apparently don’t know much about the subject, since it contains many factual errors. It has no real author and many publishers, the main one being Murdoch Books, a division of Murdoch Magazines Pty. Ltd. (Sydney, Australia).

Contents: The soy story. Glossary of ingredients. Soy for breakfast. Breakfast in a glass. Soy for lunch. Soy for Sunday lunch. Soy for vegetarians. Note: The rest of the book is not vegetarian, containing recipes for beef, lamb,

chicken, pork, etc. Soy for dinner. Soy for parties. Soy for dessert. Soy at teatime. Cookery terms. Address: 351 Lynn Ave., North Vancouver, BC, Canada V7J 2C4.

646. Tale of tofu (Continued). 2001. Television broadcast. Canadian TV, Channel 1, The Body, Mind, and Spirit Channel. 1 hour. Dec. 2001.

• **Summary:** Continued: Chinese civilization, which is 5,000 years old, has an epic culinary legacy. The numerous tofu recipes and types of special tofu are based on the landscape, environment, and history of this singular nation. Four types of special tofu include iced bean curd, moldy bean curd, blood bean curd, and cured (smoked) bean curd.

Emei mountain (*Emeishan*) in southwest Sichuan province is sacred to Buddhists, with numerous temples throughout the mountain range. A 3-day supply of food is carried up the hill to the monasteries each day. Iced bean curd, found in this remote area, is made when snowy winter conditions make it difficult to transport food up the hill. An old monk tells of a very nutritious wild plant called the “magic taro.” The taro is mixed with rice flour and cooked into a porridge—a process similar to making soyamilk from soybeans. The monks developed the ingenious idea of preserving the taro porridge by ladling it in a layer about 2 inches thick over firm, level snow, then letting it freeze for over a month. Finally they dry the frozen taro in the sun to produce “iced bean curd.” Each brown piece (which is about 7 inches square and 1.5 inches thick) can be stored for up to 5 years. It looks like a little honeycomb and has a neutral taste. However it has the capacity to absorb the flavors of myriad spices, herbs, and sauces, from soya and chili, to sweet and sour. Its versatility gives it a place at every meal. Note: This type of tofu is apparently made without the use of soybeans.

The town of Tanko, set against the northern slopes of Huangshan or “Yellow Mountain (Anhui Province), is revered for its moldy bean curd, which is said to have been a favorite of emperor Zhu Yuanzhang, founder of the Ming dynasty and the first Ming emperor [lived 1328-1398; ruled 1368-1398]. Born into a peasant family, in 1344 he became a mendicant Buddhist monk. While begging for alms, he was sometimes rewarded with moldy tofu. When he became emperor [in 1368], he declared moldy tofu a royal dish. Today this Huangshan delicacy is fermented by using the excess water from the initial process of making tofu. The acidic nature of the water [whey] helps to raise the temperature and humidity of the container. Each piece of moldy tofu is about 3 by 2 by 1 inches, covered with a white mold mycelium, is incubated in large, stacked wooden trays. Since wet and humid weather are naturally conducive to fermentation, moldy tofu is best made during the summer, when the process takes only a few days; in winter it takes twice as long. At the end of the fermentation process, moldy tofu is firmer than regular tofu. “It is, in effect, tofu that has

gone bad.” Famous dishes in Huangshan are well known for various tofu specialties, such as Braised moldy tofu—in which the tofu, with its fluffy white mycelium intact, is stir-fried in a wok. But moldy tofu is an acquired taste and, despite its fame, not everyone appreciates its heady, strong flavor.

In the verdant plateau north of Huangshan (Yellow Mountain) is the age-old town of Xidi. Behind the ancient memorial archway is a tofu specialty that marks an agricultural festival. The palm-sized innovation looks like a Western doughnut, but in place of the hole, the tofu is indented at the center on both sides. At the end of the lunar year, the townspeople prepare for the agricultural festival that marks the end of the agricultural year. For this festival, celebrated on the 8th day of the last lunar month, the community preserves the harvest for the months ahead. Meat would be preserved in salt. In Xidi, the same technique has been adopted to the preservation of tofu. Historically these people have traded and traveled by sea over long distances. So they developed a kind of tofu that can keep for days after being cured over woodsmoke. Many small cylindrical cups made of woven bamboo are each lined with a filter cloth. Fresh curds are ladled in until the cup is full. The ends of the cloth are twisted tightly around the top as the whey begins to drain. A weight is then placed on top to press the curds into very firm tofu. Spices like peppercorn, anise, and cinnamon are added to the soyamilk before it is boiled. Then common salt is used as the coagulant!

Across China, the methods of tofu preparation reflect the availability of ingredients in that locale. In Xidi, salt is added to the tofu in a cloth filter; it quickly absorbs the liquid in the tofu. This tofu is left outdoors, where it is dried by the sun and wind in a week’s time, leaving behind a yellowish-brown mass. It is now ready to eat. Regular tofu is soft, smooth, and tender; it must be eaten fresh. Cured tofu is hard and old; it can keep for up to 2 years. This method of curing tofu has been handed down for centuries. The people of Xidi (in Zhouxi) are keepers of a rich and ancient heritage.

China has sovereignty over many ethnic minorities, each with its own history and culture—which each has managed to keep alive. The Miao tribe lives across the Guizhou region. They work hard, love to dance, and have a strong tradition of ancestral worship. Every new year the Miao worship their ancestors and gods by offering sacrifices, at a very important ceremony. They kill a chicken (which is considered a luxury among the hill tribes) and a pig (which they have been fattening for a year). Blood tofu is made only once a year, at the time of the spring festival. The pig is slaughtered and fresh blood is drawn from it. Most of the meat is preserved with salt. Cooking blood tofu is a long and complicated process. First the tofu is crumbled in a large bowl, then ingredients such as lard, peppercorn, and finally fresh pig’s blood are mixed in them kneaded together by hand to form a ball about 5 inches in diameter and pink in color.

The technique of smoking food has special significance

in China. In ancient times, the preparation of a royal feast of smoked dishes ranked among the highest tributes paid to royal guests. Using firewood and withered grass, the process of smoking blood tofu, which takes about 20 days, will cause each ball to shrink to about 3 inches in diameter and become dark brown in color, but will preserve it for a long time. After being smoked, it is boiled with cured meat for 40 minutes to add a spicy, hot flavor. This Miao delicacy is used to greet and honor their guests. The villagers have waited a year for this feast.

“Eaten in every corner of China, tofu is inexpensive, nutritious, and readily available... Tofu cannot claim the celestial role of manna from heaven. If anything, it is as down to earth and mediocre as the people who have made tofu throughout the millennia. Yet the unassuming masses cannot deny that bean curd has given them sustenance through hardship. Indeed, it has brought with it a certain taste of pleasure and satisfaction in their lives.”

647. Tale of tofu. 2001. Television broadcast. Canadian TV, Channel 1, The Body, Mind, and Spirit Channel. 1 hour. Dec. 2001.

• **Summary:** This is a unique color documentary about tofu in China, narrated by John Culkin (with a few English subtitles when Chinese are speaking), written by Zoe Siu Moi Yee and Lo Wing Yi, directed and executive produced by Tely Fung Wing Chuen, with photography by Ko Chiu Lem. Copyright 2000, it was broadcast in Canada in Dec. 2001. The cinematography is very well done, interesting, and often beautiful. Although the narrative contains many errors and much strange and condescending language, it also contains some new information, especially about unusual types of ethnic or regional tofu varieties. However tofu is presented as an ancient, exotic, foreign food, with no suggestion that it might become part of Western diets.

The story begins: In the “epic struggle for survival, one food has emerged the champion of the poor during the centuries of hardship. Inexpensive and yet nutritional, it is the humble bean curd—tofu.” It is “rich in amino acids and anticarcinogens.” “At once a much-needed protein supplement and a veritable health food for the poor, bean curd is an oddity in its own right. And if legend has it right, then maybe tofu is a manna from heaven for the Chinese.

“The mythology of tofu begins with the diminutive and unimpressive soya bean.” In Guizhou province (in southwest China), despite the harsh weather and rough terrain, soybeans grow well. In the village of Shenlin “soybean constitutes the staple food of the people.” All the families in Shenlin know how to make tofu but only 4 make and sell it (for 1 yuan/catty) to earn a living. One “old woman has devoted her life to the art of tofu-making, not so much for the income as for the pleasure of keeping up an old tradition.” As pasta is to the Italians, so where you find Chinese you will find tofu. Today most of the tofu in China is made from

soybeans imported from the USA and South America.

The Chinese greatly enjoy cooking; more than 30 products are derived from tofu. For example, crispy bean curd is used in Chinese hot pots. Pressed tofu is eaten during Chinese New Year in Nanjing.

Two sisters of the Miao minority hill tribe make tofu starting at 8:00 each evening. The first step is to make soymilk, which can provide a “valuable nutrition supplement to children in poverty-stricken areas.” Soymilk must first be boiled thoroughly (usually in a large wok-shaped container) before it is sold at the market. In rural communities, where central heating is a rare luxury, “many Chinese start the day by warming up with hot soymilk and Chinese-style fried doughnuts.” The Miao sisters sell soymilk in plastic bags to make it easier to handle. They make 600 packs each night; it is ready for distribution to retailers at dawn.

When hot soymilk cools, a thin layer forms on its surface. This “looks like a pale wrinkled pancake” and is called “bean curd skin” [yuba]. It is one of the most expensive soya products and only a few good-quality (transparent) pieces can be obtained per batch of soymilk. The rest is considered a lower grade product due to color deterioration which causes the lower layers to gradually turn opaque. Though it is an extravagance, those who love its flavor and texture find it well worth the expense. Modern technology now makes it possible to mass-produce bean curd skin.

“In the half-forgotten village” of Kaili, in Guizhou province, the art of making pressed bean curd still thrives. “Plaster of Paris catalyzes the ingredients and coagulates the soymilk. Surprisingly, the process has no adverse side-effects.” Various local flavoring agents are added, resulting in a line of “dried products.” Regular flavors include marinated bean curd and pungent bean curd. Exotic varieties include cowhide bean curd and tea-flavored bean curd. These are sold as snacks in local markets.

Curing the tofu with woodsmoke enables it to be preserved for 7 more days. Since the smoking process is time consuming, it is fast becoming obsolete, and it costs an extra 4 cents per catty of tofu. Making pressed bean curd requires “back-breaking labor. Each day these girls must stand in the sweltering heat of the smokehouse for 13 hours in order to make 500 catties of pressed bean curd.” No effort is spared in making these “edible little bricks of bean curd.

We can try to preserve tofu “or we can let it rot” to make fermented bean curd. The tofu is left to mold for several days is a process “not unlike that of making cheese. The workers spread a kind of mold onto the surface of the bean curd, which is then stored at a temperature of 25-30°C for 3 days. A layer of thin white hair begins to sprout on top of the bean curd.” This tofu is then stored in large jars for 3 months while fermentation takes place, breaking the protein in the tofu down into amino acids. “Sometimes the bean

curd is wrapped in mustard leaves and stored for 12 months” to create a special product. In China “it is believed it was not human beings, but apes, that first discovered the joys of fermented food”—according to legends in ancient literature. Chinese greatly enjoy wine, as well as bean curd. “It adds a certain flavor to otherwise harsh rural lifestyles. Here, to make poverty bearable, the saying goes, ‘All you need is one piece of fermented tofu for one meal and a bottle of fermented tofu to last the year.’”

In its heyday, a little village in Anhui province (eastern China) was home to about 200 families “solely engaged in making tofu.” “It is famed for producing the best and most sought-after in China.” Concerning the origin of tofu, “most Chinese generally subscribe to the legend of a certain feudal lord, Liu-An of Huai-Nan. Two thousand years ago, during the Han dynasty, Liu-An searched far and wide for the fountain of youth. He believed he could discover the secret of immortality and turn it into a magic pill. When his valiant efforts failed, he threw his half-finished potion into a river in disgust. Natural plaster in the river chemically reacted with the mythical ingredients. And so it was that the first block of bean curd was bestowed upon humanity.” The legendary location of his famous experiment is where the “tofu village” stands today. The little stream of historic fame still runs through the village. In its water, the people “wash their clothes, clean their shoes, and prepare the beans that will be made into tofu.” One catty of soybeans will yield as much as 3-5 catties of tofu. “The people of this village are content that theirs is the original and authentic recipe for tofu. They have inherited a gift from history.” The myth of Liu-An has secured this obscure little village its place in Chinese history.

Many Chinese use bicycles or walk with a shoulder pole to carry their tofu to the nearest market. Some leave home as early as 5:00 in the morning and walk for 2 hours. Today, mass-produced tofu in China is driving village tofu makers out of business.

Freshness is tofu’s strength, but also its weakness. “Tofu has a short shelf life and cannot be taken on longer journeys. Even the highly pungent preserved bean curd needs to be eaten fresh. This bean curd, with its forbidding coloring and pungent aroma, can only be found in Nanjing. This brown, smoked bean curd is a “dry” variety with a special, and no less enticing smell.”

To make pungent black tofu, the beans are ground in a mechanical grinder, the soya mixture is first placed in a U-shaped rattan mold, immersed in a large pot, then marinated in a special sauce (made from a centuries-old recipe including anise, cinnamon, peppercorn, and black sesame seeds, in wide-mouth earthenware vats, 3 feet in diameter) to produce its unique color and flavor. This tofu is part of the famous Qinghai cuisine of Nanjing, named after the Qinghai River. To preserve its unique flavor, it must be steamed before it is rinsed. Aficionados of pungent black tofu “agree with most visitors that its bold smell evokes the odor

of football [soccer] shirts after a tough game.” Continued.

648. Dunlop, Fuchsia. 2001. Sichuan cookery. London: Michael Joseph. lxxv + 276 p. Color illust. [24] p. of plates. 22 cm. *

• **Summary:** Chengdu is the capital of Sichuan province. “In most Chengdu markets the standard white bean curd is available in several consistencies; there is also smoked bean curd in thin, firm slabs with a honey-brown surface, glossy chunks of firm bean curd which have been simmered in five-spice broth, large squares of ‘bean curd skin’ [probably yuba], sausage-shaped rolls of bean curd with an Edam-like texture, tender flower bean curd and ripe-smelling fermented bean curd in chilli sauce.”

649. Hsiung, Deh-Ta. 2001. The Chinese kitchen. New York, NY: St. Martin’s Press. 240 p. Foreword by Ken Hom. Illust. (color). 29 cm. [30 ref]

• **Summary:** This book focuses on ingredients and essential kitchen tools used in Chinese cooking. For each it gives all or most of the following: Name romanized in Mandarin Chinese and Chinese characters. A glossy color photo of the item. A basic description. Appearance and taste. Method of manufacture. Buying and storing. Culinary uses. 1-2 recipes. The many color photos are very useful, but the index is hard to use

Soy related: Black bean sauce recipe (p. 33). Soy (soy sauce; *jiang you*, p. 64-67; Recipes are Soy chicken and Soy duck. Mushroom soy sauce is a Cantonese specialty. Chili soy sauce is sold in small bottles).

Seasonings section: Oyster sauce (*haoyou*, p. 79. Soy sauce is a typical ingredient).

Salted black beans (*douchi*, p. 88-89. “They are very popular all over China, especially in rural households in the South.” They are also the oldest recorded soy food in Chinese history, and the ancestor of soy sauce. Indeed the water in which salted black beans has been soaked is often used as a substitute for soy sauce by low-income people, to save money. To make *douchi*: Boil black soybeans until soft, then soak in water overnight. Steam them for 3 hours the next morning. Inoculate them with *Aspergillus oryzae* mold and ferment for 15-21 days. Then cover beans with a brine solution and alcohol, and allow to mature for at least six months. Then spread them out to dry in the sun. Steam them again until soft and spread in the sun to dry. Repeat the last step one more time. The product is, at last, ready to use).

Black bean sauce (*chizhiang*, p. 90-91. “I have a strong suspicion that commercial black bean sauce {liquidized, salted black beans seasoned with soy sauce, salt, sugar and spice} is a Hong Kong invention concocted mainly for the convenience of Westerners. I cannot remember ever seeing it in China, nor can I find any mention of its existence in any Chinese publication, past or present.” “Commercial black bean sauce is less aromatic than the fresh paste one makes

oneself... Some varieties also include added orange peel, ginger, chilies or garlic.” A number of different brands are available. The author uses this only for convenience. “One of the most popular variations is black bean and garlic sauce.” Recipes include: Steamed spareribs with black bean sauce).

Yellow bean sauce (*huang jiang*, p. 92-93. “Sometimes labeled brown bean sauce or ground bean sauce {*mochi jiang*}, this is the soybean paste made from crushed or ground, salted and fermented yellow soybeans, which are sweeter and less salty than black beans.” Spices and other seasonings can be added to this basic bean sauce giving many varieties. In different regions of China, seasonings and spices are added in different proportions. Hoi Sin sauce {p. 94} is one example. Guilin chili sauce {p. 95} and Peking Duck sauce {p. 93} are others. To make: Soak soybeans for 16 hours. Then steam until soft. Ferment beans for about 5 days, stirring and turning every other day. Blend into beans salt, sweet glutinous rice wine, and dark brown sugar. Fill a pottery jar with them—not too tightly, nor too loosely. Seal opening tightly then let jar stand for 2 days. Turn jar upside down in a cool, dry place and ferment beans for 3 more months. The beans are now ready to be used as is, or to be ground and blended with additional seasonings).

Hoi Sin Sauce (*haixian jiang* in Mandarin or *hoisin jiang* in Cantonese, p. 95. This very popular Cantonese specialty, also known as “barbecue sauce,” has become almost as popular as soy sauce in most households. To make: Season yellow soybeans with sugar, vinegar, salt, chili, garlic, sesame oil, and red coloring; thicken with flour and water. The author believes that Hoi Sin sauce should not be used with Peking Duck).

Guilin Chili sauce (*Guilin lajiao jiang*, p. 95. Guilin is the capital of Guangxi, located just north of Guangdong {Canton}. To make: Mix fermented and salted beans with fresh red chilies. Then stir in the lesser ingredients: garlic, salt, sugar, and starch. The author’s favorite authentic brand, Mount Elephant, is sold in a rustic brown earthenware pot. Recipe: Chicken cubes with chili bean sauce).

Chu Hou bean paste (*chuhou jiang*, p. 96. To make: Use yellow soybeans, wheat flour, sugar, lard or vegetable oil, and sesame. Recipe: Chu Hou chicken).

Sweet bean paste (*dousha*, p. 97. Although there are red and black sweet bean pastes, they are both made from red beans [azuki beans]. “I discovered this unexpected fact only very recently, while researching this book.” To make basic red bean paste: Gently boil red [azuki] beans in water until soft. Grind to a pulp, then clean and strain them to get rid of the hull / skin; filter and press. To this basic unsweetened paste, mix in crushed rock sugar. For “sweet black bean paste, add additional sugar with lard or vegetable oil, then heat while stirring until the color turns black. Essence of fragrant flowers, such as roses or sweet-scented osmanthus {*Osmanthus fragrans*; cassia} is usually blended with the black paste, which is shiny black. Sweet bean paste is

widely used as a filling for steamed buns {*baozi*}, cakes and other desserts. “In China, sweet black bean paste is far more popular than the red variety, and as a child, I always preferred the sweeter taste of the former.” Recipe {served in most non-Cantonese restaurants}: Red bean paste pancakes).

Chili bean paste (*toban jiang*, p. 98. This is distinguished from other thick seasonings in that it is made from broad beans rather than soybeans. The most delicious product comes from Pixian County, in the Chengdu Plains near Chengdu—the capital of Sichuan province. Recipe: Home-style braised bean curd).

Fermented bean curd (*doufu nai*, literally “bean-curd milk,” p. 102-03. It has often been compared with a strong cheese and is definitely an acquired taste: “you either love it {as does almost everyone in China} or hate it {as does almost everyone else}. But everyone loves it when it is disguised as a seasoning. Also called *jiang doufu*. A legend of its origin states that two immortals told a street bean-curd seller how to make it, starting with molded bean curd. “Since the 15th century Fengdu fermented bean curd has held an excellent reputation.” Today the two leading brands are The Immortals and The Two Immortals. To make it: (1) Make bean curd [tofu]. (2) Lay cubes of bean curd on beds of rice straw for about 5 days in spring or 7 days in winter. (3) Dry the mouldy [moldy] bean curd in the sun, then marinate with salt, sorghum spirit and spices. Mature in brine in sealed earthenware urns for at least 6 months. The two basic types are red and white. The red type, which has the milder flavor of the two, has ground red rice added to it instead of spice. In China, it is most widely consumed for breakfast with rice congee. Recipes: Pork chops with red fermented bean curd. Sichuan-style fried green beans).

Vegetables section: Soybean sprouts (*Huang douya*, *Glycine hispida*, p. 150-51. Soybean sprouts are much more widely used in China than mung bean sprouts. For how to grow at home, see p. 148. Soybean sprouts are almost twice as large as mung bean sprouts both in length and diameter. Soybean sprouts are the main ingredient in Vegetarian stock {p. 71}. Neither soybeans nor their sprouts should ever be eaten raw. Recipes: Soybean sprouts salad {with parboiled soybeans}. Assorted vegetable soup).

Under Lotus root (p. 144) is a recipe for Braised pork with lotus root that calls for “dried bean curd sticks.”

Under Ginkgo nut (p. 167) is a recipe for Vegetarian casserole (A slightly simplified version of Buddha’s Delight, p. 193) that calls for “3 8 inch long pieces (1 oz.) dried bean curd sticks, soaked.”

Note 1. This is the earliest English-language document seen (June 2011) that uses the term “dried bean curd skin sticks” to refer to dried yuba sticks. The recipe intends to call for “Three 8-inch long dried bean curd sticks.” Later, we are instructed to “Cut the bean curd sticks into short sections,....”

Preserved and processed foods section: Pickles (*Jiang cai*, p. 185, are vegetables pickled in soy sauce-based

hydrolysate).

Bean curd (tofu, doufu, p. 196-99. Bean curd was invented in China “and is regarded as the country’s national dish...” Proof exists that bean curd, made from soybeans, was sold in markets during the Tang dynasty {618-907}. Until the 17th century, bean curd was eaten exclusively by the poor until Kung Xi {1662-1722}, a Qing dynasty emperor, “discovered it while visiting Suzhou in Jiangsu province when he ventured out incognito to mingle with the people in the streets. When he returned to Peking, the Emperor ordered the chefs of the Palace kitchen to produce bean curd dishes. Overnight, humble bean curd became nobleman’s fare and is now popular worldwide.” It is off-white in color. Under “Medicinal uses: The nutritional benefits of bean curd cannot be exaggerated.” Free of cholesterol, it is ideal for combatting heart disease and high blood pressure. It is also extremely easy to digest, so it is very good for infants, the elderly and invalids. Recipe: Sichuan spicy bean curd {*Ma po doufu*}. Fish and bean curd casserole. Stir-fried shrimp with bean curd. Stuffed bean curd {Popular in Canton and with the Hakka people}).

Deep-fried bean curd (*youzha doufu*, p. 200. Sold in the form of small cubes, large squares, or triangles. Used in soups, stews, casseroles, braised dishes or stuffed triangles).

Pressed bean curd (*doufu-gan*, p. 201. After being pressed it is typically seasoned with soy sauce and a little five-spice, or star anise, or cinnamon).

Dried bean curd skins (*fuzhu, fupi*, p. 202-03. One kind is a thin flat sheet; the other is rolled into a stick. The sticks require much more soaking before use—several hours or overnight. Recipes: Bean curd skin and asparagus soup. Vegetarian bean curd skin roll).

Tofu (in recipes only): p. 75, 139, 189.

Non-soy: Gluten (p. 34). Cooking oils (p. 58; soy oil is not mentioned). Sesame seed oil (p. 60). Sesame paste (p. 61). Peanut (p. 164-65).

Note 2. This book was first published in Great Britain in 1999 by Kyle Cathie Limited. This is the first U.S. edition. Address: Author and chef, London.

650. Hsiung, Deh-Ta; Simonds, Nina; Lowe, Jason. 2001. Food of China. Sydney, NSW, Australia: Murdoch Books. 296 p. Illust. (color). Index. 31 cm. *

• **Summary:** An excellent book with many fine color photos. One section titled “Soy” (p. 192-95) discusses: Introduction. Soy sauce. Tofu. Tofu products: Fermented tofu, mouldy tofu, tofu skin [yuba], etc. Northern-style tofu.

Fermented tofu is mentioned on pages 9, 164 (1 tablespoon red fermented tofu), 167, 193, Contains a glossary of Chinese food and cooking (p. 288-89) which includes an entry for “fermented tofu,” which is sometimes called “preserved tofu or tofu cheese and is used as a condiment or flavoring.”

Photos show: Kung Wo Bean Curd factory in Hong

Kong. A soy sauce factory and its canned “Premium Soy Sauce.”

651. Namkoong, Joan. 2001. Go home, cook rice: A guide to buying and cooking the fresh foods of Hawai’i. Honolulu, Hawaii: Namkoong Publishing. 104 p. Illust. (color photos by Rae Huo). Index. 28 cm. [28 ref]

• **Summary:** “A collection of food stories that appeared in the *Honolulu Advertiser* from 1994 to 2001 and information about food products.” “Guide to buying and cooking the fresh foods of Hawai’i” (from the publisher).

The Foreword begins: “‘Go home, cook rice’ is what we say at the end of the day when we’re heading home;...”

The section titled “Soy” (p. 67-71) begins with brief definitions of tofu, fresh soybeans [edamame], soy sprouts, miso, natto, and “fermented black beans.” Then come recipes: Basic miso sauce (with “white or red miso”). Spicy soy beans (with “1 pound soybeans”). Soy bean sprouts (*kong na mul* in Korean, with “1 {8-ounce} package soy bean sprouts”). Page 69 titled “Soybean curd,” with a sidebar of “Tofu tips” describes more soyfoods: Tofu (incl. okara and silken tofu). Aburage (thicker, denser slabs of fried tofu are called *Dau hu chien* in Vietnamese). Then we read this unusual statement: “Before a coagulant is added to form tofu, a thin skin forms on the surface of soybean milk as it stands. This skin is lifted off and allowed to dry, forming a product that has a firm, chewy texture when reconstituted in water. Known in Chinese as *fu jook* [dried yuba sticks], bean curd skin is used as an edible wrapper, and in braised and vegetarian dishes. They come in large flat sheets or in ‘bamboo’ sticks that are pleated.”

Tempeh. Fermented bean curd (which can be red or white in color. Fermentation in rice wine and salt produces a pungent flavor). A color photo shows 3 forms of tofu: fresh tofu, aburage, and *dau hu chien* [which resembles Japanese deep-fried tofu cutlets—*atsuage / namaage*]. Then a recipe for Lemon grass tofu (Vietnamese). Page 71 discusses “Soy bean sauces” such as hoisin, bean sauce, and shoyu (made with koji). Page 72: “The flavors of soy sauces.” Chinese soy sauces (tend to be saltier than Japanese shoyu). Tamari. Kecap manis. Light or sodium reduced soy sauces. Dashi soys. How to use soy sauces. This section ends with recipes for: Basic Korean sauce (with “1 cup soy sauce”). Basic teriyaki sauce (with “1 cup soy sauce, mirin, sake, raw white sugar, smashed garlic, and a piece of smashed ginger). Basic hoisin sauce (with “6 tablespoons hoisin, 2 tablespoons soy sauce, brown sugar, sesame oil, minced garlic, minced ginger, and Sriracha sauce {a Thai, Vietnamese, or Chinese hot sauce}). Address: Former *Honolulu Advertiser* food editor, Hawaii.

652. Robertson, Robin. 2001. Vegetarian meat & potatoes cookbook. Boston, Massachusetts: The Harvard Common Press. xii + 356 p. Illust. (by Paul Hoffman). Index. 23 cm.

• **Summary:** Another outstanding book from Robin Robertson. From the front cover below the title: “275 hearty and healthy meat-free recipes for burgers, steaks, stews, chilis, casseroles, pot pies, curries, pizza, pasta, and other stick-to-your-ribs favorites.”

The Introduction begins: “When I married him in 1971, my husband, Jon, was a ‘meat and potatoes’ kind of guy. He remains so today, even though he has been a vegetarian since 1986. The answer to this seeming paradox can be found in the pages of this book.” Chapter 5, “Steaks, vegetarian style” (p. 123-63) is packed with “meaty” main dishes featuring seitan (home made), tempeh, tofu and yuba.

A half-page sidebar titled “All about tofu” (p. 140) gives a basic description and lists the different types.

Another sidebar titled “A brief bean bio” (p. 266) states: “The most useful and versatile bean of all is the soybean. For years, the soybean has been hailed as one of humanity’s greatest nutritional treasures, because there are a number of high-protein foods derived from it, such as tofu, tempeh, and miso. Roasted soy ‘nuts’ and edamame, boiled fresh soybeans in the pod, are other delicious ways to enjoy soy... Beans and grains are like the ‘meat and potatoes’ of vegetarian cuisine. Add some steamed or stir-fried vegetables for a complete, well-balanced meal.”

The word “tofu” appears on 84 pages of this book, “tamari” on 58 pages (she uses the fixed phrase “tamari or other soy sauce”), “soy sauce” on 50 pages, “seitan” on 41 pages, “tempeh” on 35 pages, “hoisin” on 15 pages, “teriyaki” on 8 pages, “yuba” on 9 pages, “soybeans” on 6 pages, “miso” on 5 pages, “soy yogurt” on 4 pages, “shoyu” on 1 page, “edamame” and “soybean” on 1 page each.

653. Wu, David Y.H.; Tan, Chee Beng. 2001. *Changing Chinese foodways in Asia*. Hong Kong: Chinese University Press. xii + 288 p. See p. 27-28. 24 cm.

• **Summary:** The section titled “Food as offerings: Manifestation of the traditional eating patterns” states (p. 27-28): “Among the many sacrificial activities, the most important and most serious one is the sacrificial offering rite to the ancestors. This activity takes place on the days of the Spring or Autumn Equinox, on Qingming day in Spring or on the day of Chongyang in Autumn.” The offerings must include the “five fruits” and the “five sweets.” A list of the five sweets is given. “In addition the offerings may also include rice liquor, tea,... cooked or uncooked rice, melons, mustard, dried bean milk cream [dried yuba], mushroom...”

654. Grimes, William. 2002. Diner’s journal. *New York Times*. March 15. p. E43.

• **Summary:** This is a review of the Japanese restaurant Kai (822 Madison Ave., at 69th St.). The name refers to kaiseki, the elegant tea ceremony cuisine. “The two main courses include tilefish wrapped in yuba, or soy-milk skin, and accented with mitsuba, a chervil-like herb. The sauce is a

seafood broth...”

655. Asimov, Eric. 2002. \$25 and under: Japanese noodles make you forget sushi. *New York Times*. April 10. p. F10.

• **Summary:** This is a review of the Japanese restaurant Onyi (330 Avenue of the Americas, near West Forth St., Greenwich Village—in downtown {southern} Manhattan in New York City). Menchanko means foods mixed together in one huge bowl. “The oyster Menchanko (\$12.50), a miso broth with ramen noodles, is thick with fat, tender oysters, chunks of tofu, vegetables and billowy sheets of soy-milk skin [yuba] that look like handkerchiefs but are soft as bean curd.”

“The already spicy miso Menchanko (\$9.75) is... crammed with shrimp, chicken and balls of salmon along with tofu, soy-milk skin and vegetables.”

After 5 p.m. you can supplement noodle dishes with “simple edamame (\$3.75), boiled green soybeans that are the Japanese equivalent of salted peanuts, to complex yuba chakin (\$6.75), crisp tofu [sic, yuba] purses stuffed with vegetables and crab meat.”

Note: The word “Oni” means devil in Japanese.

656. Grimes, William. 2002. Restaurants: A Japanese-French hybrid, in little bites. *New York Times*. April 24. p. F8.

• **Summary:** This is a review of the Japanese restaurant Kai (822 Madison Ave., at 69th St.). “Kai is short for kaiseki, the traditional meal of refined little bites [*deai*] that grew up around the tea ceremony.” At Kai, the food is modernized kaiseki, and the commitment to presentation and style is total. It is a feast for the eyes—and a bold experiment.

The executive chef, Hitoshi Kagawa, has grafted French ideas onto kaiseki cuisine with an elegant hand. “In a Japanese response to cooking en papillote [using edible oiled paper], he has wrapped tilefish in a soy-milk skin [yuba] that, miraculously, quivers but does not break.”

657. Wu, Olivia. 2002. The hidden world of tofu: Local producers offer a bogging array—from delicate and custardlike to chewy and crisp. *San Francisco Chronicle*. Oct. 30. p. E1, E4. Food & Wine section.

• **Summary:** About Chinese tofu, with recipes. Color photos show: 1. Yuba. 2. Soymilk. 3. Moist yuba. 4. Vegetarian duck. 5. Pressed tofu. 6. Tofu threads. 7. Fermented tofu. 8. Tofu puffs. 9. Dried yuba sticks. 10. Deep-fried tofu triangles. 11. Fried tofu knots (bayie knots). 12. Sheets of fresh yuba hanging above pans of steaming soymilk at China Tofu factory in Hayward. 12. Fresh, hot soymilk pouring from a spigot into a barrel, where it will be made into tofu. 13. At China Tofu, Hayward, one worker unwraps cloths from a tray of freshly-pressed tofu which another pours steaming curds into a nearby cloth-lined tray. 14. Chef Nei Chia Ji, of restaurant Jai Yun (933 Pacific Ave. at Mason, San Francisco) offers 6-7 delicious tofu dishes.

A tofu glossary, gives for each of 16 entries: Chinese characters, pinyin transliteration, English term, how sold and used. Soymilk (doufu, doujiang), tofu flowers (doufu hua, douhua, doufu nao), silken tofu (nun doufu), soft tofu (ruan doufu), firm tofu (ying doufu), pressed tofu (doufu gan), five-spice pressed tofu (wuxiang doufu gan), pressed tofu sheets (baiye, qianzhang), pressed tofu loops (baiye jie), pressed tofu noodles (gansi, doufusi), yuba (doufu pi, fuye), fermented tofu (furu, doufuru), vegetarian chicken, cuck (suji, suyia), stinky tofu (cho doufu), tofu puffs {deep-fried} (you doufu), deep-fried tofu (zha doufu). Address: Staff writer.

658. Dragonwagon, Crescent. 2002. *Passionate vegetarian*. New York, NY: Workman Publishing. x + 1110 p. Illust. (by Robbin Gourley). Index. 23 cm. [10 ref]

• **Summary:** A superb, massive book, “with more than 1,000 robust recipes with notes on cooking, eating, loving, and living fearlessly”—as the cover proclaims. Very nicely designed, with many delicious recipes. The author is an outstanding writer with a deep knowledge of ingredients—including soyfoods.

Chapter 10, “Celebrating soyfoods” (p. 623-78) begins: “As a soy-loving girl from way back I invite you to enter an ever-expanding universe of foods: not merely extraordinarily healthful, but delectable and diverse—great ingredients for a passionate cook.” This chapter’s contents: Introduction. Inecdote. Whole soybeans. Green soybeans (edamame). Canned soybeans. Cooked dry soybeans. Milled soybeans (soy flour and soy grits). Soynuts and soy nut butter. Tempeh. Miso. Natto. Okara. Soy protein isolates. Textured soy protein (TSP or TVP). Soy sauces. Soy milk & soy milk products (soy yogurt, soy cheeses). Tofu & tofu products (fresh perishable tofus, classic traditional, seasoned tofus {savory baked tofu, other seasoned baked tofus}, ready-made tofu dips and spreads, ready ground tofu). Dry or packaged tofus (cupboard, like silken tofu). Other miscellaneous tofus (tofu burgers and sausages, deep-fried tofu, freeze-dried tofu [dried frozen tofu], tofu hot dogs, yuba).

Concerning yuba the author writes (p. 656): “I believe this traditional Asian product will explode onto the American soy-scene soon because it is so versatile and delicious and has a long and honorable history as a meat alternative. It is the unique thin-chewy texture of yuba sheets, when layered with seasonings and shaped, stacked, cut, and prepared in certain ways, that gives such a convincingly ‘meaty’ feeling to such dishes.”

The word “tofu” appears on 100 pages in this book, “tamari” on 100 pages (she uses the phrase “tamari or shoyu soy sauce”), “soy sauce” on 100 pages, “shoyu” on 98 pages, “tempeh” on 88 pages, “seitan” on 72 pages, “miso” on 58 pages, “soy milk” on 47 pages, “tofu sour cream” on 40 pages, “silken tofu” on 30 pages, “soybeans” on 25 pages, “baked tofu” on 22 pages, “savory baked tofu” on 16 pages,

“firm tofu” on 10 pages, “green soybeans” and “edamame” each on 8 pages, “soy flour” on 6 pages, “soy ice cream” and “TVP” each on 5 pages, “dairy free” on 4 pages, “firm silken tofu,” “teriyaki,” “textured vegetable protein,” “yuba” and “whole soybeans” each on 2 pages, “Silk Soymilk Creamer” and “meat alternatives” each on 1 page.

659. Emi, Kazuko. 2002. *Japanese cooking: The traditions, techniques, ingredients and recipes*. London and New York: Hermes House. 256 p. Illust. (color). Index. 31 cm.

• **Summary:** A beautiful book, with many old color woodblock prints and creative color photos. With recipes by Yasuko Fukuoka. Contents: Introduction. The development of Japanese cuisine. Foreign influences. The impact of isolation. Sushi: a national favourite. The tea ceremony. Traditions and festivals. Seasonal and regional foods. Cooking and eating. Equipment and utensils. Utensils for cooking with rice. Cooking at the table. Crockery and cutlery. Drinking vessels. The Japanese kitchen: Rice and rice products,... dried beans (incl. soya beans, boiled soya beans, dried yellow beans, dried green beans, black soya bean, soya bean products, kinako, natto), fresh beans (incl. eda-mame), tofu and tofu products (incl. fresh tofu, okara, silken tofu, koya-dofu, yuba, fried tofu, abura-age, atsu-age, ganmodoki, home-made ganmodoki), gluten products, mushrooms, seaweeds, fish, shellfish, fish roes, fish products, fish pastes, meat and chicken, sauces for flavouring and dipping, ready made sauces,... Japanese cooking (recipes). Glossary. Acknowledgements. Shopping information.

The index mentions: Abura-age (tofu), atsu-age (tofu), azuki beans (incl. *an* {sweet bean paste}), eda-mame, gammodoki, kinako (yellow soya bean flour), koya-dofu, miso, miso soup, shoyu (soy sauce), soya beans, silken tofu, sukiyaki (with tofu), tofu, yuba, vegetarian tempura.

Concerning kinako (roasted whole soy flour): A photo (p. 65) shows kinako made from soybeans with three different color seedcoats: black, yellow, and green. The kinako made from the black soybeans is the darkest of the three—a medium brown—but not at all black. The kinako made from the yellow soybeans is the lightest of the three—yellowish brown. The kinako made from the green-coated soybeans is intermediate between the other two in darkness—light brown—but with no trace of green in its color. When kinako is mixed with an equal volume of sugar and a pinch of salt, it is rolled in lightly-boiled, soft mochi cakes which make tasty confection. Kinako, which is also used to make *wagashi* (Japanese cakes / confections), is sold at most Japanese grocery stores or supermarkets. Address: Japan.

660. Kyoto–Kyôtôfu kyôyuba kyômiso: Kyôto de tabeyô. Herushi Kyôto [Kyoto–Kyoto yuba and kyoto miso: Let’s eat in Kyoto. Healthy Kyoto]. 2002. Kyoto: Kyoto Shinbun Shuppan Senta. 80 p. 26 cm. [Jap]* Address: Japan.

661. Kyô-tôfu kyô-yuba kyô-miso: Kyôto de tabeyô herushii Kyôto [Kyoto's tofu, yuba and miso: Let's eat Kyoto's healthy foods]. 2002. Kyoto: Kyoto Shinbun Shupan Senta. 80 p. 26 cm. [Jap]*

• **Summary:** A book promoting soyfoods made in Kyoto. Address: Japan.

662. Ling, Kong Foong. 2002. Food of Asia: authentic recipes from China, India, Indonesia, Japan, Singapore, Malaysia, Thailand and Vietnam. Singapore: Periplus. 192 p. Illust. (color photos). Index. 31 cm.

• **Summary:** This oversized paperback book, loaded with glossy color photos, is an expanded version of the original 1998 edition. The introduction and essays are by Kong Foong Ling. The index, which is poor, makes the book hard to use if you are looking for particular foods found throughout Asia such as soybeans, soy sauce, miso, salted / fermented black beans, yuba [bean curd skin], etc.

Contents: The flavors of Asia. Ingredients. The Asian kitchen. Burma. China. India. Indonesia. Japan. Korea. Malaysia & Singapore. The Philippines. Sri Lanka. Thailand. Vietnam. Appendix.

The "Ingredients" section (p. 10-17) includes: Bean curd (incl. cotton or momen tofu, silken bean curd, deep-fried bean curd or aburage, grilled bean curd or yakidofu, fermented bean curd or nam yee). Bean curd skin [yuba]. Black beans, salted (and fermented). Hoisin sauce ("A sweet sauce made of soy beans, with spicy and garlicky overtones"). Miso (incl. red miso and white miso). Salted soy beans (incl. "yellow bean sauce"). Soy sauce (incl. light soy sauce, black soy sauce, red soy sauce, Kikkoman, tamari, thick sweet soy sauce (kecap manis—Indonesian)). Tempeh. Also: Red beans (dried azuki). Seaweed (incl. dried kelp, golden kelp, mozuku, salted dried kelp, laver or nori, wakame). Sesame (black and white seeds, tahina {tahini}). Sesame oil. Sesame rice crackers.

Korea (p. 109+). Page 110: There are also many fermented pastes and sauces for dipping, called *chang*. Every restaurant and home has its own formula for making *chang*. Based on a fermented mash of soy beans, the three most common varieties are *kan chang* (dark and liquid), *daen chang* (thick and pungent), and *gochu chang* (fiery and hot).

Soybean is mentioned on pages 8, 11, 68, 89.

Beancurd or bean curd is mentioned on pages 8, 10, 11, 26, 32, 33, 35, 36, 40-42, 68, 70-71, 74, 89, 90, 92, 93, 94, 96, 100, 102, 104, 107, 111, 112, 113, 119, 120, 127, 133, 158, 172, 175, 185, 189, 190, 191, 192.

Bean curd skin [yuba] is mentioned on pages 11, 35, 36. Bean paste and bean paste sauces, p. 8, 32.

Fragrant soy sauce is mentioned on page 128.

Also: Red bean paste, p. 46 (canned, azuki).

663. Sugimoto, Takashi; Iwatate, Marcia. 2002. Shunju:

new Japanese cuisine. Sensational recipes from Tokyo's most famous restaurant. Singapore: Periplus Editions. 271 p. Foreword by Charlie Trotter. Illust. (chiefly color, by Masano Kawana). Index. 26 x 23 cm.

• **Summary:** Contents: Foreword. The Shunju way: The Shunju philosophy (history, architecture, bar, lighting, *zashiki* {dining room floor}, *chashitsu* {tea room}, hospitality {*motenashi*}). The seasonal kitchen. Spring. Summer. Autumn. Winter. Appendixes: Step by step preparation techniques (incl. Fresh soymilk, Green bean soymilk yuba {*Ryokuto nama yuba*}). Chefs (profile of head chef at each restaurant). Glossary of ingredients. Mail-order sources of ingredients. Acknowledgments.

"The history of Shunju began in 1986 in Mishuku, Tokyo." Today, Shunju has five different outlets in Tokyo—Mishuki, Hiroo, Torizaka, Bunkamura Dori, and Tameiki Sanno (p. 14).

"The most important element in Shunju's cuisine is to be able to truly appreciate the four seasons and the abundant blessings which mother nature has bestowed upon us...—Marcia Iwatate" (p. 24).

At the recipe for Green and lavender tofu squares (*Masu-dofu*) we read (p. 53): Tofu is undoubtedly one of the most representative dishes of Shunju. Our tofu is made daily—soymilk is curdled with *nigari* (bittern)—in different ware unique to each of our five restaurants; in this case in *masu* (traditional square, wooden measuring boxes)." To make green soymilk, see p. 255.

The glossary of ingredients (p. 258+) includes azuki (*koshi an*, *ogura an*), edamame, miso (many types), okara, sake (incl. koji {molded steamed rice}), shoyu (incl. koikuchi shoyu, usukuchi shoyu, shiro shoyu, tamari shoyu), tofu, ume, umeboshi, wasabi, yuba (famous as a Kyoto delicacy).

Tamari is mentioned on 98 pages of this book, miso on 67 pages, soy sauce on 54 pages, shoyu on 51 pages (incl. "koikuchi shoyu" on 34 pages, "usukuchi shoyu" on 13 pages and "shiro shoyu" and "tamari shoyu" on 2 pages each), tofu on 18 pages, soymilk on 14 pages, yuba on 7 pages, koji on 5 pages, nigari and edamame on 4 pages each, black soybeans on 2 pages (p. 53 and 84).

Natto and kinako are not mentioned. Address: Creators and founders, Shunju restaurants, Japan.

664. Treloar, Brigid; Inge, Karen. 2002. Healthy soy: Cooking with soybeans for health and vitality. Hong Kong: Periplus Editions (HK) Ltd. Printed in Singapore. 112 p. Illust. (color). Index. 24 x 22 cm.

• **Summary:** This is a beautiful book, with stylish and informative full-page glossy color photos on every other page. It is well researched, comprehensive, and generally uses standard soyfoods terminology. It is also strange: We are not told in which country the publisher is located (perhaps Hong Kong or Singapore) or where the authors

live. It is distributed in North America, Japan and Korea by Tuttle Publishing. On the inside rear dust jacket: www.tuttlepublishing.com. It is clearly targeted at a world market.

Contents: Introduction. The health benefits of soy: The heart, cancer, menopause, osteoporosis, weight control, allergies, lactose intolerance, the nutritional value of soy, protein, phytoestrogens, fats, calcium, soluble fiber, vitamins and minerals, energy, carbohydrates, how much soy do we need? (as an exchange for meat), how to use the nutrition table. Nutrition table (for various soyfoods). Soybeans: Green soybeans—fresh and frozen, dried soybeans, how to buy and prepare soybeans (selecting and storing dried soybeans, preparing dried soybeans, soaking, pan-roasting, boiling, pressure cooking, canned). Soy foods: Tofu (selecting and using, storing, freezing), bean curd sheets (yuba), deep-fried tofu (age; seasoned tofu), miso, tempeh, soya sauce (shoyu; regular, low-salt, light, tamari, ketjap manis), soy milk, soy flour, soy nuts, soy germ powder, soy oil, soybean sprouts, soybean paste (fermented), natto, soy dairy products (soy butter, soy spread {margarine}, soy cheese {plain or flavored}, cream cheese, yogurt, mayonnaise), soy meats (meat alternatives), others (soy breads, cereals, pasta, chocolate, chips, health bars, desserts, tofu ice creams), soy grits, tips (tofu, soy dairy products). Compatible soy flavors. Preparation and cooking techniques: Draining and pressing tofu, cutting tofu, deep-frying tofu, how to reconstitute yuba, how to use deep-fried tofu pouches, how to use miso, miso tips. Soups. Appetizers and dips. Light meals and snacks. Main dishes. Seafood. Vegetables. Salads. Desserts. Soy drinks. Glossary. Guide to weights and measures.

Note: This is not a vegetarian cookbook. Some recipes call for chicken, fish (swordfish, tuna, salmon), shrimp, etc. Address: 1. Food writer, stylist, consultant, and cooking instructor [Australia]; 2. Nutritionist and nutrition correspondent for *Good Morning Australia*.

665. Robertson, Robin. 2003. *Vegan planet: 400 irresistible recipes with fantastic flavors from home and around the world*. Boston, Massachusetts: Harvard Common Press. xvi + 576 p. Illust. Index. 23 cm. [15 ref]

• **Summary:** An outstanding, hefty vegan cookbook by an author who knows her ingredients well and uses a rich and pleasing variety of them. She is also an expert on soyfoods, and the book contains many useful insights about them.

We find the graphic design of the book to be weak to poor; the typeface in the recipe titles is hard to read, the ingredients in the recipes printed in gold on white are hard to read, and the many pages of white ink on a gold or other such background are hard to read.

The word “tofu” appears on 91 pages in this book, “tamari” on 67 pages (she uses the phrase “tamari or other soy sauce”), “soy sauce” on 62 pages, “soy milk” on 56 pages, “dairy-free” on 55 pages, “seitan” on 47 pages,

“tempeh” on 46 pages, “silken tofu” on 33 pages, “firm tofu” on 29 pages, “miso” on 28 pages, “soft silken tofu” on 23 pages, “extra-firm tofu” on 13 pages, “teriyaki” on 6 pages, “soybeans” on 13 pages, “soy ice cream” and “meat alternatives” each on 10 pages, “TVP” on 8 pages, “baked tofu” on 7 pages, “textured vegetable protein” on 6 pages, “firm silken tofu” on 5 pages, “soy flour” on 4 pages, “soy nuts” and “soft tofu” and “dairy alternatives” each on 3 pages, “edamame” (“fresh soybeans in the pod”) on 2 pages, “soy yogurt” and “frozen tofu” each on 1 page (p. 72),

Yuba is mentioned on pages 182, 350-51 (definition and description), 389, 410-11, 414.

Page 29 states that soy flour is “Made from finely ground roasted soybeans” [i.e., kinako].

“Humans are the only animals that drink the milk of another species and the only animals that drink milk after childhood” (p. 9). Address: Virginia Beach, Virginia.

666. Yamamoto, Seiichiro; Sobue, T.; Kobayashi, M.; Sasaki, S.; Tsugane, S. 2003. Soy, isoflavones, and breast cancer risk in Japan. *J. of the National Cancer Institute* 95(12):906-13. June 18. [44 ref]

• **Summary:** Breast cancer risk was reduced by one half in Japanese women who ate three or more bowls of miso soup on an almost daily basis. The report monitored 21,852 women from 1990 to 2000. Post-menopausal women showed the greatest reduction of risk.

“In Japan, soy is consumed in various forms, including dried or green soybeans, tofu (soybean curd), natto (fermented soybeans), miso (fermented soybean paste), okara (tofu lees), soybean sprouts, soymilk, yuba (soy milk skin), kinako (soy flour), and soy sauce.” Address: Cancer Information and Epidemiology Div., National Cancer Center Research Institute, Tokyo, Japan.

667. Hosoi, Tomohiro; Kiuchi, Kan. 2003. Natto—A food made by fermenting cooked soybeans with *Bacillus subtilis* (natto). In: Edward R. Farnworth. 2003. *Handbook of Fermented Functional Foods*. Boca Raton, Florida: CRC Press. 390 p. See p. 227-50. [111 ref]

• **Summary:** Contents: Fermented soybean foods in Asia. Ingredients of natto: *Bacillus subtilis* (natto) spores, soybeans (color, size, protein content, sugar content, washing and storage methods). Natto processing: Washing and soaking of soybeans, steaming of soybeans, inoculation with *Bacillus subtilis* (natto) spores, packaging, fermentation, packing for shipment, changes in packages. Assessment of quality: Chemical composition, sensory tests (8 criteria), changes in consumers’ preferences (growing preference for larger soybeans and natto with markedly weaker odors and strings). Health benefits: *Bacillus subtilis* (natto) cells (effects on intestinal microflora and feed efficiency, effects on the immune system, anti-allergy effect of subtilisin, fibrinolytic activity of subtilisin, role of vitamin

K-2 (menaquinone-7) in the prevention of osteoporosis), phytoestrogens—effects on cancer and osteoporosis. Conclusions.

Natto and related foods are all made by fermentation with the bacterium *Bacillus subtilis* (*natto*). These include sweet dou chi (*xian doushi*) in China (where it is used as a seasoning for Beijing duck [Peking duck]), kinema in Nepal and Myanmar, *tua nao* in Thailand, and *chungkuk-jang* in Korea.

In the year 2000 a total of 10.1 million metric tons of soybeans in Japan were converted directly into foods; more than 80% of these soybeans were imported. Between 1991 and 2000 there was a 13% increase in soybean consumption for natto products.

Natto makers prefer to use certain soybean varieties such as Suzuhime and Suzumaru which are grown in Hokkaido, Kosuzu in Iwate, Miyagi, and Akita Prefectures, and Natto-Shoryo in Ibaraki Prefecture.

Natto makers generally desire the following qualities in soybeans: 1. Extra small or small size (for consumers from Tokyo northward). 2. Easily washable. 3. Yellow surfaces and hila. 4. A suitable degree of stickiness when made into natto. 5. Relatively sweet taste. 5. Minimal changes in constituents and appearance during storage.

In Japan, soybeans are classified by diameter into four groups: (1) Extra small is less than 5.5 mm diameter. (2) Small is 5.5 mm to 7.3 mm. (3) Medium is 7.3 mm to 7.9 mm. (4) Large is greater than 7.9 mm in diameter.

Japan's leading natto trade association is called the "Federation of Japan Natto Manufacturers Cooperative Society."

A soybean allergen has been identified as *Gly m d 28K*. This allergen is found in high concentrations in various nonfermented soybean products such as soy protein isolate, tofu, dried frozen tofu, and yuba. However fermented soybean products such as natto, soy sauce and miso do not contain this allergen. "*Bacillus subtilis* (*natto*) produces a serine protease [proteolytic enzyme] of subtilisin NAT during its growth. Subtilisin NAT appears to degrade *Gly m d 28K*."

"Circulating platelets and blood-derived proteins (fibrin) are essential for the formation of blood clots, which prevent bleeding long enough for healing to occur. However, excess coagulation prevents normal physiologic blood flow, which causes thrombotic disorders. Thrombolytic therapy is the most direct means of restoring blood flow. *Bacillus* spp. produce serine proteases called subtilisins, which are known to have fibrinolytic activity" [8 references cited]. Address: 1. PhD, Tokyo Metropolitan Food Research Centre; 2. PhD, Dep. of Food Science and Nutrition, Kyoritsu Women's Univ. Both: Tokyo, Japan.

668. Johnson, Becky. 2003. Tofu: making the most of this low-fat high-protein ingredient, with over 60 deliciously varied recipes from around the world. London: Southwater.

96 p. Illust. (color). Index. 30 cm.

• **Summary:** Buyer beware! This book is sold under two different titles but with exactly the same contents, copyright date, and number of pages. This one has a paperback binding, the other is hardcover.

The 2nd title is "The Tofu Cookbook: an essential cook's guide with over 50 enticing recipes" (published by Lorenz Books, an imprint of Anness Publishing Ltd.). Both books contain many large color photos on glossy paper. with color photos on every page.

Contents of both titles: Introduction. Types of tofu (firm tofu, silken tofu, marinated tofu, smoked tofu, frozen tofu, deep-fried tofu, other soya bean products—bean curd skins [yuba], bean curd sticks [dried yuba sticks], tempeh, textured vegetable protein, shoyu, tamari, miso, soya dairy substitutes {soya "milk," "cream," "yogurt" and "cheese"}). Preparation and cooking techniques (includes draining, marinating, and cutting tempeh). Soups and appetizers. Salads and side dishes. Vegetarian main meals. Meat, chicken and fish dishes. Desserts (incl. homemade Strawberry and vanilla tofu ice cream and Tofu berry cheesecake).

On page 43 is a recipe for Twice-cooked tempeh which contains no tofu. Address: Chef, England.

669. **Product Name:** Whole Soymilk, Tofu Blocks, Soy Custard, Braised Tofu, Tofu Puffs, Tofu Noodles, Soy Omelette (with Yuba), Yuba (Tofu Skin), Poached Yuba Loaf. **Manufacturer's Name:** Basic Soy Beanery (renamed Hodo Soy Beanery in Sept. 2005).

Manufacturer's Address: 1600 S. De Anza Blvd., San Jose, CA 95106. Phone: 408-517-8958.

Date of Introduction: 2004. May.

Ingredients: See below.

Wt/Vol., Packaging, Price: -

How Stored: Refrigerated.

New Product—Documentation: Labels by brought to Soyinfo Center by Min Tsai on 2009. Sept. 16. Ingredients:

Whole Soymilk: Soybeans, filtered water (cane sugar is added to our sweetened soymilk).

Tofu Blocks: Soybeans, filtered water, calcium sulfate.

Soy Custard: Soybeans filtered water, calcium sulfate.

Ginger syrup: Filtered water, rock sugar, fresh ginger.

Braised Tofu: Soybeans, filtered water, soy sauce, cinnamon, anise, calcium sulfate.

Tofu Puffs: Soybeans, filtered water, soybean oil, calcium sulfate.

Tofu Noodles: Soybeans, filtered water, calcium sulfate.

Soy Omelette: Soybeans [made into yuba], filtered water, soy sauce, sugar, soybean oil.

Yuba (Tofu Skin): Soybeans, filtered water.

Poached Yuba Loaf: Soybeans [made into yuba], filtered water, soy sauce, white pepper, anise.

670. Liu, KeShun. 2004. Edible soybean products in the

current market. In: KeShun Liu, ed. 2004. Soybeans as Functional Foods and Ingredients. Champaign, Illinois: AOCS Press. xii + 331 p. See p. 23-51. [76 ref]

• **Summary:** Contents: Introduction. Soybean oil. Traditional soyfoods: Nonfermented soyfoods (soymilk, tofu, variety and current market, nutritional value and health benefits, general processing, soymilk film {yuba}, okara, soybean sprouts, vegetable soybeans, roasted {soynuts} or cooked whole soybeans), fermented soyfoods (fermented soy paste {jiang and miso}, soy sauce, Japanese natto, tempeh, sufu or Chinese cheese, fermented black soybeans {douchi or Hamanatto}). Soy protein products: Soy flour, soy protein concentrated, soy protein isolate, textured soy proteins. Modern soyfoods. Soy-enriched products. Functional soy ingredients / dietary supplements: Soy lecithin, oligosaccharides, isoflavones, tocopherols, phytosterols, trypsin inhibitors.

Figures: (1) Photo of traditional soyfoods. (2) Photo of soy flour and defatted meal after crushing. (3) Bar chart of U.S. soyfood sales since 1992. (4) General flow chart of processing soybeans into various edible products. (5) Flow chart of a traditional Chinese method for making soymilk and tofu. (6) Bar chart of U.S. tofu sales since 1980.

(7) Photo of natto, a fermented Japanese soyfood. (8) Flow chart of natto production outline. (9) Photo of soy protein products. (10) Photo of meat analog made by high-moisture extrusion of soybean protein. (11) Photo of new generation of soyfoods in the market. (12) Photo of soy-enriched bakery products. (13) Photo of concentrated soy isoflavone product.

Tables: (1) Classification of various edible soy products in the current market. Address: Univ. of Missouri, Columbia, Missouri.

671. Bruni, Frank. 2004. Restaurants: A paean to tofu in a Japanese pub. *New York Times*. Nov. 24. p. F8.

• **Summary:** This is a review of En Japanese Brasserie, a restaurant in Greenwich Village, New York City, which features artisanal tofu—as well as “its dynamic cousin yuba, which is the skimmed skin of heated soy milk, omelet-esque in texture. Yuba arguably has more character than plain tofu...” It also serves house-made miso pastes. Address: Japan.

672. **Product Name:** Spicy Braised Tofu, Kung Pao Tofu Salad, Spicy Yuba Strips.

Manufacturer's Name: Basic Soy Beanery (renamed Hodo Soy Beanery in Sept. 2005).

Manufacturer's Address: 1600 S. De Anza Blvd., San Jose, CA 95106. Phone: 408-517-8958.

Date of Introduction: 2004. December.

Ingredients: See below.

Wt/Vol., Packaging, Price: -

How Stored: Refrigerated.

New Product–Documentation: Labels by brought to Soyinfo Center by Min Tsai on 2009. Sept. 16. Ingredients:

Spicy Braised Tofu: Soybeans, water, calcium sulfate, star anise, teriyaki sauce, vinegar, chili oil.

Kung Pao Tofu Salad: Soybeans, water, calcium sulfate, soy sauce, tea infusion (loaf is smoked over tea leaves), teriyaki sauce, chili oil, vinegar, peanut, cilantro.

Spicy Yuba Strips: Soybeans water, soy sauce, sugar, soybean oil, teriyaki sauce, vinegar, chili oil.

673. Grimaldi, Polly. 2004. Quick and easy soy and tofu recipes. Hayward, California: Bristol Publishing Enterprises. (A Nitty Gritty book). iv + 155 p. Illust. Index. 14 x 21 cm.

• **Summary:** Contents: 1. An introduction to tofu and soy. 2. Breakfast. 3. Entrees. 4. Side dishes. 5. Salads. 6. Soups. 7. Sauces, spreads, dips and snacks. 8. Breads. 9. Drinks. 10. Desserts. Address: Hayward, California.

674. Takagi, Junko. 2004. The best of tofu. Translated from the Japanese by Kazuko Nagai and Karen Sandness. Tokyo: Japan Publications Trading. Distributed by Kodansha America through Oxford University Press. 112 p. Illust. (color). Index. 26 cm.

• **Summary:** Contents: Cooking regular tofu (Simmered tofu. Chilled tofu. Mapo tofu). Hiya-yakko and salad-yakko. Homemade tofu. Okara recipes. Tofu as a main dish. Varieties of tofu (momen tofu, soft tofu, jutten tofu, yose tofu, oboro tofu, zaru tofu, silken tofu). A brief history of tofu. The nutritional value of tofu. Homemade aburage and atsugae. Simple accompaniments to drinks. Preserved. Draining tofu. Preserving tofu. Cutting techniques. Homemade frozen tofu. Soup and one-pot dishes. Homemade yuba. Desserts (incl. soymilk pudding).

The section titled “Preserved tofu” includes: Tofu preserved in soy sauce with garlic (p. 82). Tofu preserved in miso (p. 82). Tofu preserved in herb oil (p. 83). Tofu preserved in kochujang (p. 82).

A small portrait photo shows Junko Takagi. Address: Japan.

675. *Los Angeles Magazine*. 2005. Small bites. Jan. p. 128.

• **Summary:** “Umenohana, a Japanese import, has opened on Canon Drive in Beverly Hills and is serving tofu and yuba (soy milk skin) *kaiseki* style.”

676. Wolf, Miriam. 2005. Meatless: Soy basically. *San Francisco Bay Guardian*. May 4-10. Vol. 39, No. 31.

• **Summary:** “At the Ferry Plaza and Berkeley Farmers Markets, you’ll find Basic Soy, a local company that has been bringing its products to market for about a year. It sells some of the freshest soy milk around, along with toothsome savory tofu and creamy soy custard. All of its foods are made with organic, non-GMO soybeans.

“The soy custard is delicate enough to dissolve on the

tongue. It comes in a small container of sweet ginger syrup to drizzle over the top, making for a light-tasting dessert or snack. In the next few weeks Basic Soy will add a densely delicious chocolate soy custard to the lineup. The spicy tofu is firm and meaty, accented with just the right amount of hot oil and sesame seeds. Braised tofu is good enough to eat on its own or in a sandwich but would be the perfect ingredient to slice up and throw into a stir-fry.

“At \$5 to \$6 a container (at Ferry Plaza) these products aren’t cheap. But the freshness and quality trump the prices—people seem to be eating the stuff up. There’s always a buzz around Basic Soy’s booth.” Basic Soy’s “soy layer omelette” features yuba.

“Basic Soy is a young company—all of the people behind it are in their early 30s. It has a hip design sensibility and a mission to bring soy foods to a wider audience.” There follows an interview with Minh Tsai, head of Basic Soy. He said that their products are presently sold only at farmers markets. Fresh tofu and soy milk taste better. Go to www.basicsoy.com for more information.

Minh Tsai: “In the United States, soy has been somewhat stigmatized as the ‘white block’ of tofu that nobody knows what to do with and only a very small segment of the people consume. Basic Soy was formed with the mission of making soy accessible to the public. We wanted to showcase a line of delicious fresh and ready-to-eat soy products that change people’s mind about soy.” “Most of our recipes are traditional Chinese recipes. The soy custard with ginger syrup, for example...” “Based on our research, the trend of interest in soy is growing.” “I believe our customer base is quite mixed [not mostly vegetarians]; we have plenty of carnivores who normally wouldn’t touch soy but love our products... We are not vegetarians. But we do eat soy quite a bit.”

“Basic Soy is at the San Francisco Ferry Plaza Farmers Market, Embarcadero and Market, Sat., 8 a.m.–2 p.m.; and the Berkeley Farmers Markets: Derby at MLK Jr. Way, Tues., 2-7 p.m.; Shattuck at Rose, Thurs., 3-7 p.m.; and Center at MLK Jr. Way, Sat. 10 a.m.–3 p.m. (beginning mid-May).”

677. Berdy, Lauren. 2005. The Vinton 81 soybean variety gives the best yields of yuba (Interview). *SoyaScan Notes*. June 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Vinton is a “vegetable-type” soybean, widely used to make tofu. Lauren is working with researchers at Ohio State Univ. to bring value-added soy products to the state. She is a French-trained chef, is very interested in yuba, and hopes to help start a yuba factory in Ohio. Address: 615 South 6 St., Columbus, Ohio 43206. Phone: 614-224-7827.

678. Shurtleff, William; Aoyagi, Akiko. 2005. *Doufu zhi shu* [The book of tofu]. Taipei, Taiwan: Persimmon Cultural

Enterprise Co., Ltd. viii + 270 p. Sept. 1. Illust. by Akiko Aoyagi. No index. 26 cm. [Chi]

• **Summary:** A very attractive, complex character, Chinese-language edition of *The Book of Tofu* (2nd ed. Ten Speed Press). Address: 1. Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

679. Chen, Zishan. 2005. *Food and Chinese culture: essays on popular cuisine*. San Francisco, California: Long River Press. 237 p. See p. 46-47. 24 cm.

• **Summary:** Page 44: “... dried bean curd sheets, fried dry tofu,...”

The recipe for “Braised vegetable chicken” (p. 46-47) states: “Among the people of Huizhou, it is said that this is one of the courses that is a must to prepare and serve during the New Year Holidays. It provides an alternative light and refreshing vegetarian taste after days of fish and oily foods. As suggested by its name, *Shao Suji* or Braised Vegetable Chicken, it is made of vegetable materials [ingredients], but having the delicious flavor of chicken. It is prepared with layers of soybean curd skin [yuba] and dried bean milk cream rolls [dried yuba sticks] flavored with dried winter mushrooms.

Note. This is the earliest English-language document seen (Oct. 2012) that uses the term “soybean curd skin” to refer to yuba.

680. Fu, Peimei. 2005. *Peimei shi pu*. Di er ce [Pei Mei’s Chinese cook book. Vol. II]. Taipei, Taiwan: Ju zi wen hua shi ye you xian gong si. 386 p. Illust. (color). No index. 22 cm. [Chi; Eng]

• **Summary:** Fu Pei Mei is considered by many Chinese to be one of the best Chinese chefs alive today. This book, which first appeared in July 1974, contains 110 recipes categorized by ingredients under 11 separate headings, such as chicken, duck, pork, beef, fish, shrimp and seafood. The majority of the recipes in this book are based on meat, poultry, fish or eggs (animal products). Contents: Foreword. Introduction. About the Chinese menu. About Chinese condiments and spices: Glossary includes: 1. Soysauce (made from fermented soybeans, comes in light, medium, and dark colors. Kikkoman is a good example of medium). 9. Hot bean paste (“Made from red hot peppers, flour, soybeans, salt, and other condiments”). 11. MSG. 18. Bean curd. 19. Dried bean curd sheets (skin). 20. Bean sprouts (mung or soy). 21. Bean pastes (“Thick brown pastes prepared from soy bean flour and flavorings. Sweet types have sugar added and resemble pureed dates”). 22. Sweet red bean paste (“Made from red [azuki] beans. Almost all Chinese desserts use this for the filling. Mash the cooked beans in a strainer. The paste will come out leaving the skin”). Contents of recipes. Abbreviations, weights & measures. Contents of color photos. Index of recipes Vol. I. English-Chinese list of foodstuffs. About the author. Copyright.

Seating: The guest of honor sits in the seat at the inner side of the room, facing the entrance, while the seats on the serving side are for the host and hostess. The guest of honor always sits facing the host (p. 10).

After the “abbreviations” page are 4 full-page numbered color photos of Chinese tableware, vegetables, special ingredients, and Chinese individual place setting used in this book, and the numbered name of each item, in both Chinese and English, facing the photo. Among the vegetables is: 27. Fresh soybean (*maodou*). Among the special ingredients is: 2. Beancurd sheet (*doufu-pi*). 14. Bean curd threads (*gansi*). 21. Bean curd (*doufu*). 26. Fermented black [soy] beans [fermented black soybeans].

For every recipe there is a large (often full-page) color photo with the recipe name in Chinese and English, and the page number of the recipe. All the recipe photos come in a block before the recipes themselves. Each Chinese recipe is on the left page of the 2-page spread, and its English counterpart is on the right page. The ingredients for each recipe are in two rows at the top, in exactly the same relative place, to make finding the Chinese characters easy.

Recipes include: Braised soysauce duck (p. 157). Spareribs with fermented black beans (*Shih chih p'ai ku*, p. 177). Shredded pork with bean sauce (*Ching Chiang Jou szu*, with 2 tablespoons “sweet bean paste,” *t'ien mien Chiang* [pinyin: *tian mian jiang*], and soysauce, p. 186-87). Diced fish with fermented black beans (*Shih chih yü ch'iu*, p. 216-17). Steamed fish with fermented black beans and hot pepper (*Tou shih la chiaow cheng yü*, with 2 tablespoons *dou shih* / fermented dried black beans,” p. 226-27).

The chapter titled “Egg and bean curd” (p. 256-75) contains 10 recipes. Examples of the descriptions of bean curd in the ingredients listing are: “6 squares bean curd (3” x 3”).” “8 pcs. [pieces] bean curd (1” x 2” x 1”).” “4 pcs. tender bean curd (3” x 3”).” “10 oz. thin dried bean curd strips” (*gansi*). On p. 276 is a half-page description of bean curd and related products.

More recipes: Assorted vegetarian dish (*Lo han chai*, with “1 bean curd stick,” *fu chu / fuzhu* [dried yuba sticks], p. 289). Spinach and bean curd soup (*Po ts'ai tou fu keng*, p. 317). Chicken, ham and shrimp with bean curd shreds soup (*San hsien kan szu t'ang*, p. 319). Yu-T'iau ([crullers] p. 335). Noodles with minced pork and bean sauce (*Pei fan cha Chiang mien*, with *maodou* / green beans, p. 339). Fried taro dumplings with sweet bean filling (*Tou sha yü tsao*, with “sweet [azuki] bean paste,” p. 349).

A good portrait photo of Miss Fu appears on p. 371. Taiwan's popular T.V. chef, she “is also a producer and director. She has demonstrated over 600 different recipes from 1964 to the present. In 1955 Pei Mei's Chinese Cooking Institute was founded, In 1962 Taiwan's first television station was established. She accepted an offer to teach a demonstration cooking program once a week, starting in 1967. In 1969 she wrote her first volume, *Pei*

Mei's Chinese Cookbook. The dishes were divided according to the geographical areas of China—North, East, South, and West. In 1977 Miss Fu began a weekly program on Japanese television.

The copyright page states that this book was published in the 80th year, 9th month of the Chinese calendar. Address: Cooking teacher, Taipei, Taiwan.

681. Fu, Peimei. 2005. Peimei shi pu. Di san ce [Pei Mei's Chinese cook book. Vol. III]. Taipei, Taiwan: Ju zi wen hua shi ye you xian gong si. 388 p. Illust. (color). 22 cm. [Chi; Eng]

• **Summary:** Chinese cooking can be divided clearly into five major schools or branches: Shanghainese, Cantonese, Szechuanese, Peking-style, and Hunanese. These correspond roughly to Eastern, Southern, Western, Northern, and Central China. This 3rd volume, containing 130 recipes, consists of nine complete formal Chinese banquet dinners from different provinces: Kiangche (Shanghai style), Canton, Szuchuan [Szechwan], Peiping, Hunan, Fuk-ien, Taiwan, Vegetarian style, and Buffet dinner.

The number of special ingredients in the numbered color photo has been increased to 47 from 32. Interesting new ingredients include: 29. Sweet red bean paste [azuki]. 31. Green sea weed. 32. Laver [sheets of nori]. 34. Fresh bean curd skin. 35. Dried bean stick [dried yuba sticks, fuzhu]. 36. Bean curd sheets [dried yuba]. 37. Bean curd, dried [doufugan]. 39. Wheat gluten. 40. Steamed wheat gluten. 41. Fried gluten puff.

The basic format of this book is quite similar to that of Vol. II, but the color photos of recipes are arranged together in a group of about 12 pages at the beginning of each of the nine sections, and quite a few pages have two recipes per page.

Recipes include: Sauteed black mushrooms with soy sauce (p. 35). Stir-fried crab with bean sauce (*Chiang pao ch'ing shieh*, with 1 tablespoon “sweet soy bean paste” / *t'ien mien Chiang* / *tian mian jiang*, p. 46-47). Stewed beef with hot bean sauce (*Yu hsiang nyu nan*, with 1 tablespoon “hot bean paste,” (*la dou ban jiang*), p. 122-23).

The introduction to the section on vegetarian dishes notes: “Centuries ago in China, devout Buddhists and Taoists followed a strictly vegetarian diet, in keeping with their religious sanctions against the killing of sentient beings.” The recipes in this section call for: Soy sauce (almost all). Soy bean soup stock (p. 313). Wheat gluten sticks (*su chang*) (each of which is made by rolling up a big sheet of wheat gluten, p. 315). Pieces of steamed wheat gluten and Pressed bean curd (*dou fu gan*) (p. 317). Cooked green vegetable soybeans (*shu mao dou*, p. 323). Sheets of bean curd skin, fresh or dried [yuba] (*toufu p'i / dou fu pi*, p. 323, 325, 331). Shredded dried bean curd (p. 327). Bean curd (p. 328).

More recipes: Braised beef with brown sauce (with 1 tablespoon “hot bean paste” (*la dou ban jiang*) and ½

tablespoon “soybean paste” (*tian mian jiang*), p. 360-61). Sautéed bean curd balls (p. 369). Two good portrait photos of Fu Pei Mei appear on page 296. Address: Cooking teacher, Taipei, Taiwan.

682. Fujii, Mari. 2005. *The enlightened kitchen: fresh vegetable dishes from the temples of Japan*. Translated by Richard Jeffrey. Tokyo, New York, London: Kodansha International. 107 p. Illust. (photos by Tae Hamamura). Index. 26 cm.

• **Summary:** This is a lovely Japanese vegan (and vegetarian) cookbook filled with the spirit of kindness and of Zen—and with color photos on almost every page. It discusses and describes the ancient tradition of *shojin ryori*, the plant-based diet which originated in Japan’s Buddhist temples. The author, who is the wife of a Buddhist monk, has taught temple cuisine for over 20 years. Her husband, Sotetsu, lived as a monk for ten years in various Buddhist temples; he also trained as the *tenzo* (head cook).

In this book she presents 60 beautiful, delicious, health-giving, and heart-warming recipes, many adapted to Western kitchens but all true to their roots. A majority of the recipes contain soyfoods in one form or another.

The helpful glossary includes descriptions of edamame beans, hijiki, karashi mustard, konbu, Koyadofu (“freeze-dried tofu”), miso, natto, nori seaweed, pickled plum paste, saké, sesame paste, sesame seeds, shiso (perilla), soy sauce, soybeans, sukikonbu, tofu, umeboshi pickled plum, usu-age tofu, wakame seaweed, wasabi, yuba, yuzu.

The index contains 20 entries for miso, 15 for tofu (p. 15, 24, 29, 32, 39, 41, 42, 48, 51, 53, 56, 62, 71, 100, 104), 6 for soymilk (p. 17, 45, 47, 94, 99, 104) 4 for edamame (p. 16, 35, 68, 99), 3 for deep-fried tofu (p. 32, 42, 71, 104), 3 for natto (p. 44, 50, 100), 2 for teriyaki (p. 48, 62), 2 for Koyadofu (p. 48, 100), 2 for usa-age (thin slices of deep-fried tofu; p. 32, 104). 2 for yuba (p. 47, 104). A small color photo on the inside rear dust jacket shows Mari Fujii. Address: Cooking teacher, Kamakura, Japan.

683. Hu, Shiu-ying. 2005. *Food plants of China*. Hong Kong: Chinese University Press. xvi + 844 p. Illust. Index. 26 cm. [350+ ref]

• **Summary:** This is a truly remarkable book—the most original and comprehensive book seen to date on the food plants, plant foods, and the economic botany of China. It is the author’s supremely valuable life’s work.

Contents: Foreword by Richard Evans Schultes (Director, Botanical Museum of Harvard University, Emeritus). Foreword by George W. Staples, III (Bernice P. Bishop Museum, Honolulu, Hawaii). Introduction: Why the book and to whom is it addressed. Illustrations (numbered but on unnumbered pages).

Part I: Cultural aspects of Chinese foods. 1. The sources and nature of information. 2. The production and preparation

of Chinese plant food. 3. Selected Chinese food plants with instruction for preparation. 4. Spices and flavoring materials. 5. Health food (*bupin*) and herbal tea (*liangcha*).

Part II: Botanical aspects of Chinese food plants. 6. Nonvascular plants. 7. Vascular plants (incl. spermatophytes {seed-bearing plants} and angiospermae {flowering plants}, incl. monocotyledons and dicotyledons). Bibliography. Latin name index. Chinese name index. English name index.

On the inside front cover and facing right-hand page is a large map of China, with each province shown, and the localities of Shiu-Ying Hu’s botanical activities in China clearly show in symbols: white triangle = before and white circle = after 1950. A black triangle or circle = staying 8 or more years. In each triangle or circle is a number, keyed to a list of the names of 65 localities. She did more research in southern China than in northern.

There is no country in the world today “where the value of useful plants is more thoroughly appreciated than in contemporary China” (p. vii, Foreword 1).

Dr. Hu is an expert taxonomist and economic botanist. She “draws on the fields of plant taxonomy, morphology, economic botany, pharmacognosy, and phytochemistry to name a few, yet the text is far from a dry recitation of facts and statistics. What brings the work to life are the numerous anecdotes and personal experiences she shares. Indeed, this latter element gives the book the aspect of a personal memoir.” “The major divisions... are taxonomic and within each division the plants are arranged alphabetically by scientific name. Also provided are the names in Chinese characters, the transliteration in English of both the Putonghua and Cantonese pronunciations for the Chinese names, common names in English, and a brief commentary” (p. ix-x, Foreword 2).

“The food plants of an area provide the material basis for the survival of its population” and furnish inspiration for its cultural development. “In China, 1,156 species and 274 varieties and/or cultivars of food plants have been recorded and are used” by the people. The preparation of this work began in 1957 and a compilation was distributed at the Ninth Pacific Science Congress. Born in 1908, the author entered a boarding school in Xuzhou, Mary Stevens Girls’ High School, run by Presbyterian missionaries. In like manner she went to Ginling College, a small liberal college of arts and sciences in Nanjing. After college she entered Lingnan University (formerly Canton Christian College) in Guangzhou, from which she graduated with the master of science degree in June 1937—a month before the Marco Polo Bridge Incident on July 7, 1937, when the Sino-Japanese War broke out in Beijing. She fled to Chengdu, Sichuan, where in Jan. 1938 she accepted a teaching position in the Department of Biology, West China Union University—also a missionary college. In the late 1930s and early 1940s, Hu had botanized in western Sichuan at a time when only a few men (notably Armand David, Joseph Rock, and E. Wilson)

had explored that region. During summer vacations, she took students to botanize around Muping. At West China Union University, Hu continued her field studies, taught courses in botany, and was elected president of the International Women's Club. The vice president of the club, who was a Radcliffe graduate, applied to Radcliffe for a fellowship for Hu.

She left China on 2 Aug. 1946 for graduate work at Radcliffe College; it was like a metamorphosis—the United States was a completely new world. In 1946 she was offered a graduate fellowship for a doctorate (PhD) program at Radcliffe College under Prof. E.D. Merrill, then Director of the Arnold Arboretum (Harvard Univ.) from 1935-1946. Her doctoral dissertation on the genus *Ilex* (Aquifoliaceae) was carried out at the Arnold Arboretum under the direction of E.D. Merrill. After completing the requirements and finishing the dissertation for a doctorate degree at Harvard, in April 1949, she became the herbarium assistant at the Arnold Arboretum. From 1953 to 1957 she worked on the Flora of China Project at Arnold Arboretum. Among other things, she became famous for her Chinese dinners with staff and students alike. She officially retired from the Arnold Arboretum on 30 June 1976.

Dr. Hu returned to China in July 1975, after 29 years abroad. Since the normalization of diplomatic relations between the USA and China in 1978, she has made many trips to China, and travelled studied extensively (p. xi-xii, 12-14). As of Aug. 2011 Dr. Hu resides in Hong Kong and is closely associated with the Chinese University of Hong Kong.

A photo (Fig. 1) shows the author in 1941 as a young lady in Tibetan attire; she spent summers in the area formerly called “Eastern Tibet.”

Fig. 34, an illustration composed of seven superb line drawings (each with a scale) showing the soybean plant, a flowering branch, the front view of a flower, a lateral (side) view of the same, a fruit (pod with 2 seeds) with one side of the pericarp (outer pod) removed—showing the seeds, a soybean seed showing the acentric hilum, the micropyle and the hypocotyl ridge, soybean sprouts from a market showing the smooth fleshy cotyledons, the hypocotyl and the very small plumule.

Fig. 35. Four black and white photos showing: (1) Two round trays of koji, made of cooked soybeans, roasted wheat flour, and fungal spores, in shelves, to be used for making soy sauce. (2) Large earthen jars with convenient hat-like covers, containing the koji, salt and water, placed in the yard of the *jiang-yuan* (2 Cc = Chinese characters given) (“jiang garden”), exposed to the sun during the day and dew at night, covered only when it rains and stirred occasionally. (3) A man stirring hot soymilk in a large shallow cauldron before adding pulverized calcium sulfate for precipitation of the soybean protein, used to make tofu. (4) A wooden frame [curdling box], lined with cloth for filtering the coagulated

protein and solidifying the mass (under small pressure) to make bean curd.

Soybeans (*Huang-dou*, 2 Cc). Before World War II, the United States was a net importer of soybeans; now she is a net exporter. “Although soybean products have entered American supermarkets, several Chinese uses of soybean can introduce more variety and tastier food into many homes (Figure 35). Included... are: green immature soybean, soybean curd, soybean sheets [pressed tofu sheets], firm bean curd squares [pressed tofu], soybean skin [yuba], and soybean sprouts.” With the exception of soybean sheets, all these items are available in Chinese American grocery stores. “The Food Plants Research Institute, Amherst, Massachusetts, is in the process of introducing soybean sheets (3 Cc) to American markets (p. 118-19).

Hordeum vulgare L. var. *vulgare*—Barley *Da-mai* (W.-G. *Ta-mai*) (2 Cc, ‘big grain’). “... also ground with sorghum and soybean for a coarse, healthy, fiber bread flour.”

Glycine max (L.) Merrill—Soybean. *Da-dou* (W.-G.: *Ta-tou*). (2 Cc) (‘giant bean’). *Huang-dou* (W.-G.: *Huang-tou*). (2 Cc) (‘yellow bean’). “Seed mixed with *gao-liang* (kaoliang) and barley, ground together for flour, used to be the staple of the rural population in the Yellow River Region; soaked, cooked with salt, served as tidbits in northern China; used as source for all the following forms of Chinese food” (p. 474).

Dou-you (W.-G.: *Tou-yu*). (2 Cc) (‘soybean oil’). Cooking oil extracted from the soybean. (p. 474). Address: Botanist, Arnold Arboretum, Harvard Univ.; Honorary Prof. of Chinese Medicine, The Chinese Univ. of Hong Kong.

684. Hu, Shiu-ying. 2005. Nonfermented foods: Bean curd skin [yuba] and bean curd bamboo [dried yuba sticks / rolls] (Document part). In: Shiu-ying Hu. 2005. Food Plants of China. Hong Kong: Chinese University Press. xvi + 844 p. • **Summary:** This is a truly remarkable, original and comprehensive book. A recipe for Imitation dried clam (*Su-yao-zhu*) calls for “4 oz. bean curd bamboo [dried yuba sticks] (*fu-zhu*) (2 Chinese characters; revitalized by soaking in 2 cups of warm water overnight, cut into 2.5 cm sections and seasoned with 4 tablespoons of home-made stock, soy sauce, sherry, and star anise in a warm pan until liquid is completely absorbed)” (p. 76-77).

A recipe for “Ginkgo duck soup” calls for “4 oz. bean curd bamboo (*fu-zhu*) (2 Cc = Chinese characters given) soaked in cold water overnight” (p. 104).

A recipe for “New Year family soup” calls for “½ lb bean curd bamboo [dried yuba sticks] (*fu-zhu*) (2 Cc; revived [reconstituted] in cold water overnight)” (p. 137). Address: Botanist, Arnold Arboretum, Harvard Univ.; Honorary Prof. of Chinese Medicine, The Chinese Univ. of Hong Kong.

685. Moriyama, Naomi; Doyle, William. 2005. Japanese women don't get old or fat: Secrets of my mother's Tokyo

kitchen. New York, NY: Delacorte Press. 274 p. Illust. Index. 22 cm. [50+ ref]

• **Summary:** From the publisher's description: "Japanese-born Moriyama reveals the key to the enduring health and beauty of Japanese women. The Japanese eat one of the most delicious, nutritious, and naturally satisfying cuisines in the world without denial, without guilt, and, yes, without getting fat or looking old. If you think you've eaten Japanese food, you haven't tasted anything yet. Japanese home-style cooking isn't just about sushi and raw fish but good, old-fashioned everyday-Japanese-mom's cooking that's stood the test of time—and waistlines—for decades. Reflected in this are the age-old traditional values of family and the abiding Japanese love of simplicity, nature, and good health. It's the food that millions of Japanese women eat every day to stay healthy, slim, and youthful. Even better, it's fast and easy. If you're tired of counting calories, counting carbs, and counting on diets that don't work and don't satisfy, it's time to discover this."

Traditional Japanese soyfoods are mentioned throughout this book, always in a very positive way and in recipes. Japanese generally eat soyfoods in their more natural and less processed forms such as tofu, miso, natto, and edamame—and rarely in the forms of soy supplements, soy shakes, soy burgers, soy energy bars, etc. that are so popular in the West.

Chapter 5, "The seven pillars of Japanese home cooking," states (p. 122) that they are: "fish, vegetables, rice, soy, noodles, tea and fruit." Soy, "The fourth pillar," is discussed very nicely on pages 181+.

Here is the number of pages on which various foods are mentioned: Tofu 56 (incl. silken tofu {kinugoshi}, cotton tofu {momen, regular}, atsu-age {deep-fried tofu cutlets}, usu-age {deep-fried tofu pouches}, yakidofu or broiled tofu). Miso 50 (incl. p. 91-92. 99-100). Soy sauce 50. Edamame 12. Shoyu 3 (p. 75, 114, 121). Natto 2 (p. 184, 188). Okara 1 (p. 184). Yuba 1 (p. 184). Also many reference to sea vegetables (hijiki, kombu, nori). A photo on the inside rear dust jacket shows the authors; she was born in Tokyo, and he is an American who has written or cowritten five books.

Note: The paperback edition of this book (only) mentions "The Japanese Skincare Revolution: How to Have the Most Beautiful Skin" in connection with tofu. Address: Wife and husband live in New York City.

686. Patterson, Daniel. 2006. The way we eat: I can't believe its tofu. *New York Times Magazine*. Aug. 6. Sunday.

• **Summary:** The writer never thought he could love a soy product. He could probably muster admiration, certainly respect, but never infatuation. So he was quite surprised when dining at Kappo Sakamoto in Kyoto, Japan, that he swooned over a dish of yuba. It was served in a handmade box, simmering in water over a piece of glowing charcoal. He lifted the opaque sheets from the bubbling water, dipped

them into a sauce (made from soy sauce, dashi, mirin, and fresh wasabi) and wow! A mildly sweet flavor and tender texture he had never experienced before. Here was tofu's "sexy and elegant cousin." He returned to the USA in search of yuba.

By good fortune, Ryuta Sakamoto, the son of Kappo Sakamoto's chef, was a partner in a San Francisco restaurant name "Medicine," that served (among other things) yuba! He explained that "yuba is one of the purest expressions of Kyoto cuisine. It is exquisitely simple, so its magic lies in the quality of the ingredients and the skill with which they are handled." Just as a film forms atop milk when it is heated, so yuba forms atop soymilk. Each batch of soymilk will yield about 7-8 layers of yuba. The first 4-5 are the best quality; the last 2-3 sheets are generally dried. "Yuba is best just after it is made" and will keep for only about 5 days.

Can you make yuba at home? Yes, but not with commercial soymilk. The protein content is too low.

Then Sakamoto directed the writer to Minh Tsai, the owner of Hodo Soy Beanery, a Bay Area company that makes soyfoods using only organic ingredients that are not genetically engineered. Tsai sells his yuba and other soy products at farmer's markets around the Bay Area and will also ship yuba in the U.S. The writer bought some and rushed back to his restaurant to try it. Modest success. But when he deep fried the yuba it was pure bliss.

687. Kimura, Takuji "Tak." 2006. Japanese yuba company seeking to enter the U.S. market (Interview). *SoyaScan Notes*. Sept. 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This company started in 1975 as Kyoiku Gakusha selling educational materials. In 1976 they started making yuba in Japan. The Japanese name of the company is confidential, but the yuba factory is located on the island of Shikoku, at 2-5-10 Matsushita, Inazawa, Aichi-ken, Japan 492. They own the Princess Court Hotel right next to the Nagoya airport. The name the yuba company likes to use in introducing itself to the West as Yuba no Cafe, which has offices in Nagoya and Kyoto, and five departments or divisions: Yuba, Japanese Food, Chinese Food, Western Food, and Desserts.

The yuba made by the company is now sold mostly in Japan; they also import yuba from a different company in China and sell it in Chinatown, Yokohama (just south of Tokyo). They sell their own yuba at Disneyland in Japan, mainly as ready to eat products—of which they make about 5,000! Each business customer can place a customized order for the products he wants.

Many of the company's yuba products are attractively displayed in printed or photocopied color Japanese-language brochures. The most attractive and interesting brochure (printed), titled *Nama Yuba* ("fresh yuba") contains 6 glossy pages of photos and information about the company's yuba



products and about the company itself, with many addresses and phone numbers. Three brochures of restaurant items show and describe about 270 items; 2-3 more brochures show yuba bakery items—which are baked at the Princess Court Hotel.

The founders and creative powerhouses behind this company are Mr. and Mrs. Tomoyo Morita, both in their early 50s. Mrs. Morita is involved mostly with the business and sales side of the firm. They have three children: The eldest, a son, graduated from Cornell University (Ithaca, New York), and now runs his own separate company in Japan. The middle, a physician, is now doing post-graduate research at Harvard Medical School. The youngest child, a daughter, is studying law at the University of California, Berkeley. Tak met Mrs. Morita recently at the San Francisco Airport. He plans to meet Mr. Morita on Sept. 20 in Tokyo when he visits the organic food show there.

Talk with Tak Kimura (Concord, California). 2006. Sept. 28. Yuba de Cafe and the Princess Court Hotel were both established in 1994. In Oct. 2006 this company plans to start making many varieties of yuba in China, then in November they plan to start importing this as freeze-dried yuba into the USA. Tak hopes to represent the company as a food broker to institutions and the non-Asian retail market in the USA—but he does not yet have any written agreements with them.

Talk with Tak Kimura. 2007. June 9. Nothing seems to be happening with the Japanese yuba company in the USA. Address: 3616 Delancey Lane, Concord, California 94519-2357. Phone: (925) 687-2422.

688. Cheng, Anqi. 2006. *Chao ren qi zhong shi qing shi* [Eating light]. Taipei, Taiwan: Qi lin wen hua chu ban she you xian gong si. 105 p. See p. 10. Illust. (color). 20 cm. [Eng; Chi]

• **Summary:** Page 10: “When rice becomes mushy, turn off the heat and let it stand with the lid on for 30 minutes before serving. For a lighter taste, try replacing dried scallop with dried skin of bean milk (Fu Zhu).”

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term “skin of bean milk” or the term “dried skin of bean milk” to refer to what are probably dried yuba sticks.

689. Davidson, Alan; Jaime, Tom. 2006. *The Oxford companion to food*. New York, NY and Oxford, England: Oxford University Press. xxviii + 907 p. Illust. by Soun Vannithone. Index. 29 cm. [1500+* ref]

• **Summary:** The first edition of this remarkable book (1999) is already a “classic.” “Alan Davidson famously wrote eighty percent of the first edition, which was praised for its wit as well as its wisdom. Tom Jaime, editor of the second edition, worked closely with Jane Davidson and Helen Saberi to ensure that new contributions continue in the same style... The text has been updated where necessary” and there are

many new entries. The front matter, which is 10 pages longer, begins with “Alan Davidson: A tribute” (p. vii; he died in 2003) followed by a “Preface to the Second edition” by Tom Jaime. Entries in the 1st edition are generally on a different page in this edition. Tofu, for example, formerly on pages 798-99, is now on pages 801-02; however the information is the same. The marvelous illustrations in both editions are by the same artist. The last page of this edition is page 907 compared with page 902 in the 1st edition. Address: World’s End, Chelsea, London, England.

690. Moey, S.C. 2006. *Chinese feasts & festivals: A cookbook*. Singapore: Periplus Editions. 144 p. See p. 28. Illust. by the author (Color). 31 cm.

• **Summary:** A colorful book with marvelous, creative illustrations. The recipe for “Pork and taro bowl” (p. 28) has a headnote which begins: “This is a festive Hakka dish, obligatory for every Hakka celebration... Red preserved bean curd (*nam yee*) has a pungent flavor rather like strong cheese. It comes in cubes packed in jars or bottles and is available in Asian food stores.”

The recipe calls for “2 tablespoons red preserved bean curd (*nam yee*).”

Note 1. This is the earliest English-language document seen (Oct. 2010) that uses the term “red preserved bean curd” to refer to a type of fermented tofu.

The recipe for “Five spice rolls” (p. 29) notes that these rolls are a Fukienese favorite. “Dried sheets of bean curd skin [*yuba*] are traditionally used to wrap them and can be bought from health food stores or Chinese grocers.” The recipe calls for “4 large sheets dried bean skin.” The directions read: “2. Wipe the dried bean curd skins with a damp cloth to soften them, then cut the sheets in to sixteen 6-inch (15-cm) squares. Set aside.

The recipe for “‘Good luck’ spring rolls” (p. 45) calls for “10 sheets dried bean curd skin.”

The recipe for “Braised assorted vegetables” (p. 52) is an adaptation of the traditional Buddhist vegetarian dish *Lohan-zai*. Popular additions include “dried bean curd sticks.” The basic recipe calls for “1 tablespoon red preserved bean curd” [*nam yee*].

Six recipes call for “black soy sauce.”

In the “Vital ingredients” section [glossary] (p. 134-41) are entries for the following soy-related ingredients: Dried bean curd skin [dried *yuba*]. Hoisin sauce (a sweet brown sauce based on yellow soybeans). Hot bean sauce or chili bean sauce (“a smooth red sauce made from yellow bean sauce mixed with chilies”). Oyster sauce (contains soy sauce). Preserved bean curd (“has the consistency and pungency of strong smelling cheese.” The two main varieties are red (colored with red rice) or brown; chili and rice wine are often added. “Red preserved bean curd (*nam yee*) has chili and hoisin sauce added to it during fermentation”). Soy sauce (The two main varieties for cooking are light and

black soy sauce. Regular soy sauce {light} is saltier and thinner, and is used as a seasoning in cooking and as a table dip. "Black soy sauce is darker, thicker and richer in color, and is slightly sweeter in taste. Used as a browning agent for roasting or braising meats, it contributed color as well as flavor. Also available are mushroom-flavored soy sauces, seasoned soy sauces for seafood and chili soy sauces"). Yellow bean paste ("tau cheo in Hokkien is also known as fermented bean paste or black bean paste and is similar to Japanese miso"). Address: Freelance writer, artist and cook, Penang, Malaysia.

691. Sugano, Michihiro. 2006. Nutritional implications of soy. In: Michihiro Sugano, ed. 2006. *Soy in Health and Disease Prevention*. Boca Raton, Florida: Taylor & Francis. [xii] + 313 p. See p. 1-16. [10 ref]

• **Summary:** Contents: Introduction. Structure of soybean. Components of soybean: Proteins, oil, carbohydrates, minerals, vitamins. Composition of soy products. Nutritional aspects of soy products: Protein, peptide, oil, oligosaccharide, vitamins, other components. From "A Meat in the Field" to "A Treasure Box of Functionality."

Tables: (1) Major soybean components and their health effects. Two columns: Components and functions. (2) Nutrient contents of dried soybean (incl. minerals and vitamins). (3) Nutrient contents of soybean products (gm per 100 gm): Kinako (parched soybean flour, full-fat). Tofu (bean curd). Abura-age (fried bean curd). Kori-tofu (frozen bean curd). Natto (fermented soybean). Okara (Tofu refuse). Tonyu (soymilk). Yuba (Soymilk skin). Tempe. Miso (bean paste). Shoyu (soy sauce). Soy protein isolate. (4) Mineral contents of soybean products (sodium, potassium, calcium, magnesium, phosphorus, iron, zinc, copper, manganese; same products as in Table 3). (5) Vitamin contents of soybean products (retinol, carotene, D, E, K, B-1, B-2, niacin, B-6, B-12, folic, pantothenic, C; same products as in Table 3). (6) Amino acid and protein composition of Japanese soybean products. (7) Proposed patterns for essential amino acid requirements and composition of soybean proteins (soy protein concentrates and isolates). (8) Fatty acid composition of soybean oils (% of total fatty acids) (Products: Refined soybean oil, genetically modified oils, low linolenic, high oleic, low palmitic, low saturated fatty acid, high palmitic, high stearic).

Figures: (1) Pie chart of intake of soybean and its products in Japan (gm per day of tofu {38.2 gm}, fried tofu {7.9 gm}, natto {6.9 gm}, whole soybeans {2.0 gm}, other {2.3 gm}; Total 57.3 gm per day). (2) Bar chart: Amino acid score of dietary proteins in humans (casein 1.0, egg white 1.0, soy protein concentrate 9.9, soy protein isolate 9.5, beef 9.5). (3) Graph and bar chart: Soybean protein lowers liver delta-6 desaturase activity and liver phospholipid delta-6 desaturation index in rats—relative to casein. Address: Director, Fuji Foundation for Protein Research, Japan; Prof.

Emeritus Kyushu Univer. and President, Prefectural Univ. of Kumamoto, Japan.

692. **Product Name:** Sesame Yuba Strips, Cilantro Tofu Salad.

Manufacturer's Name: Hodo Soy Beanery.

Manufacturer's Address: 1600 S. De Anza Blvd., San Jose, CA 95106. Phone: 408-517-8958.

Date of Introduction: 2007. December.

Ingredients: See below.

Wt/Vol., Packaging, Price: -

How Stored: Refrigerated.

New Product—Documentation: Labels by brought to Soyinfo Center by Min Tsai on 2009. Sept. 16. **Ingredients:** Sesame Yuba Strips: Soybeans, filtered water, teriyaki sauce, rice vinegar, sesame paste, soy sauce, sugar, soybean oil, black sesame seeds.

Cilantro Tofu Salad: Soybeans, water, calcium sulfate, rice vinegar, mushroom powder, sesame oil, cilantro, sugar, salt, black pepper.

693. Bittman, Mark. 2007. *How to cook everything vegetarian: simple meatless recipes for great food*. Hoboken, New Jersey: John Wiley & Sons, Inc. xii + 996 p. Illust. Index. 24 cm.

• **Summary:** The chapter titled "Tofu, vegetable burgers, and other high-protein foods" (p. 637-78) has this contents: Introduction. The umami factor (savory-ness). The basics of tofu: The tofu lexicon (regular tofu, silken tofu, pressed or extra-firm tofu, smoked tofu, fried tofu, baked tofu, fermented or pickled tofu, tofu skins {dried bean stick, yuba, bean curd sheets or skins}). Buying and storing tofu. Preparing tofu (freezing, squeezing, puréeing,...); then come a wealth of recipes.

The index contains 129 entries for tofu, 32 for miso, 26 for tempeh, 25 for soy sauce, 24 for edamame, 23 for seitan, 11 for soybeans, 7 for black beans (fermented [fermented black soybeans]), 4 for teriyaki sauce, 6 for tofu skins (yuba and dried yuba sticks), 3 for milk substitutes, 2 each for meatballs (vegetarian), and 1 each for bean sprouts (soy), black soybeans, meatless meat sauce, soybean oil, soy flour, soy milk, soy nuts, soy pasta, soy protein isolate, textured vegetable protein, tofu noodles, and Worcestershire sauce (hold the anchovies).

There are also recipes for adzuki beans [sic], tahini, vegan cookery—and much more. Address: New York Times food writer.

694. Jones, Russell. 2007. *Loan-words in Indonesian and Malay*. Compiled by the Indonesian Etymological Project. Russell Jones, general editor. Leiden, Netherlands: KITLV Press. xxxix + 360 p. Map. 25 cm. + 1 DVD-ROM (4 3/4 inches). Reprinted in 2008 by University of Washington Press. [70 ref]

• **Summary:** *Tahu*, the Indonesian word for bean-curd / tofu (2 Chinese characters are given) comes from the Chinese Amoy dialect *tau hu* (See also *taofu*; variant *tauhu*).

Tahu pong, the Indonesian word for “soybean cake” [sic, okara], comes from the Chinese Amoy dialect *tau hu phong*.

Taoci, the Indonesian word for fermented black soybeans (two Chinese characters are given) comes from the Chinese Cantonese dialect *tau shi*.

Taoco, the Indonesian word for Indonesian-style miso (two Chinese characters are given) comes from the Chinese Chiangchui, Changchow [Hokkien] dialect *tau chio* (variant *taucio*, *tauco*).

Taofu, the Indonesian word for bean-curd / tofu (2 Chinese characters are given) comes from the Chinese Cantonese dialect *tau foo*. (See also *tahu*; variant *tofu*).

Taogé, the Indonesian word for bean sprouts (of the *Phaseolus radiatus*) [mung bean] (2 Chinese characters are given) comes from the Chinese Chiangchui, Changchow [Hokkien] dialect *tau ge* (var. *taugé*, *togé*).

Taohupoi, the Indonesian word for dried bean curd sheets [dried yuba] (three Chinese characters are given) comes from the Chinese Chiangchui, Changchow [Hokkien] dialect *tau hu phoe*.

Taoki, the Indonesian word for deep fried bean curd strips [deep fried tofu strips] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau ki* (var. *tauki*).

Taokua, the Indonesian word for dried bean curd [pressed tofu] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau koa* (var. *taukua*, *taukua*).

Taoni, the Indonesian word for soya bean milk [soymilk] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau ni*.

Taosi, the Indonesian word for salted soya bean paste [fermented black soybeans] (two Chinese characters are given) comes from the Chinese Amoy dialect *tau si*.

Taoyu, the Indonesian word for soy sauce (two Chinese characters are given) comes from the Chinese Amoy dialect *tau iu* (var. *tauyu*).

695. Shurtleff, William; Aoyagi, Akiko. 2008. *Le livre du tofu: La source de protéines de l'avenir—dès maintenant!* [The book of tofu: Protein source of the future—now! Translated from the English by Nathalie Tremblay]. Varennes, Quebec, Canada: Éditions AdA Inc. 430 p. Illust. by Akiko Aoyagi. Index. Feb. 28 cm. [53 ref. Fre]

• **Summary:** Contents: Preface. Acknowledgements. Part I. Tofu: Food for mankind. 1. Protein East and West. 2. Tofu as a food. 3. Getting started. Our favorite tofu recipes (lists about 80 recipe names for each of the different types of tofu, plus soymilk, yuba, whole soybeans, gô, okara, and curds; very favorites that are also quick and easy to prepare are preceded by an asterisk).

Part II. Cooking with tofu: Recipes from East and West

(500 recipes). 4. Soybeans: History, cooking with whole dry soybeans, roasted soybeans (*iri-mame*), fresh green soybeans (*edamame*), kinako (roasted full-fat soy flour), soybean sprouts (*daizu no moyashi*), natto (sticky fermented whole soybeans, with “gossamer threads”), tempeh (fermented soybean cakes), Hamanatto and Daitokuji natto (raisin-like natto), modern western soybean foods (natural soy flour [full-fat], soy granules, defatted soy flour and grits, soy protein concentrates, soy protein isolates, spun protein fibers, textured vegetable protein (TVP), soy oil products). 5. Gô (a thick white puree of well-soaked uncooked soybeans). 6. Okara or Unohana. 7. Curds and whey. 8. Tofu (includes history, and preparatory techniques: Parboiling, draining, pressing {towel and fridge method, slanting press method, sliced tofu method}, squeezing, scrambling, reshaping, crumbling, grinding).

9. Deep-fried tofu: Thick agé or nama agé, ganmo or ganmodoki (incl. *hiryozu* / *hirosu*), agé or aburagé (incl. “Smoked tofu,” p. 197). 10. Soymilk. 11. Kinugoshi (“*Kinu* means ‘silk’; *kosu* means ‘to strain’; well named, kinugoshi tofu has a texture so smooth that it seems to have been strained through silk”). 12. Grilled tofu. 13. Frozen and dried-frozen tofu. 14. Yuba (incl. many meat alternatives such as Yuba mock broiled eels, Buddha’s chicken, Buddha’s ham, sausage). 15. Tofu and yuba in China, Taiwan, and Korea (incl. Savory tofu {*wu-hsiang kan*}; see p. 258 for illustrations of many meat alternatives, incl. Buddha’s fish, chicken, drumsticks, and duck, plus vegetarian liver and tripe, molded pig’s head, and molded ham). 16. Special tofu.

Part III—Japanese farmhouse tofu: Making tofu for more and more people. 17. The quest. 18. Making community tofu. 19. The traditional craftsman. 20. Making tofu in the traditional way. Appendices: A. Tofu restaurants in Japan (many are vegetarian). B. Tofu shops in the West (Directory of 43 shops in the USA, 3 in Europe {Germany, Austria, Belgium, Denmark, Finland, France, Ireland, Italy, Netherlands, Portugal, Spain, Switzerland, UK, Wales}, and 3 in Latin America {Brazil, Colombia, El Salvador, Guatemala, Mexico}). C. People and institutions connected with tofu. D. Table of equivalents. Bibliography. Glossary. Index. About the authors (autobiographical sketches; a photo shows Shurtleff and Aoyagi, and gives their address as New-Age Foods Study Center, 278-28 Higashi Oizumi, Nerimaku, Tokyo, Japan 177). Sending tofu in the four directions.

pudding recipes include: Rice pudding with gô and apple (p. 76, incl. 2 cups soymilk). Tofu chawan-mushi (p. 147; Steamed egg-vegetable custard with tofu). Tofu fruit whips (p. 148). Tofu rice pudding (p. 150, incl. 1 cup soymilk). Tofu custard pudding (p. 152). Soymilk custard pudding (p. 208). Brown rice pudding (p. 208, with 2 cups soymilk). Soymilk chawan-mushi (p. 209). Chawan-mushi with yuba (p. 249).

Dessert recipes include: Tofu whipped cream or yogurt (p. 148; resembles a pudding or parfait). Tofu ice cream

(p. 149, with chilled tofu, honey, vanilla extract and salt). Banana-tofu milkshake (p. 149). Tofu cream cheese dessert balls (p. 149). Tofu icing (for cake, p. 149). Tofu cheesecake (p. 150). Tofu-pineapple sherbet (p. 151). Also: Soymilk yogurt (cultured, p. 205). Healthy banana milkshake (p. 206). On p. 160 is a recipe for “Mock tuna salad with deep fried tofu.” Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549 USA. Phone: 925-283-2991.

696. Liu, KeShun. 2008. Food use of whole soybeans. In: Lawrence A. Johnson et al. eds. 2008. *Soybeans: Chemistry, Production, Processing, and Utilization*. Urbana, Illinois: AOCS Press. viii + 842 p. See p. 441-481. Chap. 14. [85 ref]

• **Summary:** Contents: Introduction. Non-fermented soyfoods: Soymilk (traditional soymilk, modern soymilk {techniques to reduce beany flavors, formulation and fortification, homogenization, thermal processing, and packaging}), tofu (preparation methods, factors involved in tofu-making {soybean varieties, storage and pretreatment, solids concentration, heating, type of coagulants, coagulant concentration, coagulation temperature, coagulation time, process automation, packaging}), varieties of tofu {silken tofu, regular and firm tofus, varieties of tofu products}), green vegetable soybeans, soybean sprouts, yuba, okara, roasted or cooked soybeans. Fermented soyfoods: Terms (Koji {fermentation, koji starter, inoculum}), fermented soy paste (preparation method {preparing rice koji, treating soybeans, mixing and mashing, fermenting, pasteurizing and packaging}), processing principles), soy sauce (preparation method {treating raw materials, koji making, brine fermentation, pressing, refining}), processing principles, chemical soy sauce), Japanese natto (preparation method, processing principles), Indonesia tempeh (processing method, processing principles), fermented soymilk, fermented tofu (preparation method, processing principles), fermented black soybeans (Chinese douchi, Japanese hamanatto). Conclusion.

Figures show: (1) Flowchart of a traditional Chinese method for making soymilk and tofu. (2) Photo of savory tofu dices. (3) Photo of soy sprouts. (4) Photo of yuba (soymilk film). (5) Photo of Chinese jiang and Japanese white and red miso. (6) Flow chart of a common method for making Japanese rice miso. (7) Photo of Japanese natto. (8) Flow chart of a traditional Indonesian method for making tempeh. (9) Photo of Chinese douchi (fermented black soybeans or fermented whole soybeans). Address: Research Chemist, U.S. Dep. of Agriculture, Agricultural Research Service, Grain Chemistry and Utilization Lab., Aberdeen, Idaho 83210.

697. Tan, Chee-beng. 2008. Tofu and related products in Chinese foodways. In: Christine M. Du Bois, C.-B. Tan, and S.W. Mintz, eds. 2008. Urbana, Illinois: University of Illinois Press. viii + 337 p. See p. 99-120. [39 ref]

• **Summary:** Contents: Introduction. Historical background. Production and marketing of tofu. Consumption—tofu and Chinese foodways. Tofu’s symbolic associations. Conclusion.

Tofu and related foods consumed in China include: (1) Tofu. It is called *doufu* in Standard Chinese or Mandarin (*Putonghua*), *dauh-fu* in Cantonese, and *tauhu* in Minnahua or Hokkien (2) *Doufujiang*, more commonly known as *doujiang*, which is soymilk. (3) *Doufu hua* (soybean custard), or more commonly *douhua*. (3) *Doufu pi* (tofu skin [yuba]). (4) *Zhizhu* [*fuzhu*; dried yuba sticks].

(5) *Doufu pao* (small blocks of deep-fried tofu puff). (6) *Dong doufu* (frozen tofu). (7) *Doufugan* or *dougan*—fresh tofu that has been firmly pressed to partly dehydrate it, and then is air dried. Chinese-style pressed tofu can be further processed to make... (8) *Xun doufu* (smoked tofu).

(9) *Wuxiang doufu* [also called *wuxiang doufugan*] (five-spiced tofu). (10) Pressed tofu can be soaked in brine and fermented to make *chou doufu*, which is usually referred to as “smelly tofu” but which Hsu and Hsu (1977, p. 301) translate as “molded beancurd.” (11) Tofu can also be fermented to make *doufuru*, or simply *furu*. (12) Okara is described (p. 106) as “leavings” or “soybean dregs,” or “tofu lees.”

Note: This is the earliest English-language document seen (May 2012) that contains the term “smelly tofu” or the term *Doufu pao*.

Photos show: (1) Person making tofu in a Yongchun village, Fujian—filtering. (2) Grinding unripe soybeans (*maodou*) for sale at a morning market in Kunming, Yunnan. (3) Soybean plants in between rice plots in a village in Ganluo Country, Sichuan. (4) Selling bean curd custard in Chengdu, Sichuan. Address: Chinese Univ. of Hong Kong, chair of the Dep. of Anthropology.

698. Kim, Vitali. 2008. Yuba in Russia (Interview). *SoyaScan Notes*. Nov. 11. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Quite a bit of dried yuba (fu-ju; dried bean curd sticks) is now consumed in Russia, especially in salads. Most of it is imported from China and Vietnam. The Russian people eat yuba because they like the flavor. The price of dried yuba (fu-ju) is now about 190 rubles (\$7.00) per kg.

Vitali has purchased equipment for making tofu and called (and e-mailed) to ask about “technology for fu-ju production.”

Note: Elista is located between the Black Sea and the Caspian Sea, not far north of the Caucasus mountains. Address: Elista, Republic of Kalmykia, Russia.

699. Malaki Nik, A.; Tosh, S.M.; Poysa, V.; Woodrow, L.; Corredig, M. 2008. Protein recovery in soymilk and various soluble fractions as a function of genotype differences, changes during heating, and homogenization. *J. of*

Agricultural and Food Chemistry 56(22):10893-900. Nov. 26. *

• **Summary:** Harovinton, a soybean variety widely used to make tofu, and 11 derived null soybean genotypes lacking specific glycinin (11S) and beta-conglycinin (7S) protein subunits were investigated to determine whether changes in protein composition affected the protein recovery in soymilk and its soluble fractions after various centrifugation steps. Address: Dep. of Food Science, Univ. of Guelph, Guelph, ONT, Canada.

700. Cheung, Nedy Tak-ching. 2008. Women's ritual in China: Jiezhu (receiving Buddhist prayer beads) performed by menopausal women in Ninghua, western Fujian. Lewiston, NY: Edwin Mellen Press. v + 320 p. + [40] p. of plates. Illust. (some color). Maps. 24 cm. *

• **Summary:** Page 142: Fuzhu [dried yuba sticks] is defined as "tightly rolled skin of bean milk..."

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "tightly rolled skin of bean milk" to refer to what are probably dried yuba sticks.

701. Chin, Woon Ping. 2008. Hakka soul: memories, migrations, and meals. Singapore: NUS Press (National University of Singapore); Hawaii: University of Hawaii Press. 199 p. *

• **Summary:** Page 3: "'I want to eat *fu jook tong sui*,' she croaked, her thin white hair streaming down her chest, her face sagging and sad. Sitting up in her four-poster bed with its mosquito net gathered behind her, she looked like a haggard ghost."

702. Newman, Jacqueline M. 2008. Cooking from China's Fujian province: One of China's eight great cuisines. New York, NY: Hippocrene Books. 258 p. Illust. (color). Index. 24 cm. [16 ref]

• **Summary:** Fujian province, in southeastern China, enjoys a distinct culinary tradition with a thousand year old recorded history—yet it is barely known in the Western world. In addition to carefully researched cultural and historical notes, this book features a collection of 200 authentic recipes.

Dr. Newman was born in 1932. She lives on Long Island, New York.

Bean curd [tofu] appears in the index 24 times, bean curd sheets / skins [yuba and dried yuba sticks] 6 times, fuyu (Fermented bean curd [fermented tofu]) 5 times, black bean sauce / fermented black beans [fermented black soybeans] 3 times.

\ In the Glossary, the section titled "Milk and nondairy milk products" (p. 229-30) states: "Soy milk is the most common nondairy milk used;" it is made into many doufu / tofu products. Nut milks are also popular. Bean curd and pastes are also known in English as Doufu or Tofu. Some of the varieties are: Brown bean curd. Bean curd cheese—

correctly called fuyu. Doufu—Called tofu in Japanese. Fermented bean curd—see Fuyu below. Fuyu—the common Chinese name for "fermented bean curd squares." They are mostly widely used as a seasoning. Some fuyu is seasoned with leeks or chili peppers or both. Bean curd skin. Also called bean curd sheet. It is dried. Doufu: See Bean curd and pastes. Tofu: See Bean curd and pastes. Soymilk is called "Bean curd milk" (p. 230). Address: Food historian and scholar, Former prof., Dep. of Home Economics, Queens College of the City Univ. of New York, 65-30 Kissena Blvd., Flushing, NY 11367.

703. Soyafarm USA Inc. 2009. Soyafarm (Website printout-part). www.soyafarmusa.com Printed June 28.

• **Summary:** Contents: Home page. Retail (Soyafarm Bistro Burger {meatless}, Edamame Shumai, Gourmet Tofu Delights). Food service (Soyafarm Edamame Yuba Shumai, Edamame Yuba Sticks {available since Nov. 2004}), Tofu & Yuba Patties, Baked Tofu, Tofu Nuggets, Soya-Up R CSP (fine white powder, water-soluble soy polysaccharides, made from okara). Profile (Soyafarm USA is a division of Japan's Fuji Oil Group. "Fuji Oil Group has been a world leader in the creation of innovative and delicious soy foods for over 50 years. With headquarters in Japan, where delicious, healthy soy foods are a honored tradition, Fuji Oil Group operates in Asia, Europe, South America and USA"). Contact us. Links. Address: 20675 S. Western Ave., Suite #210, Torrance, California 90501. Phone: Fax: 310-781-9293.

704. Tsai, Minh. 2009. Biography including work with tofu (Interview). *SoyaScan Notes*. Sept. 16. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Minh was born on 10 Jan. 1971 in Saigon, the capital of South Vietnam (later renamed Ho Chi Minh City). His name at birth was Minh Thai and he was the first child in the family. A younger brother was born later, followed by a sister. His parents and grandparents were all of Chinese ancestry. At the time of his birth, his parents were both teachers. His father taught history and music at a private high school and elementary school. His mother taught 1st grade at a private elementary school.

The Vietnamese war, which had started in Aug. 1964 was raging and Richard M. Nixon was president in the USA.

His formal education began when he attended first grade at the school taught by his mother. She was a strict teacher—especially with her own son.

1975 April 30—The Vietnam war comes to an end as the Vietnamese National Liberation Front takes control of Saigon and the Saigon regime surrenders. The day before a helicopter had lifted the last fleeing people off the roof of the U.S. embassy in Saigon. North Vietnamese now begin transforming South Vietnam along Communist lines.

In 1977 he was pulled out of school by his parents, who stopped teaching at about the same time—before they were

branded intellectuals and forced to stop. His parents took odd jobs to try and earn a living. Minh was sent to a tutoring system, but he escaped and thoroughly enjoyed himself from 1977 to 1980 doing what he wanted to and becoming a little entrepreneur to help the family earn money. He has fond memories shopping for food in the neighborhood with his grandparents.

In 1980 his family of five became one of the boat people who fled Vietnam. Their boat landed in Malaysia, where they lived on an island in a refugee camp run by the United Nations. They began to seek political asylum, which was finally granted to them by the U.S. government. They were put on an airplane and flown to the United States.

On 16 July 1981 the family of five landed at San Francisco International Airport. At immigration, the family surname was changed from Thai to Tsai (their correct Chinese surname). Minh was age 11 and spoke no English. They settled in San Francisco and were placed on the general welfare system of food stamps, etc. Minh entered 5th grade at the E.R. Taylor Elementary School, a public school near their home. With the help of an ESL (English as a Second Language) program, he was fluent in English within a year.

In 1985, after graduating from elementary school, he entered a private high school in San Francisco—University High School in Pacific Heights. Taking college preparatory courses, he graduated in June 1989.

In the fall of 1989 he enrolled in Columbia University with a scholarship. Studying economics and Asian studies, he graduated in 1993 with a BA in economics.

He then entered graduate school at Columbia Univ. in School of International and Public Affairs (SIPA). He graduated in 1994 in an accelerated course with an MA degree.

He went to Hong Kong and went to work for J.P. Morgan as an investment banker. There, in 1995, he met the young lady (Jean Ku) who would later become his wife. Hong Kong was not transferred by the British to Chinese control until 1 July 1997.

In 1996 he left J.P. Morgan to live in Costa Rica for 3 months; he worked as a chef in a vegetarian restaurant, read and wrote. Then he returned to San Francisco where he worked for the management consulting firm of Arthur D. Little.

In 1998 he left the world of high finance and worked for one year for a small Web software company named Phoenix Pop. He was paid well in both real money and stock options.

In 1999 he returned to the world of finance, starting work at Charles Schwab Corp., the brokerage firm. Both his parents were still living. Also in 1999 he reconnected with his wife-to-be when she enrolled in the University of California at Berkeley as a graduate student. They began dating and soon became close.

In 2002 he left Schwab and decided to take some time off; he worked part time as an independent contractor /

consultant for Wells Fargo.

In 2003 Minh decided to drop out. He and his girlfriend enjoyed fine food and traveled the world, to Vietnam, China, Burma, France, Italy, etc.

After a year or so, he and his girlfriend returned to San Francisco. With four cousins on her side (all entrepreneurs and all very interested in food) they decided to meet once a week or so to cook and enjoy the meal together. Right from the beginning they began talk about how it would be interesting for them to start a food business. Their first idea was a high end / upscale Asian supermarket, but they concluded it was an idea ahead of its time.

They also chose a theme for each meal—Chinese, Italian,... and tofu. But they had a problem finding good, fresh tofu. So they decided to try making fresh tofu themselves. They found a place in San Jose (Sogo Tofu, 1600 S. De Anza Blvd., San Jose, CA 95106) that would let them use its facilities on weekends. Since everyone but Minh worked during the week, the six met there on weekends and learned to make tofu.

In the fall of 2003 they were ready to go. They called their company “Basic Soy Beanery.” They began to sell their unique line of tofu and related products (all made from soymilk) that fall at a farmers’ market in Palo Alto on Saturdays. Their first day, sales were \$120. So for the next few months they met Friday evening to make their soyfood products at Sogo Tofu, sold the food on Saturday at the same farmers’ market, then met in San Francisco each Sunday to have a meal and “debrief.”

The Palo Alto farmers’ market closed for the winter in December 2003. By now they felt they had tested and proved their concept, so they were ready to start a real company. In the spring of 2004 they all formed Basic Soy LLC; today the company traces its origin back to May 2004.

Before May 2004 the company sold the following products: Soy Milk. Silken Tofu. Medium Tofu. Braised Tofu (firm, grilled). Yuba. Soy Omelette (with yuba). Soy Croquettes (meatless meatballs). Poached Yuba Loaf.

The cousins returned to selling their fresh soy products at farmers markets.

But by the fall of 2004 it had ceased to be fun for many. There may have been some viability in the business, but no one but Minh wanted to continue. The others told him to do what he wanted with the idea; there was no talk of ownership, a buyout, or anything like that.

So Minh and Sogo employees started to make tofu and related soy products once a week. Minh would sell the products at a farmers market, expanding to the one in San Francisco and then the one in Berkeley. The first article about Minh’s enterprise appeared in the *San Francisco Bay Guardian* (May 4-10, 2005). He did that solo for one year. His girlfriend (Jean Y. Ku) had a good job and she paid his way—proof to him that she was a solid, reliable person.

They were married on 15 Oct. 2005 at the Brazilian

Room in Tilden Park.

That same fall, he decided that the time had arrived to look for financing to grow the business. It was already breaking even. He called the cousins together and told them they each owned one sixth of the company—but only if they were willing to invest in it would they be paid dividends. None of them wanted to invest and since none of them had done any work for the past year or ever before claimed any ownership, he felt that he owned them nothing. But now they decided to insist on owning one-sixth. And since they were close relatives, in the name of family harmony, he said he was willing to buy them out. They hired a lawyer and the negotiations went on for two months in the summer of 2005.

Now Minh would have to go looking for outside investors. But that's not how things worked out. A local man named John Notz had read the article in the Bay Guardian, phoned Minh and offered to invest money. Minh turned him down, in part because John was not interested in selling tofu at the farmers' markets. A few months later John called Minh again and said he would like to meet Minh at his space at the Berkeley farmers' market on Thursday. They got along well and soon John was selling the soyfoods at farmers markets, first with Minh and then by himself. Before long they hired a lawyer and formed a corporation.

On 7 Sept. 2005 the name of the business was officially changed to Hodo Soy Beanery. In Cantonese Ho means "good" and "do" (actually dow or dou) means "bean." Address: Founder, Hodo Soy Beanery, 2923 Adeline Street, Oakland, California 94608. Phone: 510-735-4587.

705. Yollin, Patricia. 2009. New factory to help unravel mystery that's tofu. *San Francisco Chronicle*. Nov. 12. p. E-1.

• **Summary:** When the subject is tofu, some people say things like: "Too bland. Too rubbery. Too spongy. Too puzzling." Min Tsai, age 38 and a resident of Albany, as heard it all; he makes tofu and sells it directly to shoppers at 10 Bay Area farmers' markets., and to top restaurants such as Greens, Coi, and the Slanted Door. His goal is to educate people about tofu and demystify it.

In mid-October his soy company, Hodo Soy Beanery, began making tofu and yuba at a 12,000-square-foot state-of-the-art factory in West Oakland—almost five times the size of the old plant in San Jose. Next month, he hopes to start public tours and tastings.

Min Tsai grew up in Vietnam and arrived in the United States at age 11. Dean Ku is Hodo co-founder and John Notz is the company's co-founder. Address: Special to the Chronicle.

706. Lewis, Lynn. ed. 2009. *The food of Asia: a journey for food lovers through China, India, Japan & Thailand*. Sydney, Australia: Murdoch Books Pty Ltd. 504 p. Illust. (color). Index. 30 cm.

• **Summary:** A gorgeous, artistically designed book, printed on glossy paper, with spectacular color photos on every page.

Contents: The food of Asia: China, India, Japan, Thailand. Snacks. Starters and salads. Soups. Seafood. Poultry. Meat. Tofu, legumes & vegetables. Noodles & rice. Accompaniments & side dishes. Desserts. Breads, rice & basics. Glossary.

"China has one of the great cuisines of the world." Japan: "... combines delicate, subtle tastes and textures, always prepared with a light hand and sublimely presented to appeal to the eye as well as the tastebuds."

Soy-related: Inari sushi (p. 22-23). Tofu rolls (from China, with firm tofu and tofu skins [yuba], p. 76-77). Chilled tofu with ginger and spring onion (from Japan, with "600 gm block silken firm tofu," p. 78-79). Tofu dengaku (from Japan, with "700 gm firm {cotton} tofu" and "100 gm red or white miso paste," p. 94-95). Tofu and spinach soup (from China, with "120 gm soft tofu, drained," p. 100-01). Stuffed tofu soup with prawns (from Thailand, p. 102-03). Ramen noodles with soy broth (from Japan, p. 104-05). Agedashi tofu (from Japan, p. 110-11). Fragrant tofu and tomato soup (from Thailand, p. 124-25). Ten-treasure soup (from China, with 450 gm firm tofu, p. 126-27). Salmon and tofu balls (from Japan, p. 150-51). Steamed mussels with black bean sauce (from China, with "1 tablespoon salted, fermented black beans, rinsed and mashed," p. 178-79). Clams in yellow bean sauce (from China, with "2 tablespoons yellow bean sauce," p. 178-79). Soy chicken (from China, with dark soy sauce and light soy sauce, p. 214-15). Shanghai soy duck (with light and dark soy sauce, p. 236-37). Shabu shabu (from Japan, with "150 gm firm {cotton} tofu," p. 258-59).

Tofu, legumes & vegetables: Ma Po tofu (from China, "A quintessential Sichuan dish... Soft tofu is traditionally used," p. 298-99). Braised tofu with Chinese mushrooms (from China, p. 304-05). Fermented tofu with Asian greens (from China, with "3 tablespoons fermented white tofu," p. 304-05). Mushrooms with tofu (from Thailand, p. 308-09). Miso tofu sticks with cucumber and wakame salad (from Japan, with "500 gm silken firm tofu, well drained" and "3 tablespoons white miso paste," p. 310-11). Stuffed tofu (from China, p. 314-15). Stir-fried tofu in yellow bean sauce (from China, p. 314-15). Buddha's delight (from China, with "50 gm tofu puffs {deep-fried cubes of tofu}," p. 322-23). Soft tofu with chilli and spring onion (from China, p. 328-29). Braised tofu (from China, p. 328-29). Mock duck (from China, with homemade wheat gluten, p. 338-39). Beans with sesame miso dressing (from Japan, p. 392-93). Shiitake simmered in soy [sauce] (from Japan, p. 408-09). Three ways with sauces (from Japan, Ponzu, Sesame seed sauce, and Tempura dipping sauce, with soy sauce, p. 484-85). Three sauces (from China, Soy and vinegar dipping sauce, Soy, vinegar and chilli dipping sauce, Soy, chilli and sesame dipping sauce, with soy sauce, p. 487-88).

Glossary of Asian food and cooking (p. 492+): Aburage, dal (dhal), edamame, fermented tofu (“It is sometimes called preserved tofu or tofu cheese and is used as a condiment or flavouring”), hoisin sauce, inari abura-age (used to make inarizushi), Japanese mustard, Japanese soy sauce (shoyu), ketchup manis ([kecap manis] “A thick, sweet soy sauce used as a flavouring”), kuzu, mirin, miso, nori, paneer, ponzu, red bean paste (“Made from crushed adzuki beans and sugar...”), salted, fermented black beans (soya beans), sesame paste, sesame seeds, Shaoxing rice wine, soya beans, tofu, wakame, yellow bean sauce.

707. Nguyen, Andrea. 2010. Re: Types of tofu and yuba in Vietnam. Letter (e-mail) to William Shurtleff at Soyinfo Center, May 1. 1 p.

• **Summary:** If you go to a Lo Dau Hu (Viet tofu shop) in the United States, the most common types of tofu you’d find are: (1) Dau hu / dau phu: block / regular tofu (2) Dau hu chien: fried regular tofu (in pieces). (3) Fried tofu with stuff suspended in it (e.g., wood ear mushroom and glass noodles) that’s similar to the Japanese approach to making gomoku dofu. (4) Che dau hu: Soft tofu to be served with sugar and ginger syrup.

Yuba (tofu skin): At Vietnamese restaurants, you sometimes get a side dish of tofu skin rolls made from Tau hu ky [pronounced tau hu kay; dried yuba sticks], the Vietnamese name of yuba.

In Vietnam, fermented tofu is named “chao.”

Note: One popular Vietnamese yuba recipe is Com tam tau hu ky suon bi (Broken rice with yuba wrapped shrimp, pork chop, and pork skin). A detailed recipe can be found on the Web under its Vietnamese name. “Even though this dish originally arose from a culture of poverty—the Vietnamese rice farmers couldn’t sell the broken grains of rice so they kept them for their own use. Today, you can find this dish served in almost every Vietnamese restaurant due to the simplicity as well as the variety of toppings available,...”

Other Vietnamese yuba recipes on the Web include: (1) Tom tau hu ky (Vietnamese shrimp paste wrapped in yuba). Fresh yuba is wrapped around a spoonful of shrimp paste, then the packet is deep fried. (2) Com tam suong nuong tau hu ky (Broken rice with pork and shrimp cake wrapped in yuba). Address: vietworldkitchen.com, California.

708. Nguyen, Hoang Quoc. 2010. Re: Soyfoods and soybeans in Vietnam. Letters (e-mails) to William Shurtleff at Soyinfo Center, May 4-12. 1 p. each.

• **Summary:** Mr. Nguyen is the father of Andrea Nguyen, author of *Into the Vietnamese Kitchen* (2006, Ten Speed Press) and was kindly introduced to Soyinfo Center by Andrea, who is now writing a book about tofu in Asia.

Mr. Nguyen was born and raised in Vietnam, and lived there with his wife and family until April 1975 when he fled to the USA just before the fall of Saigon and the American

defeat in what Vietnamese call the “American War.”

He was governor and military sector commander of two provinces in the Mekong Delta of Vietnam (Vinh Binh {now called Tra Vinh} from 1956, and Kien Phong {now called Dong Thap Muoi} from 1956-1960), and of Binh Thuan, in the south of central Vietnam, from 1960-1963. While he is not a specialist in Vietnamese food, he knows as much about it (or more) as the typical person born and raised in that country.

Question: Do Vietnamese eat soybeans as a green vegetable (green vegetable soybeans, edamamé)? Ans: No, and there is no specific name for them.

Question: Please tell me about soymilk in Vietnam. Ans: Its name in Vietnamese is *sua dau nanh* (with diacritical marks). It was very popular, but mostly in the cities (as we were in Viet Nam before 1975). Don’t know exactly at the present time. Use it at breakfast or at any time during the day as a beverage. It is sold in a plastic container, at tofu shops or at marketplaces. Nobody made it at home at our time in Viet Nam (before 1975). But soybean milk machines are now on the market at non-expensive prices. Probably some people are making it at home for freshness. It is typically served sweetened or plain; not salty. It has a fairly long history. Its popularity is increasing with the propagation of the soybean’s benefits.

Question: Please tell me about yuba (the film that forms atop soymilk when it is heated) in Vietnam. It is often called beancurd skin or (when dried) beancurd sticks in Vietnamese cookbooks. Ans: It is called *phu chuc* (dried rolled yuba; dried yuba sticks) in north Viet Nam, and *tau hu ky* in south Viet Nam. [Called Fuchu or fuzhu in Chinese]. Fresh dry yuba is *tau hu ky tuoi* (it needs to be frozen or refrigerated and thawed before using) and regular dry yuba is *tau hu ky kho*.

All Vietnamese (north, center, and south) use only one language but there are differences in tone and accent in pronunciation, and also in the naming of some things and objects. The phonetic adaptation from Chinese or French words are also different, it may be the reason of Tau Hu Ky for Fu Pi and Phu Chuc for Fu Zu.

Yuba is very popular, used in households, market stalls, and restaurants—especially in place of meat in vegetarian dishes and diets (influenced by Buddhism). It is sold in dry form, either unfried or fried, in a package at any market place. It is made only by special factories of Chinese origin. It is served as a wrapper for shrimp or meat, then fried. Also in soup—fried and served with broken steamed rice, and many other dishes at home and restaurants from selected to street corners. It is especially useful in the preparation of vegetarian dishes as a substitute for real meat. In one popular dish (called *Chan Thien Ky*), *tau hu ky* [yuba] is wrapped around minced shrimp to make a little packet, which is deep-fried; it is somewhat like the Cantonese dim sum item of shrimp in “tofu skin” but Viet people commonly serve it

as a side dish on rice plates. Another popular yuba recipe in Vietnam is *Com Tam Tau Hu Ky Suon Bi* (Broken rice with yuba wrapped around shrimp, pork chop, and pork skin). Note: A Google search for “tau hu ky” will bring up many other recipes, images, and videos in Vietnamese and English. Yuba has a long history in Viet Nam, being introduced along with Chinese cuisine. Today its use is increasing along with the demand for new recipes and awareness of the benefits of consuming foods made from soybeans. Yet it is still not an item in everyday meals, but is reserved for special occasions, whether at home, in a restaurant, or at parties.

Question: When the French divided today’s Vietnam into Tonkin (north), Annam (middle) and Cochinchina (south), were there any cultural or language differences between the three? Were the divisions based on these cultural and language differences or not? Ans: No major difference in culture or language existed between the three regions at that time. The French made the division just for more efficiency and convenience in their colonization of Viet Nam. The French split Viet Nam up into many areas with different administrative systems so as to maintain the division, in order to make their occupation more efficient [and to try to prevent or limit the growth of nationalist or resistance movements].

Question: Please tell me about soybean cultivation in Vietnam. Ans: At this present time, because of the huge demand of soybean for edible oil and meal or cake for animal feeds, milk for human consumption, large areas in the South (east and west parts) are being used for cultivation of soybean. Production in the North and Central regions, due to limitation of available lands, may be sufficient only for regional production of Tuong and Tofu. Five different kinds of seeds are being introduced and tested and yield/ha are much better. Areas in the south-west (Mekong delta) will produce 3 crops per year.

For centuries soybeans have been cultivated in Viet Nam. Before the vegetable oil from soybean was introduced, each region produced what people need for daily consumption. This has been changed completely because of the demand for soybean oil, milk, sub-products for animal feeds.

Soybeans are cultivated along the hillsides or high level areas not submerged by water, or in between the rice crops seasons. In the south western region (Mekong delta) where the field is submerged under the water every year for 4 months, farmers can now plant soybean after the rice crop harvest. They burn the hay, make holes and put the seeds down, cover with hay, let it grow, fertilize (chemical), use pesticides and herbicides. After 75-82 days they can harvest (still by hand), or use a machine to pull out the beans, then dry them. Viet Nam is presently divided into 62 provinces and towns; soybean is planted in 43 of them. At the present time, no information is available about large size farms using complete machinery like in the USA, but an

area like the Mekong Delta may open up and introduce this kind of large farming process. The highlands in Viet Nam offer tremendous opportunities for development of modern farming (mechanized) but require enormous investments in knowledge, experience, and quick flexibility of action and funds. A state economy system cannot afford to let that happen, I would say.

Viet Nam still has to import 400,000 to 500,000 tons of soybean every year from China, Kampuchea [Cambodia], Thailand, Canada and the USA.

Today, soybeans are most widely used as a food in the south of Vietnam. My estimate of the amount of soybeans used in traditional foods (in descending order of popularity) is: Tofu, soy milk, tuong (a thick fermented soy sauce), chao (fermented tofu), soy sauce (liquid), tau hu ky (yuba).

Additional remarks: Tuong should be considered in this study, as tuong is a sauce made and used only in Viet Nam. It is made from rice and soybean, plus salt, in a very delicate way, serving as sauce for eating and cooking. Long ago the northern Viet term for soybeans was “dou,” as in Chinese. But soybeans were also called “dou tuong” because they were so widely used in Vietnam to produce the popular fermented sauce “tuong.” That’s why today the Vietnamese term for soy sauce is either “nuoc tuong” [sauce + tuong; a lingering reference] or “xi dau,” from the Cantonese phonetic.

All the Vietnamese (old generation, of north and center origin) living in the US, miss “tuong” very much as the Tuong Cu Da being sold in the market places here is not the real thing—in terms of composition, taste and flavor. The three best kinds of Tuong are: (1) Tuong Cu Da. (2) Tuong Ban, in north Viet Nam, and (3) Tuong Nam Dan, in Nghe An (central Viet Nam).

Note: Andrea adds: “These are really cool tuong sauces!” Address: San Clemente, California.

709. Chen, Y.; Ono, T. 2010. The mechanisms for yuba formation and its stable lipid. *J. of Agricultural and Food Chemistry* 58(10):6845-49. May 26. *

Address: The United Graduate School of Agricultural Sciences, Iwate University, Ueda 3, Morioka, Iwate 020-8550, Japan.

710. Hodo Soy Beanery. 2010. Hodo Soy Beanery names John Scharffenberger chief executive officer (News release). Oakland, California. 1 p. June 14.

• **Summary:** “Oakland, Calif.—Hodo Soy Beanery, the Bay Area’s only maker of artisan organic soymilk, tofu, yuba, and ready-to-eat soy products, announced today that food and wine entrepreneur John Scharffenberger has joined the company as its CEO. Scharffenberger brings extensive knowledge and experience in launching and building successful gourmet food and wine companies to this new position, where he will oversee Hodo’s growth, build the

sales team and distribution network, drive strategic planning, and raise awareness of the distinctive soy products coming from the company's state of the art facility.

"Scharffenberger discovered Hodo Soy Beanery at the Berkeley Farmers' Market, and he subsequently joined as an advisor and board director. John Notz, CFO of Hodo, comments, 'As John got more involved as an investor and Hodo board member, we realized that he would be a great fit for CEO. Ironically, when we were first crafting our vision for the company, we talked about Hodo as the "Scharffenberger of Soy." We are very lucky to have him.'

"Scharffenberger admits that he didn't particularly love tofu, 'but Minh Tsai, Hodo's founder and tofu master, had me hooked with the first bite. I'm definitely looking forward to joining the team and expanding awareness of how amazing and innovative Hodo's tofu products are. This new appointment also frees up Minh to focus on his passion for making great tofu and sharing his enthusiasm for the tofumaking process.'

"Throughout his career, Scharffenberger has energized under-appreciated food and wine categories such as sparkling wine and gourmet chocolate with the successful launches of Scharffenberger Cellars and Scharffen Berger Chocolate Maker. More recently, he has traveled the world as a chocolate expert and served as consultant to the farming and food production industry, helping private for-profit and nonprofit producers analyze, develop and achieve sustainably higher returns. According to Scharffenberger, 'Hodo Soy Beanery is ready to move to the next level. The creative work of Minh and his crew is converting tofu skeptics with their fresh, locally made products. Our factory tours and production transparency reminds me of when Scharffen Berger was at the same stage.'

"Scharffenberger begins work at Hodo Soy Beanery on June 14th, 2010.

"Hodo Soy Beanery is an organic bean-to-block tofu and yuba maker in Oakland, California. Their products are made fresh daily with whole organic, non-GMO soybeans sourced from a Midwest farmers' cooperative. Hodo Soy Beanery's products are available at Bay Area farmers' markets, specialty grocers like Whole Foods and on the menus of notable restaurants, including The Slanted Door and COI. For more information or to reserve a tour, please visit <http://www.hodosoy.com>."

Note: In Aug. 2005 Scharffen Berger Chocolate Maker was purchased by The Hershey Co. Hershey purchased Scharffen Berger for about two times the company's annual revenue, which was approximately \$10 million a year at the time of the 2005 acquisition (Source: Wikipedia).

Previously, John founded Scharffenberger Cellars, an ultra-premium sparkling wine producer, which he sold to LVMH in 1995.

711. **Product Name:** Organic Spicy Yuba Strips.

Manufacturer's Name: Hodo Soy Beanery.

Manufacturer's Address: 2923 Adeline St., Oakland, CA 94608. Phone: 510-464-2977.

Date of Introduction: 2010. September.

Wt/Vol., Packaging, Price: 1 lb (453 gm).

How Stored: Refrigerated.

New Product–Documentation: Shelf hanger brought to Soyinfo Center from Cosco in Mountain View, California, by a visitor, who said he found the product too sweet.

E-mail from Billy Bramblett of Hodo Soy. 2012. May 14. "The current plant became a certified organic processor in Sept. of 2010, about four months after I came on board. Minh and his cousin-in-law, Dean, had started the certification process with CCOF in the spring of that year, but by the time we got all the paperwork in and had the inspection, it was the fall. So, while Yuba and Yuba strips were made by Hodo for several years, they weren't Organic until we rolled out our organic retail line in fall 2010."

712. *Tasting Table (San Francisco edition)*. 2010. Pure puree: The ethereal allure of nama yuba. Oct. 10. www.tastingtable.com/entry_detail/sf/2279.

• **Summary:** Nama yuba (fresh yuba), made by Oakland's Hodo Soy Beanery, has recently started to appear on Bay Area menus—even though it is not sold retail. It can be found at Ozuma (a sushi bar in San Francisco and Oakland), Murray's Circle in Sausalito, Ippuku (an *izakaya* in Berkeley).

713. Duggan, Tara. 2010. Tofu breaks a big barrier: Artisans craft better soybean product to share table with chicken and beef. *San Francisco Chronicle*. Oct. 24. p. K1, K4.

• **Summary:** Tofu's image as a bland source of protein that's good for you is quickly changing. Some Bay Area chefs are making their own tofu and local companies are starting to make it in the traditional Asian way—for daily consumption, rather than packed floating in water or vacuum packed for consumption days or weeks later.

Tofu companies include Hodo Soy, founded by Minh Tsai (Oakland). Tofu-yu, founded by Kevin Strong (Berkeley). Restaurants: Cyrus (Healdsburg). Morimoto (Napa). Plum (Oakland). Hodo Soy also makes Yuba.

Soyatech says the period of greatest growth for soyfoods was 1999 to 2004, when overall sales increased by 12%.

A detailed description is given of how tofu and yuba are made at Hodo Soy's 12,000 square foot Oakland facility.

Three recipes are given. A large color photo shows Jeffrey Lunak, executive chef at Morimoto Napa, adding nigari to hot soymilk as he prepares the restaurant's fresh tofu. Address: Special to the Chronicle, Chronicle columnist, San Francisco.

714. Nordquist, Ted. 2010. Making concentrated soymilk or soybase—with a high solids content (Interview). *SoyaScan*

Notes. Dec. 6. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** It is not difficult or expensive to make soymilk with a high solids content; that is exactly what traditional Japanese tofu makers did when they made the soymilk to be used for making silken tofu (*kinugoshi*). To make soybase, you simply add less water than when making a more dilute product. There are no special tricks.

Note: Concentrated soymilk was also used traditionally to make yuba in China and Japan.

Ever since he was in Sweden in the 1980s, Ted has used the word “soybase” to refer to this concentrated soymilk. He first developed soybase in Sweden for use in making soy ice cream—which is typically made from cream and thus requires a high solids content (11½% solids). Later he continued to make it as the base for other products because it cost less to ship (as in a milk tanker) or store. Today his typical soybase contains 12½% solids—which is the concentration that has the highest yield of solids from the soybean in the soybase. From one gallon of soybase one can get about 2½ gallons of soymilk (containing 5½% solids). For soy yogurt it is diluted down to about 8½% solids.

SunOpta makes a soybase that contains 13½ to 14% solids. But if one wanted to make a soybase with an even higher protein content (16-18% solids), there are only two ways: Using ultrafiltration (UF) or reverse osmosis (RO). Both of these ways are very expensive (they require a large initial investment) and the process can only be run for about a short period of time (6-8 hours) before the equipment must be cleaned—at great expense for chemicals and time (10-12 hours of cleaning time). Ted will produce soybase for 50-60 hours before he stops to clean the equipment. Ted has never heard of using a vacuum to reduce the water content of soymilk. And there is another problem—called “the curve.” As you reduce the water, and your soybase solids get higher and higher, but the protein and oil in your okara also get higher and higher, so you are losing / wasting a lot of nutrients. You soon begin losing money because your water-soluble protein and oil, at a certain point, start going down, even though you are adding more soybeans and less water. Address: WholeSoy & Co., 49 Stevenson St., Suite 1075, San Francisco, California 94105-2975; 660 Vischer Ct., Sonoma, CA 95476. Phone: 415-495-2870.

715. Andoh, Elizabeth. 2010. *Kansha: Celebrating Japan’s vegan and vegetarian traditions*. Berkeley, California: Ten Speed Press. vii + 296 p. Illust. (color photos by Leigh Beisch). Index. 25 x 25 cm.

• **Summary:** A beautiful book, and a major contribution toward understanding Japanese cuisine, culture, and the pervasive spirit of gratitude / appreciation. In Japanese, *kansha* means appreciation or gratitude. Contents: Acknowledgments. Introduction: A historical perspective on *kansha* (*shojin ryori* is vegan), recent developments, putting

theory into practice, practicing *kansha*, meal planning, some final thoughts, a note about language. Rice. Noodles. Stocks and soups. Fresh from the market. The well-stocked pantry. Mostly soy. *Tuskémono* [pickles]. Desserts. A guide to the *kansha* kitchen. A catalog of tools and techniques. A catalog of ingredients [glossary]—with entries that include the following: daikon, edamame, flours (*kinako*), kudzu, herbs, spices and seasonings (*ao nori*, *sansho*, *shiso*, *togarashi*, *wasabi*), *kabocha*, dried beans (*adzuki* [sic], *daizu* {dried soybeans—the most important legumes in the Japanese pantry}), dried soy foods [sic] (*hoshi yuba* {dried yuba}, *koya-dofu* / *kori-dofu*). Dried vegetables from the land (dried *shiitake* mushrooms). Dried vegetables from the sea (*arame*, *hijiki*, *kanten*, *kombu* [konbu]). Dried wheat gluten. *Kasu* (sake dregs). *Konnyaku* and *shirataki*. *Matcha*. *Miso* (red miso, white miso, *genmai miso*). *Mushrooms*. *Natto*. *Nigari*. *Nuka*. *Okara*. *Pickles*. *Rice*. *Roots and tubers*. *Saké*. *Salt*. *Sesame* (seeds, sesame paste, sesame oil). *Soy milk*. *Soy sauce*. *Sweeteners* (*ama-zaké*, *kuro-zato*, *mirin*, *mizu amé*). *Tofu* (firm tofu, silken tofu, grilled tofu, thin fried tofu {*abura agé*}, thick fried tofu {*atsu agé*}).

Tsukemono (pickles). *Umeboshi* (pickled plums). *Vinegar*. *Yuzu*. *Yuba*.

Note: This is the earliest English-language document seen (May 2012) that uses the term “thin fried tofu” to refer to *abura agé* / deep-fried tofu pouches, or the term “thick fried tofu” to refer to *atsu agé* / deep-fried tofu cutlets.

Contains many recipes that use tofu, miso, soy sauce, edamame, *natto*, etc. Address: Japan.

716. Hughes, Holly. ed. 2010. *Best food writing 2010*. Cambridge, Massachusetts: Da Capo; London: Perseus Running (Distributor). xii + 352 p. Recipe index. 21 cm.

• **Summary:** One story (p. 76-80) is titled “Kyoto’s tofu obsession,” by Adam Sachs—from *Bon Appetit* magazine. The writer strives to understand the heart of fresh tofu. Did he use *The Book of Tofu* as his guide?

Fresh tofu restaurants in New York City: EN Japanese Brasserie. In Kyoto: Kinki. *Tousuiro* (also serves *okara*, *yuba*, *oboro-dofu*, and soy-milk ice cream). *Okutan*. *Kichisen* (*yu-dofu*). A tofu maker is *Morioka*. A *yuba* maker is *Yubahan*.

717. Singh, Guriqbal. ed. 2010. *The soybean: Botany, production and uses*. Wallingford, Oxfordshire, UK, and Cambridge, Massachusetts: CAB International (CABI). xii + 494 p. See p. 2. Illust. Map. Index. 26 cm.

• **Summary:** Chapter 1 is “The origin and history of soybean,” by Li-Juan Qiu and Ru-Zhen Chang. In the Introduction we read (p. 2): “The Chinese people are accustomed to eating soybean. Traditional soybean products such as bean curd (tofu), soybean milk, dried rolls of bean cream [dried *yuba* sticks], soy sauce and so on are favoured foods to Chinese people.” Address: Senior Agronomist

(Pulses), Dep. of Plant Breeding and Genetics, Punjab Agricultural Univ., Ludhiana, India.

718. Giblin, Karen; Seibel, Mache. 2011. Eat to defeat menopause: The essential nutrition guide for a healthy midlife—with more than 130 recipes. Cambridge, Massachusetts: Da Capo Press. xviii + 237 p. Foreword by Dean Ornish, M.D. Illust. Index. 23 cm. [26 ref]

• **Summary:** An excellent book for the lay reader by a woman and a man with top credentials in the field. Includes 130 recipes. On page 3 is an “Ode to Soy and Hot Flashes,” by Mache Seibel, M.D.; it says that soyfoods reduce hot flashes and allow women to sleep at night.

Chapter 4 (p. 23-28) is “Understanding soy foods: The perfect food for menopause.” Its contents: Introduction. Soybeans and foods made directly from them (gives a basic description of each): Soybeans (incl. edamame, dry soybeans, canned soybeans), soy flour, soy powder (very similar to soy flour except the soybeans are cooked before they are ground), soy protein isolates, textured vegetable protein (TVP), soy grits, soy sprouts. Soy milk and products made from it: Soy milk, okara, yuba, soy cheese. soy yogurt, tofu. Fermented forms of soy: Tempeh, natto, miso, soy sauce.

Most of these soyfoods are used in the recipes in this book. Tofu is used the most frequently.

Dr. Ornish’s remarkable Foreword begins: “Many people tend to think of breakthroughs in medicine as a new drug, laser, or high-tech surgical procedure. They often have a hard time believing that the simple choices we make in our lifestyle—what we eat, how we respond to stress, whether or not we smoke, how much exercise we get, and the quality of our relationships and social support—can be as powerful as drugs and surgery, but they often are. Often, even better.

“For more than thirty years, I have directed a series of studies showing what a powerful difference changes in diet and lifestyle can make. My colleagues and I at the nonprofit Preventive Medicine Research Institute showed, for the first time, that many diseases, including heart disease, prostate cancer, diabetes, and hypertension, are often reversible, and thus largely preventable.

“We used high-tech, state-of-the-art measures to prove the power of simple, low-tech, and low-cost interventions. We showed that integrative medicine approaches may stop or even reverse the progression of coronary heart disease, diabetes, hypertension, obesity, hypercholesterolemia, and other chronic conditions. We also published the first randomized controlled trial showing that these lifestyle changes may slow, stop, or even reverse the progression of prostate cancer, and may affect breast cancer as well.

“Our latest research shows that changing lifestyle changes our genes in only three months—turning on hundreds of genes that prevent disease and turning off genes and oncogenes associated with breast cancer and prostate cancer,

as well as genes that cause heart disease, oxidative stress, and inflammation. We also found that these lifestyle changes increase telomerase, the enzyme that lengthens telomeres, the ends of our chromosomes that control how long we live. Even drugs have not been shown to do this.” Address: 1. President and founder of the Red Hot Mamas, Bridgewater, New Jersey; 2. M.D., Prof. of Obstetrics and Gynecology and Director of the Complicated Menopause Program, Univ. of Massachusetts Medical School. He lives in Boston, MA.

719. Mangels, Reed; Messina, Virginia; Messina, Mark. 2011. The dietitian’s guide to vegetarian diets: Issues and applications. 3rd ed. Sudbury, Massachusetts: Jones & Bartlett Learning. xi + 596 p. Illust. Index. 23 cm. 1st ed. 1996. 2nd ed. 2004. [342 soy ref]

• **Summary:** Chapter 9, “Soyfoods” (p. 249-89) is excellent. Its contents: Introduction. Isoflavones: Isoflavone content of soyfoods, isoflavone absorption and metabolism. physiologic properties of isoflavones. Asian soy intake. Nutritional composition of soybeans and soyfoods: Protein, fat, carbohydrate, vitamins, minerals (iron, zinc, calcium). Chronic disease prevention and treatment: Coronary heart disease (cholesterol reduction, lipid-independent effects), cancer (breast cancer, prostate cancer), osteoporosis, alleviation of menopausal symptoms, renal function. Controversies: Soy infant formula, cognitive function, thyroid function, fertility and feminization, breast cancer patients, allergy. Intake recommendations.

Table 9-1 (p. 251-52), “Chemical and common names and molecular weights (MW) of the 12 isoflavone isomers found in soybeans” includes the following foods and USDA IDN: Tofu: Firm, firm #2, regular, silken firm, extra firm, extra firm #2. Natto. Soymilk, Miso, Tempeh. Soybeans, raw, US food grade. Soybeans, cooked. Soybeans, raw, Japan. Soybeans, raw, Korea. Soybeans, raw, Taiwan. Soybeans, green, cooked. Soybean curd, fermented. Soymilk skin (foo jook / yuba, cooked). Soymilk skin (foo jook / yuba, raw). Isolated soy protein. Soy protein concentrate: Water washed, alcohol washed. Soyflour: Full fat, defatted.

The Glossary of vegetarian foods (p. 447+) includes: Soyfoods: Edamame, soybeans, soy flour, soymilk, soy nuts, tempeh, textured vegetable protein (TVP, a brand name), tofu. Meat analogs: Commercial meat substitutes, seitan. Milks and dairy analogs: Nondairy cheese, nondairy frozen desserts, nondairy milks, sour cream substitute, yogurt. Address: 1. PhD, RD, LDN, The Vegetarian Resource Group, Maryland; Univ. of Massachusetts, Amherst, Mass.; 2-3. Nutrition Matters, Port Townsend, Washington; Loma Linda University, Loma Linda, California.

720. Vos, Heidemarie. 2011. Passions of a foodie: An international kitchen companion, A to Z. Durham, Connecticut: Eloquent Books. An imprint of Strategic Book Group. 598 p. 26 cm.

• **Summary:** Best-selling author Heidemarie Vos recounts a fascinating story and her journey of putting together the world's first cross-referenced book regarding food-using more than five languages. This cookbook [which contains no recipes] will become an invaluable resource for your kitchen (from the publisher).

The Introduction states: "There are 7922 entries, 300,017 words... based on my own travels to 6 continents and over 40 countries." Note: This is somewhere between a dictionary (in 5+ languages) or brief encyclopedia of food names. It immediately sets the language and cultural context for each word, and ends with broader or narrower terms. For example: "Aburage: Japanese cooking = A fried bean curd... Also see Bean Curd." It contains more than its share of errors and outdated terminology and spellings. It is a "print on demand" book.

It includes: Aburage. Adzuki beans [sic], Agé. Aji Nomoto [sic], see monosodium glutamate. Aka miso—red bean paste. See Miso. Almond milk. Almond oil. Arachide / Arachis. See Peanut. Arachide oil. See Peanut oil. Bean cake, fermented: Chinese cooking, "fu yu" [fermented tofu]. Bean curd, pickled: Chinese cooking. [What is it?]. Bean curd cheese, red: Chinese cooking, "nam yu" or "nan yu" [red fermented tofu]. Bean curd: Oriental cooking. Known as "tofu" in Japanese or "dow fu" in Chinese. Pressed bean curd is "dow fu kon" [doufu-gan, pressed tofu].

"Bean curd, dried [yuba]: Chinese cooking = Known as 'tiem jook' [sweet yuba] / 'fu jook pei', other dialects are 't'ien ch'u' and 'fu pi chi'. It is soybean milk residue, which comes in a thin rectangular sheet or is curled into round sticks. They are usually tan- or cream-coloured with a shiny, glossy smooth texture."

Bean paste, red: Chinese cooking. "Made from soybeans and sugar mashed together then fried and dried out until it resembles sand." Used to fill Chinese moon cakes. Bean sauce, Chinese: Chinese and Asian cookery. Many types including "min see jiong" or "do bahn jiang." Incl. "Black bean sauce." Beans, black: Chinese cooking. "A pulse [sic] known as 'wu dow' / 'wu do' [Black soybeans].

"Beans, black salted fermented: Chinese cooking = Known as 'dow si / dou shih,' used as a vegetable or spice. Known as 'wu dow' dried and salted. They are dull, wrinkled, moist and tender and have an appetising fragrance, yet are pungent with a tangy salty flavor. Used as a flavor enhancer in dark sauces." Keep covered so they do not dry out... "Must be rinsed prior to use to avoid over-salting. Store in a closed jar in the refrigerator after opening."

Bean sprouts: Asian cooking [small green are mung bean sprouts, large yellow soybean sprouts]. Benne seeds: Sesame seeds are used to make sesame oil and tahini (sesame paste). Black beans, Chinese. Also known as 'salted black beans' or 'fermented black beans' and as 'dow si' (Chinese). China beans: See Soya / soy bean. Earth nut: See Peanut. Edamame: Japanese cooking. "Fresh soybean in or out of the

pod." Firm tofu. Fried tofu puffs. Ground nut: See peanut. Hard tofu. Hydrogenated fats. See fats. Miso. Naahm yu: Chinese term. "A cheesy-looking bright red bean curd sauce" [Red fermented tofu]. Nam yu / Nan yu: See Bean curd cheese, red. Shoyu: Japanese cooking. Japanese soy sauce. Soy bean / Soya bean. *Glycine soja*, also known as "'China beans,' 'Butter Beans' and 'Haricot de Java' (French)." Soy bean jam / condiment. See Main see. Silken tofu. Silken firm tofu. Soya oil. Soya sauce. Soy sauce. Tamari soy sauce. Tofu. Tofu tempeh [sic].

Not listed: Amazake. Lecithin. Daitokuji natto. Fermented black beans. Hamanatto. Kudzu. Kuzu. Meat alternatives. Meat substitutes. Milk alternatives or substitutes. Milk, nondairy. Milk, soy. Natto. Seitan. Soy milk. Soy protein concentrate. Soy protein isolate. Soy protein, textured. Tempeh. Teriyaki sauce. Yuba.

Errors: Arame is not also known as "Hijiki." Address: Port Elizabeth, South Africa.

721. Nguyen, Andrea Quynhgio. 2012. Asian tofu: Discover the best, make your own, and cook it at home. Berkeley, California: Ten Speed Press. [viii] + 232 p. Illust. (color photos by Maren Caruso). Index. 24 x 24 cm. [21 ref]

• **Summary:** Another very attractive book and well-written book by Andrea Nguyen. In researching this book, Andrea traveled to many countries in East- and Southeast Asia.

Contents: Introduction: East Asian stronghold (China, Japan, Korea), wavering Southeast Asia (Vietnam, Thailand, Cambodia, Laos, Singapore, Malaysia, Indonesia, Philippines, Myanmar / Burma), South Asian newcomer (India), tofu in America (Samuel Bowen, Benjamin Franklin, Commodore Matthew Perry, Civil War soldiers, Piper & Morse, George Washington Carver, Mildred Lager, World War II), alternative to mainstream (Boys Market in Los Angeles, *Diet for a Small Planet*, *The Book of Tofu*, Jeremiah Ridenour, Los Angeles Tofu Festival), tofu today (United Soybean Board Survey, Hodo Soy, Dong Phuong Tofu [Westminster, Orange County, California]).

Tofu buying guide: Tofu types (tofu blocks {silken, medium, medium firm, firm, extra firm, super firm}, pressed tofu, tofu noodles, tofu skin [yuba] {fresh tofu skin packets = dou fu bao, tofu skin rounds = dou fu pi or fu pi, dried tofu sticks = fu zhu or "tofu bamboo"}, fried tofu {fried tofu slices}, tofu pudding, fermented tofu {red or white}, soy milk).

Note: This is the earliest English-language document seen (Oct. 2012) that uses the term "fresh tofu skin packets" or the term *dou fu bao* in connection with yuba.

Tofu cooking tips: Cutting, draining, frying.

Homemade tofu tutorial (incl. homemade soy milk, soy milk lees, homemade silken tofu, homemade tofu pudding, block tofu, confetti tofu, oboro tofu, zaru tofu, seasoned pressed tofu, tea-smoked pressed tofu, white fermented tofu, frozen tofu, fresh tofu skin, soy-simmered fried tofu).

Recipes—Fresh and satisfying: Snacks and starters. Soothing and soft: Soups and hot pots. Homey and wholesome: Main dishes. Versatile and delicious: Salads and sides. Religion and artistry: Mock meats. Building on traditions: Buns, dumplings, crepes, noodles and rice. Amazing transformations: Sweets and desserts. Basics. Ingredients (glossary). Acknowledgments. Measurement conversion charts.

Note: This book contains many recipes that use meat, poultry, or fish as ingredients. Address: Food writer, Santa Cruz, California.

722. Druckman, Charlotte. 2012. Gimme some tofu skin: The East Asian soybean ribbons are popping up in top kitchens, as noodle-like tangles, crispy chips and more. *Wall Street Journal*. June 2-3. p. D7. Cooking and eating section. • **Summary:** “Tofu skin” is actually yuba, and it can now be found “on the menus of some of the most innovative restaurants in the United States. For example, in San Francisco it is served at Coi’s and Atelier Crenn. Alinea in Chicago was one of the first American restaurants to do something unexpected with yuba.

Food writer Andrea Nguyen says that “Yuba is one of the soybean’s greatest gift to mankind.” She is the author of *Asian Tofu*, a cookbook that was recently released. A recipe from this book, “Spicy yuba ribbons,” is given.

723. Shurtleff, William. 2012. The global value chain for soybeans (Editorial). *SoyaScan Notes*. June 12. • **Summary:** “The value chain is a concept from business management that was first described and popularized by Michael Porter in his 1985 best-seller, *Competitive Advantage: Creating and Sustaining Superior Performance*” The value chain concept can be applied to at various levels of activity, such as a worldwide level, an industry-wide level in a particular country, or at the level of a particular company operating in a specific industry. The key links in a value chain are those points at which value is added to products. Quantitative data are necessary to analyze the amount of value added (Source: Wikipedia at value chain, June 2012).

In the global soybean chain we have identified four major links or points: (1) Soybean production: This is highly fragmented, with hundreds of thousands of farmers, both large and small, growing soybeans. However some of those farmers are organized into groups, often cooperatives (such as AGP in the United States).

(2) Crushing and other soybean processing. Crushing soybeans to make crude soy oil and defatted soybean meal is main way that soybeans are processed. However in East Asia, whole soybeans are also processed into human foods, such as tofu, miso, soymilk, tempeh, etc. Large soybean crushers which operate worldwide include Cargill, ADM, Bunge, AGP, Sanbra (Brazil) etc. Defatted soybean meal is further processed to make animal feeds, soy sauce, etc.

Crude soy oil is further refined to make edible vegetable oil biodiesel, etc.

(3) Transportation / distribution of soybeans and/or soybean products. Major firms (which are vertically integrated) include Cargill, ADM, Bunge, Dreyfus, the Noble Group of Hong Kong, etc.

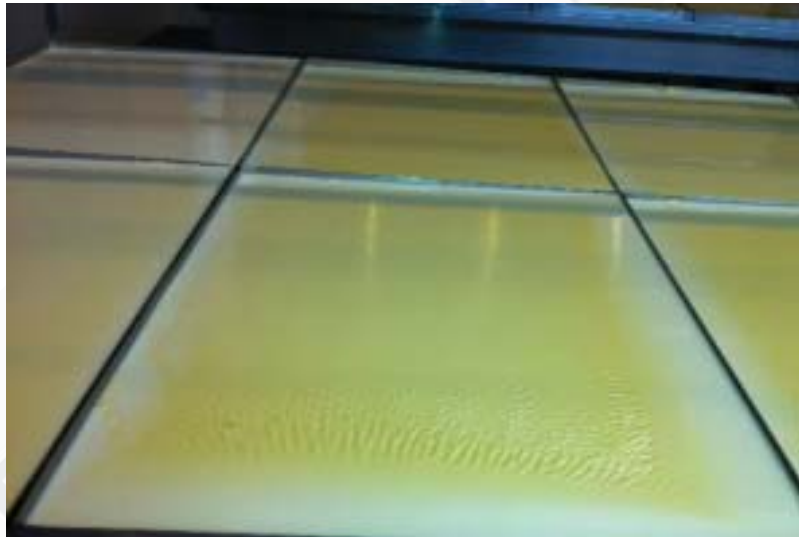
(4) End use / retail: The main end uses for soybeans are: From whole soybeans—human foods, often divided into four types: (a) Traditional East Asian fermented soyfoods, such as miso, tempeh, natto and its relatives. The largest makers are miso makers and natto makers in Japan. (b) Traditional East Asian non-fermented soyfoods, such as tofu, soymilk, edamame, roasted soy flour, yuba. The largest makers are tofu makers and soymilk makers in Japan, Hong Kong, and USA. From defatted soybean meal: animal feeds, soy sauce, modern Western soy protein ingredients: textured soy flour / textured vegetable protein (TVP in ad ADM trademark), soy protein concentrates, textured soy protein concentrates, soy protein isolates, and textured soy protein isolates. The largest makers of animal feeds are the same as the major soybean crushers: Cargill, ADM, Bunge, etc. From crude soybean oil: Refined soybean oil and biodiesel. The largest refiners of soybean oil are the major soybean crushers. From refined soybean oil: Edible vegetable oil, salad dressings, margarine, etc. Address: Founder and owner, Soyfoods Center, Lafayette, California. Phone: 925-283-2991.

724. Tsai, Minh. 2012. Re: Photographs of making yuba at Hodo Soy Beanery. Letter (e-mail) to William Shurtleff at Soyinfo Center, July 3. 1 p.

• **Summary:** Hodo Soy (Oakland, San Francisco Bay Area, California) is one of the few companies in the United States that makes yuba. These photos show the main steps in the process. (1) “Soymilk: To make yuba, it is important to use a thick milk. We use a milk that is 9-10 Brix.” Note: Brix is an approximate measure of dissolved solids in a solution.

(2) “Filling yuba trays: Our yuba trays are 16 x 20 inches and with depth of 1.5 inches. We fill the soymilk to







the rim of the tray and replenish as yuba is harvested and the milk drawn down.

(3) “Nama yuba forming: We use the term ‘nama yuba’ to describe young yuba. Though there are many stages of ‘young-ness,’ we only use one term. This is a photo of yuba sheet that is just beginning to form and not yet matured.

(4) “Mature yuba: This is what we consider mature yuba to look like. Each sheet is roughly 3 oz in weight.

(5) “Yuba line: This is a photo of our yuba tables / line, so folks can see roughly the size of each table. These tables are designed so that the harvesters can walk around each table and harvest efficiently.” There are 11 trays / frames on each side, for a total of 22. Address: Founder, Hodo Soy Beanery, 2923 Adeline Street, Oakland, California 94608. Phone: 510-735-4587.

725. Tsai, Minh. 2012. Making and marketing yuba at Hodo Soy Beanery (Interview). *SoyaScan Notes*. July 4. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** During the past 8 years Hodo Soy has been very effective and innovative in introducing yuba to people in the Bay Area of California. Part of this success has been through effort and part has been (Minh modestly admits) through timing and luck. “We are very fortunate to be in the Bay Area. The only two other places it might work are Los Angeles and Manhattan, New York.”

Yuba is now an important and profitable product for Hodo Soy, accounting for about 20% of total sales. However the yuba tables take up about half of all Hodo Soy’s

manufacturing space.

What are the key’s to yuba’s success for Hodo Soy? First, education. We have worked to educate our customers who are chefs at restaurants about the large amount of labor that goes into making yuba and contributes to its high price (about \$15 a pound). We have also met with chefs in restaurants and explained that 1 ounce of yuba is quite a good serving size; so each serving costs less than \$1.00. And it looks great on the menu and on the dish.” Minh also educates chefs about yuba’s versatility (use it as a wrap, put it in soups, etc.) which enables them to develop recipes. The chefs have developed innovative recipes using yuba and their customers seem to enjoy their creations. Most people really love the taste of yuba. “People think of it as a starch-free, gluten-free noodle. It’s always al-dente; it doesn’t fall apart.”

“I believe that we have been doing more education on tofu and yuba than all the big tofu-makers combined.” Minh does 95% of this education himself—in person. He enjoys this teaching quite a bit, and he knows these chefs personally.

Yuba has brought a lot of positive publicity to Hodo Soy. It has been called everything from “the lingerie of tofu” to “the sashimi of tofu.” Daniel Patterson, chef at Coi restaurant described yuba as tofu’s “elegant and sexy cousin” (New York Times, 6 Aug. 2006). This is important in terms of branding, as the company is known to be the introducer and maker of this new product.

Minh (who has Chinese ancestry) was smart (and innovative) to call the product “yuba” instead of “bean-curd skin”—like most Chinese restaurants. But there was

another reason he called it yuba. “Our research shows that, as far as willingness to pay for food at a premium price, the Japanese are at the top of the list. They know what it is and they realize it is expensive. And the majority of our Asian customers are actually Japanese.” But Hodo Soy’s Asian customer base is still relatively small; Minh’s mission is to introduce high-quality soyfoods to mainstream America.

Hodo Soy sells mostly “mature yuba” (plain fresh yuba) and value-added yuba products, such as Spicy Yuba Strips. From time to time he has requests from high-end restaurants for “nama yuba,” which is soft, formless yuba that is not yet mature and fully formed. Each chef wants a particular texture, so Minh sells it to them on a customized basis—and requires that the chef come to Hodo Soy the first time to make exactly the texture of yuba they want.

Hodo Soy delivers all its own yuba and tofu products; they have four delivery vehicles that deliver to 50-60 accounts in the Bay Area—both restaurants and natural grocery stores; Rainbow Grocery in SF, Tokyo Fish Market, and Berkeley Bowl all carry Hodo Soy’s fresh yuba. They have a “make to order approach” and a restaurant must order 4-5 days in advance. Value added products are sold through chains such as Costco, Whole Foods Markets in Northern California, Andronico’s, and Molly Stone’s.

The two Bay Area restaurants that have done the most to introduce yuba are Coi (Daniel Patterson, in SF’s North Beach) and The Slanted Door (Charles Phan; modern Vietnamese cooking near the Ferry Building). Other restaurants that offer may serve yuba include Cyrus (Healdsburg), The French Laundry (Yountville, California), and Ozumo (Oakland and San Francisco).

Hodo Soy has never done focus groups or taste panels with yuba.

Minh first made yuba in about May 2004 when he was tinkering with Sogo Tofu in San Jose. They had a yuba table (with 10-12 frames) that they weren’t using. Sogo Tofu was initially built as an adjunct to a large Chinese health grocery store—sort of a Chinese Whole Foods. This store (named Sogo) was part of a chain named Marina Foods, which has a handful of stores in the Bay Area. Sogo, the grocery store, has since closed down but the tofu shop continued to operate. Minh asked Sogo Tofu to make yuba for him, then he experimented using this yuba in recipes, and introduced these dishes to his customers at farmers’ markets. The people who owned and operated Sogo Tofu were relatives of Minh’s wife. The three yuba dishes, starting in May 2004, were Soy Omelette, Yuba (Fresh), and Poached Yuba Loaf. Minh quickly learned the people at farmers’ markets really liked these products. They learned about yuba from him, and he learned from them. The first soy product gave them was the Poached Yuba Loaf, followed by Soy Omelette (yuba marinated in soy sauce and a little brown sugar, then pan fried in a little oil). People were generally surprised at the texture and taste, but they found it to be delicious and asked,

“What is it?” He replied, “It’s yuba.” They asked back, “What’s yuba?” So he explained. Eventually they came to want the plain fresh yuba so they could experiment with their own recipes. Another early yuba product was Spicy Yuba Strips (made at Sogo Tofu starting in Dec. 2004); this is still a best-seller at retail outlets for Hodo Soy Minh’s 5th yuba product was Sesame Yuba Strips (made at Sogo Tofu and discovered by accident; the other ingredients were toasted sesame paste / butter, a little brown sugar and soy sauce).

To take a step back: Minh approached tofu-making very much from a Western food processing and food science point of view. He wanted to leave the basic traditional methods (as shown for example, in a flow chart) unchanged but introduce modern equipment to do the work of lifting, pressing, scooping, and slicing, and modern methods for measuring temperatures, times, and Brix, etc. Minh soon realized (in about 2004-05) that he needed to supervise the making of tofu at Sogo Tofu. But he was just a beginner. How can a beginner, in a traditional Chinese family and craft, tell his experiences aunts and uncles to change. “It was an impossible situation. After about 2 years Sogo had reached saturation—in terms of quality, sanitation, good manufacturing practices, and traceability of ingredients. Starting at the end of 2005, our sales for the next 2-3 years basically remained static. In 2006 we decided to build a plant in Oakland, and that took about 2 years.” Minh traveled a lot, learned a lot, visited some tofu companies, and made some mistakes. As Minh prepared to open his tofu plant in Oakland, he realized that he “did not want to hire anyone with legacy tofu experience. I wanted to teach them from the very beginning.”

Minh’s wife, Jean Ku, was not directly involved with the tofu and yuba business at all. But she has been a tremendous supporter by bringing home the income to support the family during the early years. Jean is a top executive at the Energy Foundation—Program Manager for the China Sustainable Energy Program. Although it has been in existence for only 20 years, the Energy Foundation is the biggest contributor to the reduction of carbon dioxide in China. The foundation began with the sole mission of reducing carbon dioxide, and it identified China as the biggest potential culprit. Its founder decided to focus all of its resources on China. So a foundation based in San Francisco has been focused on China’s CO2 problems for 20 years! Amazing. It is responsible for the very progressive energy policy in China today—which is more progressive than that of the U.S. One of the advantages of a dictatorship is that it can move policy much more quickly than is possible in a democracy. The Energy Foundation has learned a great deal about problem solving during these 2 decades and the model has now been expanded to Brazil and India. She is doing exactly what she finds most interesting and important—critical to the future of the planet. “She loves what she does, and she is very grateful, just like I am, that we have work that we love.”

Continued. Address: Founder, Hodo Soy Beanery, 2923 Adeline Street, Oakland, California 94608. Phone: 510-735-4587.

726. Tsai, Minh. 2012. Making and marketing yuba at Hodo Soy Beanery (Continued–Part II) (Interview). *SoyaScan Notes*. July 4. Conducted by William Shurtleff of Soyinfo Center.

• **Summary:** Continued. How is Jean Ku related to Sogo Tofu? Sogo Tofu was operated by the Huang family. Jean's father's family name is (of course) Ku and her mother's maiden name is Huang. Her mother's brother, Steve, is one of the partners of Sogo Tofu; he is an investor only. His wife's sister runs Sogo Tofu—to this day. They are still the same size (2,500 square feet) as when Minh knew them 8 years ago.

Hodo Soy makes sweet yuba (*ama-yuba*, which is rich in natural sugars, but often comes in broken sheets) only at the end of each day. They use this sweet yuba to make a Poached Yuba Loaf. Hodo Soy now makes fresh yuba every day.

Hodo Soy began making soyfoods (mainly tofu and yuba) in Oakland in Aug. 2009. The company moved into an existing building but basically had to gut it in order to install 8,000 square feet of floors, drains, walls, ceilings, etc. for food processing. That took 18 months to finish, and the business didn't grow at all during this time. The equipment / machinery was expensive; but it is not computerized.

John Scharffenberger is only active as the chairman of the board of Hodo Soy; but his association with the company is very important and he brings ideas to the table and helps to determine the direction of the company.

Billy Bramblett comes to work two days a week, six hours a day. He is much more operational. He brought with him a vast experience from his Wildwood days in how to grow a company, and what infrastructures and operational structures need to be put in place. He works with labeling, pricing.

Hodo Soy employs about 30 people; 20 people are in production, and of these, about 45% are hispanic and 45% Asian ancestry. Ten people work in distribution, administration, sales, accounting, etc. Some sell tofu and yuba at farmers' markets. "We will always do farmers markets." "Our most popular yuba product is Spicy Yuba Strips; about 50% of all the yuba we make goes into Spicy Yuba Strips." "We do not have a layer of true managers here. Moreover, we promote internally."

Hodo Soy still has the Google account; they buy a lot of tofu and some fresh yuba. "They can afford it."

We talk about Ken Lee and Soyfoods of America as a different business model selling three types of yuba to Chinese restaurants to all over the United States. But a look at their website shows that today they sell only frozen yuba. Address: Founder, Hodo Soy Beanery, 2923 Adeline Street,

Oakland, California 94608. Phone: 510-735-4587.

727. Berbille, Hervé. 2012. Re: Terminology used for tofu, soybeans, and dried yuba sticks in France. Letter (e-mail) to William Shurtleff at Soyinfo Center, Oct. 22. 2 p.

• **Summary:** For tofu, Hervé (like Paul Claudel) prefers the spelling *tofou* rather than *tofu* in French.

For soybeans, he prefers *soja* rather than "soya," which is used in Quebec and other parts of French-speaking Canada. For "yuba" he prefers either *yuba* or *peau de lait de soja* which resembles *la peau de lait* for the film which appears on the top of dairy milk when it is cooked.

For "dried yuba stick" he believes the best translation would be *baguette de yuba séché*. Address: Bordeaux, France.

728. McDougall, John A.; McDougall, Mary A. 2012. *The starch solution: Eat the foods you love, regain your health, and lose the weight for good!* Emmaus, Pennsylvania: Rodale Press. xx + 348 p. [374 ref]

• **Summary:** This book presents the case against the "Paleo Diet." Dr. McDougall defines starches as follows (p. 7): (1) Grains: Barley, buckwheat, corn, millet, oats, rye, sorghum, wheat, and wild rice. (2) Legumes: Beans, lentils, and peas. (3) Starchy vegetables: Carrots, Jerusalem artichokes, parsnips, potatoes, salsify, sweet potatoes, winter squashes (acorn, banana, butternut), yams. The least processed starches are the best; brown rice is better than white.

"You've probably heard about the benefits of a plant-based diet—one that reduces or eliminates animal foods like meat, dairy, and eggs. This concept does not go far enough. Without the addition of starch, a diet of low-calorie leafy greens like lettuce and kale, crucifers like broccoli and cauliflower, and fruits like oranges and apples will leave you feeling hungry and fatigued" (p. 8).

The Glycemic Index idea is incorrect (p. 160-63).

Soy foods in Asian diets (p. 141). Not all soy foods are the same: The fake ones and the highly refined ones are not eaten in traditional East Asia diets. Those which are eaten are edamame (green vegetable soybeans boiled in their pods), soy milk, soybean sprouts, soy sauce, soy flour, tempeh, tofu, yuba, okara, miso, and natto. "A traditional family in Japan or China gets fewer than 5% of their daily calories from soy." Fake soy foods (highly processed) cause harm (p. 142-44). The most highly processed soy ingredient is soy protein isolates—to be avoided. Concerns over soy lead to changing recommendations—especially for infants (p. 144-45). Which soy foods are healthiest (p. 196). Address: 1. M.D., Both: Santa Rosa, California. Phone: (707) 538-8609.

729. Shuldiner, Joseph. 2012. *Pure vegan: 70 recipes for beautiful meals and clean living*. San Francisco, California: Chronicle Books. 224 p. Illust. (color photos by Emily Brooke Sandor and Joseph Shuldiner). Index. 28 x 23 cm.

• **Summary:** Exquisite! Wonderful writing. Superb photography. Get this book—now! “The only vegan cookbook that celebrates eating and enjoyment rather than emphasizing the politics of a vegan lifestyle,…”

The word “tofu” appears on 38 pages in this book, “soy” on 13 pages, “soy sauce” on 5 pages, and “yuba” on 3 pages. The headnotes to Yuba spring rolls (p. 128-30) states: “Most Westerners aren’t familiar with yuba, but I have a feeling that’s about to change. A traditional food from China and Japan, yuba is the skin the forms on the surface of heated soymilk. It is gently lifted off the simmering soymilk in sheets and either used fresh or dried and then reconstituted. It has a slightly nutty flavor and a chewy texture.” It is available at most larger Asian groceries. If unavailable, packaged egg roll wrappers make an acceptable substitute.

A full-page color photo (p. 129) shows sheets of yuba, a whole gingerroot, and several bottles of soy sauce. Address: Graphic designer, photographer, writer, and cook with a passion, Los Angeles.

730. Spots: Yuba. 2012.

• **Summary:** (a) Sheets of yuba in a clear Japanese soup. (b-c) Fresh yuba rolls. (d) Sheets of yuba at Hodo Soy (Oakland, California) hanging over steaming soymilk. (e) Fillings in a yuba wrapper. (f) Pieces of reconstituted yuba sticks in a soup. (g) Bundles wrapped in yuba. (h) A package of Chinese dried yuba sticks. (i) Dried yuba sticks on a table. (j) A Japanese yuba label. (p-v) Chinese and Japanese characters for doufu pi, doufu i, and yuba—on title page.

731. *SoyaScan Notes*. 2012. Definition of the yuba (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Yuba is the film that forms atop soymilk when it is heated. If you have ever simmered a pot of milk over very low heat or set a bowl of hot milk aside to cool, you have no doubt noticed the thin, delicate film that soon forms on the milk’s surface. The longer it is allowed to set, the firmer and thicker it becomes. And if you have ever tried lifting this film off and tasting it, you may have found it to be soft, warm, and delicious.

In the same way, if fairly thick soymilk is gently heated in shallow open pans at 80-90°C, a cream-yellow, bland flavored film gradually forms on its surface. The films are successively removed from the soymilk surface using a long skewer or chopstick, and hung up on the skewer in racks to dry. Each successive film becomes a little thicker and sweeter than the one before it. In Japan, this delicacy is called yuba. In China, it is called *tofu p’i* or *fuzhu*. In Chinese restaurants it is often called “bean curd skin.” Scientists sometimes refer to it as a “protein-lipid film.”

Fine-quality yuba has been made in America (Los Angeles, California, area) by one company since Feb. 1982. It is sold there in three forms: Fresh frozen sheets, half-dried

sheets, and dried sticks. These products are sold mostly to Chinese restaurants. A large amount of dried yuba, in many different shapes, is also imported to America from East Asia and sold at Asian-American food stores. The dried yuba sheets may also be named bean curd skin, bean curd sheets, or dried bean curd. The twisted u-shaped rolls may be labeled dried yuba sticks or rolls, bamboo yuba, or bean curd sticks. The sweet bottom yuba is called tien chu in Mandarin Chinese, tiem jook in Cantonese, and ama-yuba in Japanese.

Yuba is most widely used as a wrapper for other foods. However small amounts can be added to soups or stir fries, and fresh yuba can be pressed into molds and steamed to make chewy, tasty meatlike products. Deep-fried yuba makes delicious, crisp and crunchy protein-rich chips—which some people prefer to potato chips. Address: Soyfoods Center.

732. *SoyaScan Notes*. 2012. Chronology of Vietnam (formerly divided by Colonial France into Tonkin and Annam in the north and Cochinchina in the south). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** From its beginnings as a distinct nation, Vietnam, which shares its northern border with two provinces of southern China (Yunnan and Guangxi) has been strongly influenced by China. China ruled Vietnam for most of the period from 207 BC to AD 939. 111 BC—The Chinese Han dynasty conquered Nam Viet, a kingdom in what is now northern Vietnam. The northern part of Vietnam was made a province of China in the 1st century BC. During these ten centuries, China introduced such things as Confucianism, Buddhism (later; and its vegetarianism and vegetarian cuisine), architecture, writing, administrative methods—and probably soybeans and soyfoods (such as jiang {*tuong*}, soy sauce, tofu, yuba, etc.), chopsticks, the wok, the art of deep-frying, noodles, and the custom of communal meals at restaurants. Vietnam remained a tributary state to China for much of its history.

From this point until the 1700s, the history of Vietnam remains unclear and controversial—depending heavily on who is writing it.

From about the 7th century until 1832 the kingdom of Champa controlled much of what is today central and south Vietnam. To its north lay Dai Viet (today’s north Vietnam), and to its west lay Angkor and the Khmer empire.

From AD 939 to 1407 there were six successive Vietnamese dynasties—Ngo, Dinh, Early Le, Ly, Tran, and Ho.

The fourth and final Chinese domination (during the Ming Dynasty in China) lasted from 1407 to 1427; in the latter year the Vietnamese handed the Ming occupying army a sound defeat. The Chinese conquered what is today north Vietnam; it was named Annam and its capital was Hanoi. South of Annam was Champa.

The next major dynasty in Vietnam was the Le dynasty (1428-1788), which lasted 360 years. Then came the Tay Son

dynasty (1778-1802), and the Nguyen Dynasty (1802-1945, with its capital in Hue in central Vietnam).

In 1802 Nguyen Anh united the country and called it Vietnam.

The era of European colonialism began in the 1800s. The French, seeking recompense in empire after the loss of Alsace-Lorraine at the end of the Franco-Prussian War (1870-71), moved into Indochina and ruled with an iron hand—while also bringing French culture, food and cuisine (café au lait, French bread, milk, butter, yogurt, etc.) to Vietnamese elites. Conquest by France began in 1858 and ended in 1884 with the protectorates of Tonkin and Annam in the north and center, respectively, and the colony of Cochinchina in the south.

1940-1945—Japan controlled Vietnam during World War II. Occupied by Japan, nationalist aspirations grew stronger. A number of groups formed the Vietminh (Independence) League, headed by Ho Chi Minh, Communist guerilla leader, and his brilliant general Vo Nguyen Giap.

The Empire of Vietnam was a short-lived puppet state of Imperial Japan governing the whole of Vietnam between March 11 and August 23, 1945; its capital was in Hue.

1945 Aug.—The Vietminh forced out Bao Dai, former emperor of Annam and head of a Japanese-sponsored regime. In 1945 Ho Chi Min proclaimed the establishment of the Democratic Republic of Vietnam in Hanoi 1946-1954—France, seeking to reestablish colonial control, battled communist and nationalist forces, but was finally defeated at Dienbienphu on 8 May 1954.

1954 June 4—North Vietnam declares independence from France. 1954 July 21—Cease fire signed in Geneva divided country into north and south along the 17th parallel. Some 900,000 North Vietnamese fled to South Vietnam. 1954 Dec. 29—South Vietnam declares independence from France.

1963—U.S. intervention in Vietnam begins under President John F. Kennedy. 1963 Nov. 2—Ngo Dinh Diem, the first president of South Vietnam, is assassinated in a Saigon suburb; he is replaced with a military junta. 1963 Nov. 22—President Kennedy is assassinated in Dallas, Texas; Lyndon Johnson becomes president. 1964 Aug.—The USA enters the war and begins air strikes against North Vietnam. 1965—First U.S. ground combat troops deployed in South Vietnam. 1969 April—U.S. troop strength peaks at 543,400, then gradual withdrawal of troops begins.

1973 Jan. 27—A cease-fire agreement is signed in Paris by the USA, North and South Vietnamese governments, and the Vietcong—but the agreement was never implemented. Also on Jan. 27 U.S. Secretary of Defense Melvin Laird announced the end of the military draft because no more U.S. troops would be needed since, he believed, the Vietnam War was now over. Note 1. The real end of the war did not come until April 1975, more than two years later! Note 2. The decision to end the U.S. military draft—and to change thereafter to an all-volunteer military—was made by one non-

elected official, without public debate, and for the wrong reason. Note 3. The U.S. started withdrawing its troops from Vietnam soon after signing this cease-fire and finished two months later. In this way they extracted themselves from a terrible war and tried to save face without admitting defeat or surrendering; but they then left their allies, the South Vietnamese, to try to finish the war alone. Of course the U.S. knew they would lose—which they did in April 1975.

1973 March—The last U.S. forces leave Vietnam. 1975 early—Massive numbers of North Vietnamese troops, aided by tanks, launch attacks against the remaining South Vietnamese outposts in the Central Highlands. Government retreats turned into a rout. 1975 April 29—The fall of Saigon and of South Vietnam. The South Vietnamese regime and military surrenders to the Vietcong. The last Americans flee Saigon in a helicopter from the top of the U.S. embassy. America lost the war, if not militarily, at least psychologically and culturally. U.S. combat deaths: 47,369.

1976 July 2—Vietnam is officially reunited by the Communists, with Hanoi as the capital. The first national assembly of both parts of the country meets. The North Vietnam flag, anthem, emblem, and currency are used in the newly unified nation.

1985—Vietnam starts to reduce central control of the economy and introduce some free-market economic reforms. By 1987 many of the old revolutionary followers of Ho Chi Minh were removed from office.

1994 Feb. 3—U.S. announces the end of a 19-year embargo on trade with Vietnam—citing Vietnamese cooperation in returning remains of U.S. soldiers killed in the Vietnam War. 1995 July 11—U.S. extends full diplomatic recognition to Vietnam. Also this year Vietnam joins the Association of Southeast Asian Nations (ASEAN). 1997 May—First U.S. ambassador since the war, Pete Peterson, arrives in Vietnam.

2006—The USA has become Vietnam's top export market, with annual trade over \$6 billion. 2006 June 5—The two countries agreed to strengthen defense ties. 2006 June 27—Communists reputed to be economic reformers became president and prime minister.

733. *SoyaScan Questions*. 2012. Questions about the history of yuba. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** How could the Chinese have chosen such an apparently meaningless word as *doufu pi* (“bean curd skin”) to refer to yuba? Today, yuba is not part of the process for making tofu (or soymilk). Yuba would seem to be more accurately described as “soymilk skin” rather than as “tofu skin.” But could there be some long-lost connection between making yuba and making tofu in ancient China? A number of documents describe this connection. However Dr. H.T. Huang (personal communication, 25 Feb. 2010), an expert on the history of food in China, says: “The names of these products were probably coined by illiterate artisans, so I

wouldn't worry about their lack of logic or elegance.”

Look in early indigenous language documents for the earliest reference to yuba in countries surrounding China where yuba is made or used today, such as Vietnam, Indonesia, Philippines, Cambodia, Thailand, etc.

An asterisk (*) at the end of the record means that SOYFOODS CENTER does not own that document.

A plus after eng (eng+) means that SOYFOODS CENTER has done a partial or complete translation into English of that document.

An asterisk in a listing of number of references [23* ref] means that most of these references are not about soybeans or soyfoods.

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Zaire. *See* Africa–Congo (formerly Zaire). Officially Democratic Republic of the Congo. Also known as Congo-Kinshasa

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Zea mays. *See* Corn / Maize