

**HISTORY OF SOYBEANS AND SOYFOODS  
IN SPAIN AND PORTUGAL (1603-2015):**

**EXTENSIVELY ANNOTATED  
BIBLIOGRAPHY AND SOURCEBOOK**

**Compiled**

**by**

**William Shurtleff & Akiko Aoyagi**



**2015**

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**Published by: Soyinfo Center**  
**P.O. Box 234**  
**Lafayette, CA 94549-0234 USA**  
**Phone: 925-283-2991 Fax: 925-283-9091**  
**www.soyinfocenter.com**

**ISBN 9781928914747** (Spain & Portugal without hyphens)

**ISBN 978-1-928914-74-7** (Spain & Portugal with hyphens)

**Printed 1 May 2015**

Price: Available on the Web free of charge

**Search engine keywords:**

History of soybeans in Spain  
 History of soyfoods in Spain  
 History of soyabeans in Spain  
 History of soy in Spain

History of soybeans in Portugal  
 History of soyfoods in Portugal  
 History of soyabeans in Portugal  
 History of soy in Portugal

Chronology of soybeans in Spain  
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Timeline of soybeans in Spain  
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History of soybeans on the Iberian Peninsula  
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## DEDICATION AND ACKNOWLEDGMENTS

**This book is dedicated to the pioneering Portuguese and Spaniards (often missionaries) who sailed to East Asia and brought back early information about soybeans and soyfoods.**

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

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

University of California at Berkeley: John Creaser, Lois Farrell, Norma Kobzina, Ingrid Radkey.

Northern Regional Library Facility (NRLF), Richmond, California: Martha Lucero, Jutta Wiemhoff, Scott Miller, Virginia Moon, Kay Loughman.

Stanford University: Molly Molloy, who has been of special help on Slavic-language documents.

National Agricultural Library: Susan Chapman, Kay Derr, Carol Ditzler, John Forbes, Winnifred Gelenter, Henry Gilbert, Kim Hicks, Ellen Knollman, Patricia Krug, Sarah Lee, Veronica Lefebvre, Julie Mangin, Ellen Mann, Josephine McDowell, Wayne Olson, Mike Thompson, Tanner Wray.

Library of Congress: Ronald Jackson, Ronald Roache.

Lane Medical Library at Stanford University.

Contra Costa County Central Library and Lafayette Library: Carole Barksdale, Kristen Wick, Barbara Furgason, Sherry Cartmill, Linda Barbero.

Harvard University's Five Botanical Libraries (especially Arnold Arboretum Library): Jill Gelmers Thomas.

French translation: Martine Liguori of Lafayette, California, for ongoing, generous, and outstanding help since the early 1980s. Dutch translation: Sjon Welters. German translation Philip Isenberg,

Japanese translation and maps: Akiko Aoyagi Shurtleff.

Loma Linda University, Del E. Webb Memorial Library (Seventh-day Adventist): Janice Little, Trish Chapman.

We would also like to thank our co-workers and friends at Soyinfo Center who, since 1984, have played a major role in collecting the documents, building the library, and producing the SoyaScan database from which this book is printed:

Irene Yen, Tony Jenkins, Sarah Chang, Laurie Wilmore, Alice Whealey, Simon Beaven, Elinor McCoy, Patricia McKelvey, Claire Wickens, Ron Perry, Walter Lin, Dana Scott, Jeremy Longinotti, John Edelen, Alex Lerman, Lydia Lam, Gretchen Muller, Joyce Mao, Luna Oxenberg, Joelle Bouchard, Justine Lam, Joey Shurtleff, Justin Hildebrandt, Michelle Chun, Olga Kochan, Loren Clive, Marina Li, Rowyn McDonald, Casey Brodsky, Hannah Woodman, Elizabeth Hawkins, Molly Howland, Jacqueline Tao, Lynn Hsu, Brooke Vittimberga, Tanya Kochan.

Special thanks to Tom and Linda Wolfe of Berwyn Park, Maryland. And to Lorenz K. Schaller of Ojai, California.

■ For outstanding help on this history of soy in Spain and Portugal book we thank: Javier Arocena, Steve Carr, Joaquim Castillo, Roger Leysen, Anders Lindner, Dawn Toscano, and Xavier Vilacís.

■ 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

### Brief chronology of soy in Spain and Portugal:

**1603** – In Japan, *Vocabulary of the Language of Japan...* (*Vocabulario da Lingoa de Iapam...*), a Japanese-Portuguese dictionary, is compiled and published by Portuguese Jesuit missionaries in Nagasaki. There are entries for:

*Abura ague* [Abura-agé, deep-fried tofu pouches].

*Amazake* [Amazake], a still-bubbling fermented liquid that has not yet completely become sake; or sweet sake.

*Azuqi or azuqui* [azuki beans].

*Cabe* [Kabe]. Same as tofu.

*Côji* [Koji], a yeast [sic] used in Japan to make sake, or mixed with other things.

*Daizzu, Mame* [Daizu, whole dry soybeans].

*Dengacu* [Dengaku]. Dancing monks or skewered tofu spread with miso and broiled.

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

*Icco* [Ichô]. A way of counting some types of food, such as tofu.

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

*Miso coxi* [Misokoshi], a bamboo strainer used for straining miso. *Misoya*, a shop that sells miso. *Misoyajiru* [Miso-yaki-jiru], a type of soup (*Xiru*) made with tofu and finely sliced daikon radish.

*Misôzsu*, which should properly be called *Zosui*, is a healing food made from vegetables, rice, miso, etc.

*Nattô*, a type of food made by a brief boiling of grains/seeds [graos], which are then put into an incubation chamber (*muro*).

*Nattôjiru*, a soup (*Xiru*) made from natto.

*Tamari*, a very savory liquid taken from miso which can be used for seasoning foods [when cooking] or at table.

*Tôfu – Taufu*. A type of food. It is made into the shape of a cheese by crushing soybeans.

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

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

*Xôyu* [Shoyu, or soy sauce], a liquid which corresponds to vinegar except that it is salty. It is used for seasoning foods. It is also called *sutate*.

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

Note: This is a remarkably complete list of Japanese soyfoods at an extremely early date.

**1633** – The Tokugawa shogunate (upset at Portuguese Christian missionaries intent on making converts and instigating revolts) adopts a policy of national isolation which continues for 221 years until 1854.

**1639** – The Portuguese (mostly Jesuit missionaries) are expelled from Japan. This leaves only the Dutch among the Europeans still trading with Japan.

**1665** – The Spanish friar Domingo Fernández Navarrete, makes the following entry in his journal about tofu in China: “16. Before I proceed to the next chapter, because I forgot it in the first book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call’d *teu fu* [tofu], that is, paste of kidney-beans (*Llamase Teu Fu, esto es, masa de frixoles {frijoles}*). I did not see how they made it. They draw the milk out of the kidney-beans, and turning [curding] it, make great cakes of it like cheeses (*quesos*), as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer. It is eaten raw, but generally boil’d and dressed with herbs, fish, and other things. Alone it is insipid, but very good so dressed and excellent fry’d in butter. They have it also dry’d and smok’d, and mix’d with caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum’d in *China*, and very hard to conceive there should be such abundance of kidney-beans [sic, soy beans]... *Teu fu* is one of the most remarkable things in *China*, there are many will leave pullets for it. If I am not deceiv’d, the *Chineses* of *Manila* [Philippines] make it,...

Born in Spain, the friar served as a Dominican missionary in China (where he observed soyfoods) from 1658 to 1669.

First published in Spanish in 1676, but not published in English until 1704 by Churchill & Churchill. First cited recently in English by T. Hymowitz.

**1790** – Joao de Loureiro, a Portuguese Jesuit missionary and botanist, writes *The Flora of Cochín China, Setting Forth the Plants in the Kingdom of Cochín China. Vol. 2 (Flora Cochinchinensis: Sistens Plantas in Regno Cochinchina Nascentes. Tomus II)*.

In the section titled “Diadelphia. Decandria” (p. 441-42) we read: “Sp. 13. Dolichos Soja, Dau nanh. Hoam téu [huang-tou = yellow bean].” Writing in Latin, he gives a botanical description of the plant, describes its habitat as Cochín China and China, and cites as sources Thunberg, Kaempfer, and Rumphius. Then he adds: Uses: These seeds,



having been boiled or lightly toasted, are quite acceptable to both the stomach and the palate. From them is made the famous Japanese soy sauce called Soia, which the Chinese and Cochinese frequently use for cooking food and stimulating the appetite. There is also produced a white food resembling coagulated milk (*lactis coagulati*) and called Teu hu or Tau hu [tofu] by the Chinese; it is the most widely used food among them. Although it is rather bland by itself, if the appropriate condiments are added, it becomes a food which is neither unpleasant nor unhealthy.

Loureiro published a 2<sup>nd</sup> edition (largely unchanged) in 1793.

**1880** – The soybean is first cultivated in Portugal in the Botanical Garden at Coimbra (in west central Portugal) (Crespí 1935).

**1905 Oct.** – Li Yu-ying, in a paper in French on soymilk in China (*Le lait végétal fabriqué en Chine*) presented to the 2<sup>nd</sup> International Dairy Congress (*2e Congrès International de Laiterie*), states that soybeans have already been imported into Spain. Yet he gives no citation or evidence to support this claim.

**1910?** – In Spain, the first attempts at soybean cultivation were made by the Count of San Bernardo, who cultivated soybeans on his estates at Almillio (in Écija [a city in southwest Spain, 48 miles east-northeast of Seville]) at the beginning of this century (Bottari 1923, p. 2).

**1911** – “The soybean and its uses” (*O feijao soya e os seus usos*), by E.H. Heron, is published (in Portuguese) in the *Repertorio de Agricultura Mozambique, Boletim* (Mozambique Department of Agriculture).

This excellent bulletin is written by a man who shows considerable knowledge of the subject. It is written in both Portuguese and English, with parallel text in two columns on each page. This information is of considerable value at a time when cultivation of soya beans is spreading in Africa. However there is no indication that the soybean has ever been in or been cultivated in Mozambique.

**1916-1918** – A soybean plant with yellow seeds was grown at Montilla (Cordoba) by Don Santiago F. Valderrama and harvested in 1916. Nutritional analysis of the seeds of this plant was conducted in Aug. 1916 at Granada by Mariano Moreno. Soy products, such as soymilk (*leche de Soja*) and various types of tofu (*queso de Soja*) were made from the seeds of these soybeans and exhibited in May 1918 at Cordoba (Valderrama 1920, p. 15).

**1916 ca.** – Soybean cultivation in southeastern Spain is started by Eduardo Noriega (an agronomical engineer, on his farm in Jerez, near Valencia) and by his friend Mr.

Ortiz. They share their yellow and black varieties with other Valencian farmers (Soroa 1941).

**1917** – The Spanish council in Shanghai, don Julio Palencia, sends the Spanish Department of State a study on the cultivation of soybeans, proposing that trials be made to acclimatize the valuable legume to their country (Soroa 1941).

**1920** – *Notes on the Cultivation of Soybeans: Enlarged with Experiments of the Years 1914 to 1919* (*Notas Sobre el Cultivo de la Soja: Ampliadas con las Experiencias de los años 1914 al 1919*), by Santiago F. Valderrama published in Cordoba, Spain (26 p.). The author grew and harvested soybeans at Montilla (Cordoba) in Spain in 1916.

By 1919, soybean production in Spain surpassed 60,000 ha at the initiative of Col. Santiago F. Valderrama (Bottari 1923, p. 2).

**1923** – Soybeans first start to be grown commercially in Portugal, in Ribatejo, for the purpose of providing feed for cattle (Rebelo Hespanha 1943).

**1925-26** – In Lerida, Spain, yellow soybeans from Japan are cultivated by the doctor don Jose Abdal, an illustrious pharmacist. Planted at the end of April, the seeds matured by the end of August (Soroa 1941).

**1931 ca** – In Spain, soybean trials are started by D. Arsenio Rueda (an agronomic engineer), first at Motril and then at Malaga, on parcels of 0.5 ha. He obtained good yields (Soroa 1941).

**1935** – The earliest document that mentions soybeans in Portugal is *The Soybean and its Cultivation* (*La Soja y Su Cultivo*) by Luis Crespí (32-page booklet).

**1943** – *The Soybean: Cultivation and Use of Its Products* (*A Soja: Cultura e Utilizacao dos Seus Produtos*), by Jaime Rebelo Hespanha is published in Lisbon, Portugal (42 p.). It states that soybeans are now being cultivated in Portugal in Alentejo, in Baixo-Minho, and in parts of Estremadura.

**1946 May** – “Five thousand metric tons of soybean oil have been allocated for export to Spain during the April-June quarter, in return for an equal amount of olive oil for export from Spain to the U.S.” This is the earliest known export of soybean oil to Spain from the USA (*Soybean Digest*, May, p. 24).

**1955** – This year, sales of soybean oil from the United States to Spain are 36 million pounds – not much (*Soybean Digest*, Jan. 1961, p. 16).

**1956** – In southern Europe, extremely cold weather during the past two years has sharply cut olive production. Spain and Italy, both olive growing countries, are now importing soybean and cottonseed oil in large quantities. In both countries there is interest in importing whole soybeans to be crushed locally. Italy already has modern facilities adapted to crushing soybeans. Spain has only one such plant (*Soybean Digest*, Aug. p. 18, 33).

**1956 Sept.** – “A huge export market development program in European countries to be implemented with over one-half million dollars in P.L. 480 and soybean industry funds will be the first undertaking of the new Soybean Council of America.” The Council is an industry-wide organization formed in the summer of 1956 (*Soybean Digest*, Sept. p. 26-27).

**1957 June** – Soybean Council of America announces that it has opened an office in Madrid, Spain. Don Javier de Salas has been appointed director general of the Council for Spain. He will be in charge of the Madrid office (*Soybean Digest*, July, p. 6). From the outset, the Council emphasizes cooperation (not competition) with Spanish olive growers and processors, government officials, and consumers.

**1961 Jan.** – Javier de Salas, Spanish director for the Soybean Council of America, says sales of U.S. soybean oil to Spain should reach 500 million pounds in 1960-61, “as compared with 446 million pounds this past year. In 1955, before the Council’s export program began, sales of U.S. soybean oil to Spain were only 36 million pounds” (*Soybean Digest*, Jan. p. 16).

**1964** – Exisa (a solvent extraction plant in Seville) is the first in Spain to crush soybeans (*Soybean Digest*, May 1965, p. 86; Rivera 1964, p. 58-59). Spain, with its crushing industry starting to develop rapidly, begins to import U.S. soybeans (Howard 1989).

**1965** – In Spain, five soybean crushing plants are now making soy oil and soybean meal: (1) Sociedad Iberica de Molturacion, S.A., “Simsa.” Affiliate of Staley A.G. (Madrid 1); (2) Aceites y Proteinas S.A., “Acepresa” (Portugalete, Vizcaya; on the Bay of Biscay in northern Spain); (3) Proteinas y Grasas S.A. (Reus, Tarragona); (4) Exportaciones e Importaciones, S.A., “Exisa” (Sevilla) (5) Industrias de la Soja S.A. Affiliate of Cargill, Inc. (Tarragona). (*Soybean Digest Blue Book* issue, March 1965, p. 108).

**1968** – The Soybean Council of America closes its office in Spain (Pogeler 1968, p. 64, 66-67).

**1969** – “By the end of fiscal 1969 U.S. exports of soybeans and soybean products to Spain were approaching \$100

million – an impressive figure in those days” The soybean program, now the largest run in cooperation with the USDA Foreign Agricultural Service, had been a “spectacular success in Spain.” But conflicts were beginning to emerge.

Increasingly Spain wanted to import soybeans to be crushed in Spain. U.S. farmers and their trade association, the American Soybean Association (ASA), were delighted to see soybean exports increasing. But U.S. soybean crushers were not so happy. They took the position that U.S. soybeans should be crushed in the USA and that only soybean oil and meal should be exported. Their trade association, the National Soybean Processors Association (NSPA), which had more money than ASA, worked to change U.S. export policy. In response, soybean farmers in various states formed new state soybean associations and check-off programs to raise money for ASA. The first state soybean association was organized in Minnesota on 6 Dec. 1962. By late 1964 there were five (Howard et al. 1989, p. 11, 37, 45, 63).

**1969** – In Portugal, one soybean crushing plant is now making soy oil and soybean meal: IBEROL (Sociedade Iberica de Oleaginosas S.A.R.L.; Affiliate of A.E. Staley Mfg. Co., Decatur, Illinois), Alhandra, Lisbon (*Soybean Digest Blue Book* issue, March 1969, p. 107).

**1980** – The earliest known commercial soyfood products in Portugal are tofu and soymilk made by Unimave Tofu, Rua Mouzinho da Silveira 25, 1200 Lisboa, Portugal.

**1984** – The earliest known commercial soyfood products in Spain is Tofu (*Proteina Vegetal de Soja*) made by Zuiatz, Calle Diputacion 5º Piso, Calle Correria 39 Bajo, 01001 Vitoria-Gasteiz, Spain.



## ABOUT THIS BOOK

This is the most comprehensive book ever published about the history of soy in Spain or Portugal. It has been compiled, one record at a time over a period of 35 years, in an attempt to document the history of this interesting subject. 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:

- 44 different document types, both published and unpublished.
- 505 published documents - extensively annotated bibliography. Every known publication on the subject in every language.
- 88 unpublished archival documents.
- 47 original Soyinfo Center interviews and overviews never before published, except perhaps in our books.
- 60 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.

All of the graphics (labels, ads, leaflets, etc) displayed in this book are on file, organized by subject, chronologically, in the Soyinfo Center's Graphics Collection.

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  
 Agric. = Agricultural or Agriculture  
 Agric. Exp. Station = Agricultural Experiment Station  
 ARS = Agricultural Research Service  
 ASA = American Soybean Association  
 Assoc. = Association, Associate  
 Asst. = Assistant  
 Aug. = August  
 Ave. = Avenue  
 Blvd. = Boulevard  
 bu = bushel(s)  
 ca. = about (circa)  
 cc = cubic centimeter(s)  
 Chap. = Chapter  
 cm = centimeter(s)  
 Co. = company  
 Corp. = Corporation  
 Dec. = December  
 Dep. or Dept. = Department  
 Depts. = Departments  
 Div. = Division  
 Dr. = Drive  
 E. = East  
 ed. = edition or editor  
 e.g. = for example  
 Exp. = Experiment  
 Feb. = February  
 fl oz = fluid ounce(s)  
 ft = foot or feet  
 gm = gram(s)  
 ha = hectare(s)  
 i.e. = in other words  
 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)

mm = millimeter(s)  
 N. = North  
 No. = number or North  
 Nov. = November  
 Oct. = October  
 oz = ounce(s)  
 p. = page(s)  
 photo(s) = photograph(s)  
 P.O. Box = Post Office Box  
 Prof. = Professor  
 psi = pounds per square inch  
 R&D = Research and Development  
 Rd. = Road  
 Rev. = Revised  
 RPM = revolutions per minute  
 S. = South  
 SANA = Soyfoods Association of North America  
 Sept. = September  
 St. = Street  
 tonnes = metric tons  
 trans. = translator(s)  
 Univ. = University  
 USB = United Soybean Board  
 USDA = United States Department of Agriculture  
 Vol. = volume  
 V.P. = Vice President  
 vs. = versus  
 W. = West  
 °C = degrees Celsius (Centigrade)  
 °F = degrees Fahrenheit  
 > = greater than, more than  
 < = less than

## HOW TO MAKE THE BEST USE OF THIS DIGITAL BOOK - THREE KEYS

**1. Read the Introduction and Chronology/Timeline located near the beginning of the book; it contains highlights and a summary of the book.**

**2. Search the book.** 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.

**Click on the link to this book and wait for the book to load completely and the hourglass by the cursor to disappear (4-6 minutes).**

**Type [Ctrl+F] to “Find.” A white search box will appear near the top right of your screen.**

**Type in your search term, such as Portuguese or Soybean Council of America.**

**You will be told how many times this term appears, then the first one will be highlighted.**

**To go to the next occurrence, click the down arrow, etc.**

**3. Use the indexes, located at the end of the book.** Suppose you are looking for all records about tofu. These can appear in the text under a variety of different names: bean curd, tahu, doufu, to-fu, etc. Yet all of these will appear (by record number) under the word “Tofu” in the index. See **“How to Use the Index,”** below. Also:

**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."

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

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

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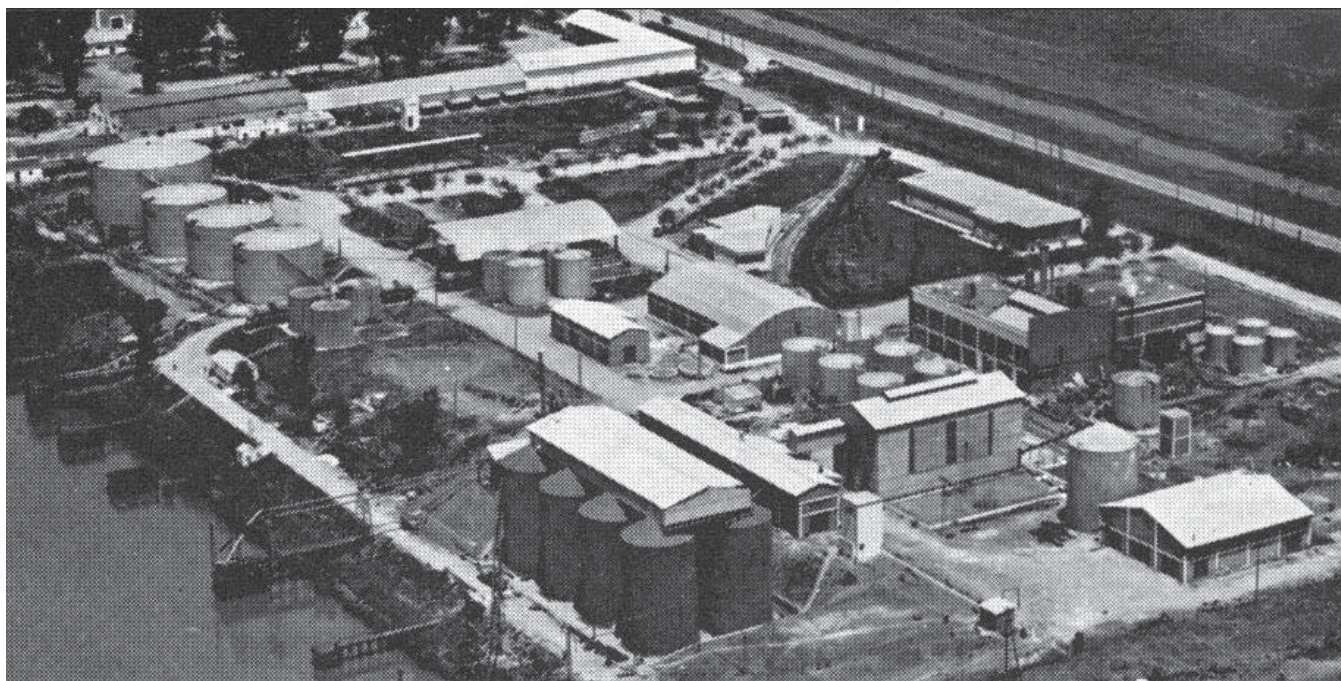




Javier de Salas



ROACH will activate market projects  
in Spain and Italy.



## HISTORY OF SOYBEANS AND SOYFOODS IN SPAIN AND PORTUGAL (1603-2015)

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

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

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

Abura ague. 1. Abura agueno mono. Abura-agé [deep-fried tofu] or abura-agé mono. Things which are deep-fried in oil. Note 1. This is the earliest document seen (April 2013) that mentions fried tofu.

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

Amazaqe [Amazake], a still-bubbling fermented liquid that has not yet completely become sake; or sweet sake. Note 2. This is the earliest Portuguese-language or Western-language document seen (June 2012) that mentions amazake, which it calls “Amazaqe.”

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

Cabe [Kabe]. Same as tofu. A type of food which is made from ground beans. This is a woman’s word. Note 4. This is the earliest document seen (April 2013) that uses the word “cabe” (or “kabe”) to refer to tofu.

Côji [Koji], a yeast [sic] used in Japan to make sake, or mixed with other things. Note 5. This is the earliest European-language document seen (June 2012) that

mentions koji.

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

Dengacu [Dengaku]. Dancing monks (Bôzos). Or tofu which is skewered, and on top of each slice is spread miso; then it is broiled. Note 6. This is the earliest document seen (April 2013) that mentions Dengaku, a type of delicious broiled / grilled tofu seasoned with miso.

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

Icco [Icchô]. A way of counting some types of food, such as tofu.

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

Note 7. This is the earliest European-language (or Portuguese-language) document seen (March 2009) that mentions miso, which it calls *Miso*.

Misocoxi [*Misokoshi*], a bamboo strainer used for straining miso. Note 8. This is the earliest document seen (March 2011) that mentions a *misokoshi*.

Misoya, a shop that sells miso.

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

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

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

Nattôjiru, a soup (*Xiru*) made from natto. Note 9. This is the earliest Portuguese-language document seen (Jan. 2012) that mentions *natto* or *Nattôjiru*. However recall that the “natto” used in Nattôjiru may well be fermented black soybeans.

Saqe (sake, saké).

Tamari, a very savory liquid taken from miso which can be used for seasoning foods [when cooking] or at table. Note 10. This is the earliest document seen (April 2012) that mentions tamari.

Tôfu\*–Taufu. A type of food. It is made into the shape of a cheese by crushing soybeans. \* Note: The sound of the Japanese character for bean (mame) is “tou.” But at that time “taufu” was the typical pronunciation. In other documents



# VOCABVLARIO DA LINGOA DE IAPAM

com adeclaração em Portugues, feito por  
ALGVNS PADRES, E IR.  
MÃOS DA COMPANHIA  
DE IESVS.



COM LICENÇA DO ORDINARIO,  
& Superiores em Nangasacki no Collegio de Ia-  
PAM DA COMPANHIA DE IESVS.  
ANNO M.D.CIII.



it is the same, for example the *Iitsugu Kyoki* (Iitsugu Diary) written during the Tensho period (1573-1586), with entries in 1588, 1591, and 1600. Sometimes they used the characters for “T’ang” (as T’ang dynasty in China) and “cloth,” although they were also pronounced as “taufu.” In this 1603 Portuguese dictionary there appear a number of tofu terms written in the “open sound form” (kaionke): Cabe [Kabe = wall], Dengacu [Dengaku], Fanben, Icchô [One cho or cake of tofu], Vdondôfu, and Yudofu. One exception is the term Aburidôfu.

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

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

Xôyu [Shoyu, or soy sauce], a liquid which corresponds to vinegar except that it is salty. It is used for seasoning foods. It is also called *sutate*. The character *su* means “bamboo mat” [as in “sudare”] and the character *taté* means “to stand up.” Note 11. This is the earliest Portuguese-language document seen (April 2012) that mentions shoyu or soy sauce, which it calls Xôyu.

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

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

Note 12. This is the earliest dictionary of the Japanese language compiled by Europeans.

Note 13. This is the earliest document seen (April 2015) concerning soybeans or soybean products in connection with (but not yet in) Europe or Portugal, and the first such document to mention miso or natto.

Note 14. This is the earliest European-language (or Portuguese-language) document seen that mentions tofu, which it calls *Cabe*, *Tôfu*, or *Taufu*.

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

appears, the identity of the principal European collaborators must remain conjectural.” Address: Nagasaki College of Japan.

2. Rodrigues, Joao. 1604-1608. *Arte da lingua de Iapam* [The art of the language of Japan]. Nagasaqui [Nagasaki], Japan: Collegio de Iapao da Companhia de Iesu. 239 leaves. [Por]\*

• **Summary:** This is the second major dictionary published by Jesuit priests in Japan. Doi (1980) notes that the 1603 dictionary was developed to help the priests understand dialects, lower-class speech, and the confessions of the local common people. The 1604 dictionary focused on the speech of the upper classes and more educated people. Thus the 1603 dictionary collected words the priests needed to understand, while the 1604 dictionary collected those that they wanted to use. The author (whose name has also been written Padre Iaa Rodriguez) lived 1561-1634 (or 1558-1633). A reprint was published in 1969 in Tokyo by Bunkashobô Hakubunsha (479 p.).

In the book *Treatise on Epistolary Style: Joao Rodrigues on the Noble Art of Writing Japanese Letters*, by Jeroen Pieter Lamers (2002, Center for Japanese Studies, Univ. of Michigan, Ann Arbor), Lamers states that this is a grammar (not a dictionary), and is a treasure trove of valuable information on language use in the early 1600s, especially in polite Japanese society. The 1604 work has three main divisions, including syntax and styles of writing. Address: Nagasaki College of Japan.

3. Morga, Antonio de. 1609. *Sucesos de las Islas Philipinas* [Events in the Philippine Islands. 2 vols.]. Mexico City, New Spain: Casa de Geronymo Balli. New ed. published in 1890 in Paris by Garnier Hermanos (xxxvi + 374 p.). [Spa]\*

• **Summary:** Antonio de Morga (lived 1599-1636), a senior Spanish administrator, wrote an early ethnology of the Philippines in 1609. He arrived at his post in Manila in 1595 by an order of the king of Spain. He was the only person in the Philippines who had a doctorate except for persons concerned with the church. He was in repeated sharp disagreement regarding colonial rule until he left the Philippines in 1603. He wrote his book titled *Sucesos de las Isla Philipinas* in Mexico City after he left the Philippines (See also Wikipedia at “Antonio de Morga”).

Morga described the goods traded by the Philippines during his stay. He was especially interested in the trade by sailing ships between Nagasaki (Japan) and Luzon. They would arrive in Luzon each year in about March and at the end of October using the north wind. They returned to Japan in June and July using the southwest winds.

One of the items brought to Japan were kegs or vats of miso (*miso-daru*). The word *miso* is still used in the Philippines today to refer to this fermented soyfood. Address: Alcalde of Criminal Causes, in the Royal Audiencia of Nueva Espana, Mexico City, New Spain.

100. cattij gromoch (Cassow)	
12. poffen lare brood cocht met de poffen lare	30. --
10. balien sackij u 15 maas gde	15. --
10. balien Soije u 27. condrij gde	2. 7. --

4. In't Comptoir Nagasaekij [In the office of Nagasaki]. 1647. Letter to Taiwan / Formosa, Oct. 16. Unpaginated. Handwritten, with signature. [Dut]

• **Summary:** Shipped and loaded in the sailing ship (*fluitschip*) the *Zwarte Beer* [literally “black bear”] sailing from this place with a Bill of Lading of the chiefs [of this office] to Taiwan (*Taijoan*) in consignment send to the honorable Pieter Antonisz, Maritime (*Overwater*), President of the Island of Formosa (*Eijlants Formosa*).

The list of provisions sent includes: “12 pots of hard bread costs together with the pots—f 30:--:--. 10 kegs (*balien / taru*) of sake (*sackij*) of 15 *maas* a piece—f 15:--:--. 10 kegs (*balien*) of Soy [sauce] at 27 *condrijn* a piece—f 2:7:--.

Bibliographic reference in Dutch: NA, NFJ 847, Journal (16-10-1647).

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 847. Boekhoudkundig journaal [National Archives, Prins Wilhem Alexanderhof 20, The Hague. [www.nationaalarchief.nl](http://www.nationaalarchief.nl). The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 847. Journal of bookkeeping].

Note 1. This is the earliest document seen (May 2014) concerning soy and Taiwan.

Note 2. This is the earliest Dutch-language document seen (April 2012) that clearly mentions shoyu or soy sauce, which it calls *Soije*.

Note 3. A *maas* and a *condrijn* are old units of Asiatic currency of account used in China and Japan. The VOC glossary says: 1 *maas* = 7 or 8 stuivers, but in Siam 1 *maas* = 9 stuiver. A *condrijn* is smaller than a *maas*. The symbol “f” stands for guilder, the basic Dutch monetary unit. “f 2:07:8” is read “two guilders, 7 stuivers and 6 pennigen.” One gulden (singular of guilder) = 20 stuivers. One stuiver = 12 pennigen.

Note 4. In 1624 the Dutch established their first trading post on Formosa. They had their colonial capital at Tayoan City (source of the modern name “Taiwan,” and site of present day Anping). This is the earliest document seen (March 2014) that mentions Formosa or Taiwan in connection with soy.

Note 5. This is the earliest document seen (Oct. 2014) concerning involvement by the Dutch or the Dutch East India Co. (VOC) with soyfoods (soy sauce) or soybeans.

Note 6. This is the earliest document seen (April 2012) concerning soy sauce in international trade (imports or exports). In this case exported from Japan to today's Taiwan.

Note 7. This factory (trading post) on Deshima Island

in Japan was owned by the Honorable Dutch East India Company (VOC). Deshima was a small island in Nagasaki harbor, on Japan's southernmost main island of Kyushu. In 1600 the Dutch first made contact with Japan when the Dutch ship *De Liefde* drifted ashore in Usuki Bay in northeastern Kyushu. Many of the original 110 crewmembers had died and only 6 of those remaining could walk ashore unassisted. Two of the survivors went on to earn important places in Japanese history: William Adams and Jan Joosten.

In 1616 European ships were limited to the two ports of Nagasaki and Hirado (an island off the northwest coast of Kyushu, just northwest of Nagasaki).

In 1633 the Tokugawa shogunate (upset at Portuguese Christian missionaries intent on making converts and instigating revolts) adopted a policy of national isolation which continued for 221 years until 1854.

In 1639 the Portuguese were expelled. This left only the Dutch among the Europeans still trading with Japan and their representatives were moved in 1641 from Hirado to the tiny artificial island of Deshima / Dejima built by the shogunate in Nagasaki harbor, where they were kept as virtual prisoners. During this time Japan maintained contact with only two other nations: China and Korea. Chinese merchants were also allowed to trade at Nagasaki, but under strict controls.

By 1639 the Japanese had so successfully closed their doors to the outside world that subsequently Japan all but dropped out of the consciousness of Europeans. The only important exception was the annual Dutch vessel from the East Indies to the Dutch trading post on the island of Deshima in Nagasaki harbor.

During the 1600s and 1700s, the Dutch expanded their network of trading posts throughout Asia, they continued to order provisions from Japan via their tiny but very important trading post at Deshima. Address: Deshima, Nagasaki, Japan.

5. Sterthemius, Pieter. 1656. [Re: Order for provisions]. Letter to E. Joan Boucheljon, head of the Deshima factory [Nagasaki, Kyushu, southern Japan], March 8. Unpaginated. Handwritten, with signature. [Dut]

• **Summary:** Order for: 8 little kegs of good soy [sauce] (8 *balietges goede soeija*), 2 kegs of pickled vegetables (*connemonne [kô-no-mono]*), 2 kegs of good sake (*sackje*),... 2 sake kettles (*sackie ketels*).

Bibliographic reference in Dutch: NA, NFJ 355, ontvangen brieven (8-3-1656). On microfilm.

Location: Nationaal Archief, Den Haag, De Archieven van de Nederlandse Factorij Japan (NFJ); toegangsnummer 1.04.21; inventaris nummer 355 [National Archives, Prins

Wilhem Alexanderhof 20, The Hague. [www.nationaalarchief.nl](http://www.nationaalarchief.nl). The Archives of the Dutch Factory in Japan (NFJ); access number 1.04.21; record number 355. The pages are not numbered]. This letter is written in a letter-book for the administration on Deshima.

Note 1. This is the earliest Dutch-language document seen (April 2012) that uses the word *soeije* to refer to soy sauce or shoyu.

Note 2. This trading post was established by the Portuguese in 1537, by the English at Hooghly in 1651, and by the Dutch at Chinsura in 1656; the towns were united as Hooghly-Chinsura in 1865.

Note 3. This is the earliest document seen (Nov. 2010) concerning soybean products (soy sauce) in India. This document contains the earliest date seen for soybean products in India (1656); soybeans as such have not yet been reported.

Note 4. About the sender: From 1655 to 1658, Pieter Sterthemius was director of the VOC's Bengal settlement. On 17 December 1659 he went back home to the Netherlands as a commander of nine ships.

About the recipient: In *Pieter van Dam's Beschryvinghe van de Oostindische Compagnie*, by F.W. Stapel the entry for E. Joan Boucheljon appears under Jan Boucheljon. In 1641 he left Holland and sailed as an assistant writer to Asia. He worked mostly in Japan, where he was head of the VOC settlement on Deshima. Three times (in 1655, 1657, and 1659) he was a member of the Council of Justice in Batavia. In Holland, he was known as someone with a good reputation. On 24 Jan. 1661 he returned home to Holland as commander of two ships: the *Kalf* and the *Venenburg*. Address: Director of the Bengal Settlement [on the Hooghly {Hooghly-Cinsura} in today's West Bengal, northeastern India, on the Hugli River].

6. Fernández Navarrete, Domingo. 1665. [Journal]. In: Awnsham Churchill and John Churchill, comps. 1704. *A Collection of Voyages and Travels*. London: Published by the author. 4 vols. See vol. 1, p. 251-52. Chap. 13. [Spa; Eng] • **Summary:** This passage in Fernández Navarrete's journal, written in 1665 in Spanish, first published in Spanish in 1676, but not published in English until 1704 by Churchill & Churchill, appears in Chapter 13 of the Journal, titled "His Journey to Che Kiang" (p. 251-52). The following is from the 1704 translation; the unnamed translator may have been Captain John Stevens:

"16. Before I proceed to the next chapter, because I forgot it in the first book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu* [tofu], that is, paste of kidney-beans [*Llamase Teu Fu, esto es, masa de frixoles {frijoles}*]. I did not see how they made

it. They draw the milk out of the kidney-beans, and turning [curding] it, make great cakes of it like cheeses [*quesos*], as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer. It is eaten raw, but generally boil'd and dressed with herbs, fish, and other things. Alone it is insipid, but very good so dressed and excellent fry'd in butter. They have it also dry'd and smok'd, and mix'd with caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum'd in *China*, and very hard to conceive there should be such abundance of kidney-beans. That *Chinese* who has *teu fu*, herbs and rice, needs no other sustenance to work; and I think there is no body but has it, because they may have a pound (which is above twenty ounces) of it any where for a half-penny. It is a great help in case of want, and is good for carriage. It has one good quality, which is, that it causes the different airs and seasons, which in that vast region vary much, to make no alteration in the body, and therefore they that travel from one province to another make use of it. *Teu fu* is one of the most remarkable things in *China*, there are many will leave pullets for it. If I am not deceiv'd, the *Chineses* of *Manila* [Philippines] make it, but no *European* eats it, which is perhaps because they have not tasted it, no more than they do fritters fry'd in oil of *Ajonjoli* [sesame seed] a very small seed they have in *Spain* and *India*, which we have not) which the *Chineses* make in that city and is an extraordinary dainty."

Note 1. Friar Domingo Fernández Navarrete was born in 1618 in Castrogeriz, Spain (he was Castilian), and he died in 1686 on the island of Santo Domingo, where he was Archbishop and Primate of the Spanish Indies. He wrote in Spanish, and served as a Dominican missionary in China (where he observed soyfoods) from 1658 to 1669.

Note 2. This is the earliest document seen in the Western world, or written by a European, that mentions soymilk, although it is described as a step in the process of making tofu rather than as a beverage. It is the third earliest that mentions soya or tofu.

Note 3. This is the earliest Spanish-language document (April 2013) seen that mentions tofu, which it calls *Teu Fu* or *masa de frixoles {frijoles}*. The author is not certain that Chinese in Manila made tofu. If they did, this would be the earliest document seen (April 2013) concerning soybean products (tofu) in the Philippines. This document would also contain the earliest date seen for soybean products in the Philippines (1665); soybeans as such had not yet been reported by that date. Yet if the Chinese were making tofu at this time in Manila, they must have had soybeans. Therefore, this would be the earliest document concerning soybeans in the Philippines. And these soybeans were probably being cultivated at this time in the Philippines.

Note 4. This is the earliest document seen concerning soybeans in connection with (but not yet in) Spain.

Note 5. This may be the earliest document seen (Jan.



2012) concerning soybeans in Southeast Asia. This document contains the earliest date seen for soybeans in Southeast Asia (1665).

Note 6. This is the earliest document seen (April 2013) that mentions smoked tofu. It is interesting that a European mentions smoked tofu, which he apparently saw in China, before it is mentioned in any known Chinese document—in 1680.

Note 7. This is the earliest European-language document seen (Aug. 2007) that mentions sesame oil, which it calls “oil of Ajonjoli.”

Note 8. This is the earliest European-language document seen (April 2013) that mentions dry / dried tofu (“They have it also dry’d”) in China. This probably refers to *doufu-gan* (which literally means “tofu dry” but which we call “pressed tofu”).

Note 9. Navarrete’s 1665 journal is the earliest Spanish-language document seen (Jan. 2000) concerning soy. When it was published in 1676 in Spanish, it was the earliest Spanish-language publication seen concerning soy.

Note 10. For a biography of Domingo Fernández Navarrete (1610-1698), see J.S. Cummins (1962). In the National Union Catalog, his surname is given as “Fernández Navarrete” (i.e. his name is indexed under “F,” not under “N”). In May 1677, long after leaving China, he was nominated Archbishop of Santo Domingo (an early name for the Dominican Republic); he arrived there on 20 Sept. 1677. He learned about food uses of soybeans in about 1665 while he served as a Dominican missionary in China (1658-1669). The island on which he was archbishop, called Hispaniola in English or Española in Spanish, was visited by Christopher Columbus in 1492 and settled in 1493; it became the center of Spain’s rule in the West Indies and the base for Spain’s expansion to the American mainland. Its capital constitutes the oldest continuous European settlement in the Americas. The natives were soon exterminated by the Spanish and replaced by negro slaves. During the 1600s, the western third of the island (known today as Haiti) was occupied by French buccaneers and ceded to France by Spain in 1697, after Navarrete wrote about soya; it came to be known by the French as the colony of Saint Domingue, while the eastern two-thirds of the island where Navarrete lived (Santo Domingo, known today as the Dominican Republic) remained under control by Spain. Hymowitz and Newell (1981) noted that this was the earliest accurate European description seen for the use of soybeans as a food. Thus the first two European references to soyfoods were both about tofu.

For a good biography of Fernández Navarrete, see Cummins 1962.

7. [List of goods to be provided from the various Dutch factories in Asia]. 1671. Colombo. Dec. 20. Unpublished manuscript. [Dut]

• **Summary:** An order from Japan for the year 1672 for the table of the Governor. Includes 12 kegs of soy [sauce].

Location: Nationaal Archief, Den Haag, De Archieven van de Verenigde Oost-Indische Compagnie (VOC); inventaris nummer 13511 [National Archives, Prins Willem Alexanderhof 20, The Hague. [www.nationaalarchief.nl](http://www.nationaalarchief.nl). The Archives of the Dutch East India Company (VOC); record number 13511]. On microfilm.

Note 1. Colombo, a seaport in the Sinhalese kingdom, was settled by Arabs in the 8th century CE, occupied in 1517 by the Portuguese, captured in 1656 by the Dutch, then taken over in 1796 by the English, who first called the island Ceylon.

Note 2. This is the earliest document seen (Nov. 2010) concerning soybean products (soy sauce) in Ceylon; soybeans as such have not yet been reported. Address: Colombo [in today’s Sri Lanka].

8. Fernández Navarrete, Domingo. 1676. *Tratados historicos, politicos, ethicos, y religiosos de la monarchia de China...* [An account of the empire of China, historical, political, moral, and religious]. Madrid, Spain: En la Imprenta Real, por Juan Garcia Infancon. A costa de Florian Anisson, Mercador de Libros. [18] + 518 + [25] p. See p. 347-48. 30 cm. [Spa]

• **Summary:** This is the earliest published Spanish-language edition of Fernández Navarrete’s journal, written in 1665. It was printed/published in 1676 in Madrid by Juan Garcia Infancon. Book VI (*Tratado sexto*), titled “The author’s travels” [1646-1674] (*De los viages, y navegaciones que el autor deste libra ha hecho*) begins on p. 289. We are interested in Chapter XIII, titled “My journey to Che Kiang and stay there till the persecution,” which begins on p. 344. We will give below an exact transcription of part of this 17th century Spanish document, but we will adapt the original letter forms to their contemporary equivalents. Near the end of this chapter, Part 16 (p. 347) begins: “*Antes de passar al capitulo siguiente, escribo aqui con breuedad [brevedad], por averseme [averme] olvidado in en Tratado primero, el manjar usadisimo, comunisimo, y muy barato de que abunda toda la China, y que comen quantos ay en aquel Imperio, desde el Emperador, hasta el China mas ordinario, el Emperador, y señores, por regalo, la gente ordinaria por sustento, y necesidad. Llamase Teu Fu, esto es, masa de frixoles [frijoles]. El modo come se haze [hace] no le vi, sacan la leche de los frixoles, y quaxada [cuajada] hazen [hacen] uno como quesos tan grandes como un arnero, y de gruesso cinco y seis dedos. Toda la masa tan blanca como la mesma nieue [nieve]. Tiene la vista quanto se puede desear.*”

The following translation is from A. Churchill and J. Churchill, comps. 1704. *A Collection of Voyages and Travels* (London): “Before I proceed to the next chapter, because I forgot it in the first Book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in,



and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu*, that is, paste of kidney-beans [*masa de frixoles*]. I did not see how they made it. They draw the milk out of the kidney-beans, and turning [curding] it, make great cakes of it like cheeses, as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer."

Note 1. This is the earliest published Spanish-language document (April 2013) seen that mentions tofu, which it calls *Teu Fu*; the author refers to soybeans as simply *frijoles*.

Thanks to Javier Alvarez-Mon of Spain, a student and employee at the Graduate Theological Union Library in Berkeley, for help in transcribing and interpreting this passage in old Castilian (the language of Castile—an ancient kingdom in central and northern Spain—that became the modern official and literary language of Spain). Javier notes that today in Spain beans are no longer called *frijoles*. Rather, they are called *judías* (pronounced hu-DEE-as), a word apparently (for unknown reasons) related to the word "Jews."

Note 2 This is the earliest Spanish-language document seen (Aug. 2013) document seen that mentions soymilk, which it calls *la leche de los frixoles*.

For a good biography of Fernández Navarrete, see Cummins 1962. He was born in 1618 in Castrogeriz, Spain (he was Castilian), and he died in 1686 on the island of Santo Domingo, where he was Archbishop and Primate of the Spanish Indies.

9. Fernández Navarrete, Domingo. 1704. An account of the empire of China, historical, political, moral, and religious. Vol. 1. In: Awnsham Churchill and John Churchill, comps. 1704. A Collection of Voyages and Travels: some now printed from original manuscripts,... London: Published by the author. 4 vols. 424 p. See p. 251-52. Chap. 13. [Eng]

• **Summary:** The subtitle of the entire volume reads: "Some now printed from original manuscripts. Others translated out of foreign languages, and now first pub. in English. To which are added some few that have formerly appear'd in English, but do now for their excellence and scarcity deserve to be reprinted."

At the bottom of the title page of this chapter is written: "Written in Spanish by R.F.F. Dominick Fernandez Navarrete [sic, Navarrete], Divinity Professor in the College and University of St. Thomas at Manila, Apostolick Missioner in China, Superior of those of his Mission, and Procurator General at the Court of Madrid for the Province of the Rosary in the Philippine Islands, of the Order of Preachers." Domingo Fernández Navarrete lived 1610-1698. Many curious observations are contained in this work, which is a translation of *Tratados historicos, politicos, ethicos, y religiosos de la monarchia de China* (1676). In this

collection it appears as the first item in Volume I, which bears out the tendency for travel literature of this period to be of less significance for geography and history than for literature. The name of the translator is not mentioned, but Cummins (1962, p. cxvi) speculates that it may have been Captain John Stevens. The *Tratados* appears in all the Churchill editions.

The author's exact description of tofu in China, which first became available in English in 1704 in this book as compiled/edited by Churchill and Churchill is as follows:

"16. Before I proceed to the next chapter, because I forgot it in the first book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu*, that is, paste of kidney-beans [*Llamase Teu Fu, esto es, masa de frixoles {frijoles}*]. I did not see how they made it. They draw the milk out of the kidney-beans, and turning it, make great cakes of it like cheeses, as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer. It is eaten raw, but generally boil'd and dressed with herbs, fish, and other things. Alone it is insipid, but very good so dressed and excellent fry'd in butter. They have it also dry'd and smok'd [dried and smoked], and mix'd with caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum'd in *China*, and very hard to conceive there should be such abundance of kidney-beans. That *Chinese* who has *teu fu*, herbs and rice, needs no other sustenance to work; and I think there is no body but has it, because they may have a pound (which is above twenty ounces) of it any where for a half-penny. It is a great help in case of want, and is good for carriage. It has one good quality, which is, that it causes the different airs and seasons, which in that vast region vary much, to make no alteration in the body, and therefore they that travel from one province to another make use of it. *Teu fu* is one of the most remarkable things in *China*, there are many will leave pullets for it. If I am not deceiv'd, the *Chineses* of *Manila* [Philippines] make it, but no *European* eats it, which is perhaps because they have not tasted it, no more than they do fritters fry'd in oil of *Ajonjoli* ([sesame seed] a very small seed they have in *Spain* and *India*, which we have not) which the *Chineses* make in that city and is an extraordinary dainty."

Note 1. This is the earliest English-language document seen (Feb. 2006) that uses the term "kidney- beans" to refer to soybeans.

Note 2. This is the earliest English-language document seen (April 2013) that uses the word "teu fu" (or "teu-fu") to refer to Chinese-style tofu, or that uses the word "cakes" or "cheeses" ("make great cakes of it like cheeses") in connection with tofu. This is also the earliest English-language document that mentions tofu in connection with

A N  
A C C O U N T  
O F T H E  
Empire of C H I N A,  
*Historical, Political, Moral and Religious.*

A  
Short DESCRIPTION of that Empire, and No-  
table Examples of its Emperors and Mini-  
sters.

A L S O  
An ample Relation of many remarkable Passages, and things  
worth observing in other Kingdoms, and several Voyages.

There are added  
The Decrees of Popes, and Propositions defined at *Rome* for  
the Mission of *China*; and a Bull of our most Holy  
Father *Clement X.* in favour of the Missioners.

Written in *Spanish* by the R. F. F. *Dominick Fernandez Navarette*, Divinity  
Professor in the College and University of *St. Thomas* at *Manila*, Aposto-  
lick Missioner in *China*, Superior of those of his Mission, and Procurator  
General at the Court of *Madrid* for the Province of the Rosary in the  
*Philippine Islands*, of the Order of Preachers.

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Printed for HENRY LINTOT; and JOHN OSBORN, at the *Golden-Ball* in *Pater-  
noster Row*.

China. Benjamin Franklin in London read the English translation and in 1770 wrote his friend John Bartram in Philadelphia, Pennsylvania, about tofu and Chinese Garavances / Caravances.

Note 3. This is the earliest English-language document seen (April 2013) that mentions smoked tofu or that uses the word “smoked” (actually smok’d) in connection with tofu.

Note 4. This is the earliest English-language document seen (May 2011) that mentions sesame seeds, which it calls *Ajonjoli*.

Note 5. This is the earliest English-language document seen (April 2013) that mentions dry / dried tofu (“They have it also dry’d”) in China. This probably refers to *doufu-gan* (which literally means “tofu dry” but which we call “pressed tofu”).

Note 6. This is the earliest book chapter seen (Oct. 2014) that mentions soy.

For a good biography of Fernández Navarrete, see Cummins 1962. Address: Divinity Professor in the College and University of St. Thomas at Manila, Philippines. Apostolick Missioner in China.

10. Osbeck, Per. 1757. *Dagbok ofwer en Östindisk resa åren 1750, 1751, 1752. Med anmärkingar uti naturkunnigheten, främmande folkslags språk, seder, hushållning, m. m.* [Voyage to the East Indies in the years 1750, 1751, 1752...]. Stockholm: Tryckt hos L.L. Grefing. 4 + 376 + [16] p. Illust. 14 cm. German edition published in 1765, English in 1771. [Swe]\*

• **Summary:** See the English translation of the book made in 1771. Page 358: *Dolichos sinensis*—by the Chinese called Ta-o—*Diadelpia decandria*.

Note: Osbeck lived 1723-1805. A photostat copy of the original is in the library of the Arnold Arboretum and in the rare book room of the University of Illinois (Champaign / Urbana).

11. Bowen, Samuel. 1767. An account of the Luk Taw, or Chinese vetches, introduced into Georgia from China by Mr. Samuel Bowen, as appears by a certificate\* to the Society of Arts, &c. from Henry Yonge, Esq; Surveyor General of Georgia. *Gentleman's Magazine (London)* 37:253. May. Reprinted in *Lloyds Evening Post & British Chronicle*. May 8-11, 1767. 20:443. And in *The London Evening-Post*, May 5-7, 1767, p. 1, col. 1. And in *Royal Magazine*, 6 May 1767, p. 276-77. And in *Universal Magazine*, May 1767, p. 266.

• **Summary:** “The Chinese use these vetches for the following purposes—From them they prepare an excellent kind of vermicelli, esteemed by some preferable to the Italian; nothing keeps better at sea, not being subject to be destroyed by the weevil [weevil].

“In Canton and other cities of China, they are used for sallad, and also boiled like greens, or stewed in soup, after they have been prepared in the following manner: They put

about two quarts of the vetches into a coarse bag, or hair-cloth bag, that will hold about a peck [2 gallons], and after keeping them in it a little time in warm water, they lay the bag on [a] flat grating, or a wooden lattice, placed about half way down a tub; then every four hours they pour water on them, and in about 36 or 40 hours they will have sprouted about 3 inches in length; they are then taken out and dressed with oil and vinegar, or boiled as other vegetables.

“At sea, where fresh water is valuable, they place a cock in the bottom of the tub, and draw off the water that drains from them to moisten them again, so that none is lost.

“Mr. [James] Flint and Mr. Bowen having found them an excellent antiscorbutic prepared in this manner, was a principal reason for his introducing them into America, as it would be a most valuable remedy to prevent or cure the scurvy amongst the seamen on board his majesty’s ships.

“These vetches are also of great use in warm countries where grass is scarce, as you may soon raise most excellent fodder for your cattle, which may be given to them either green or made into hay, and not thrashed.

“In warm climates they yield four crops a year, each crop will ripen in 6 weeks; they grow erect in tufts from 18 inches to two feet high.”

Note 1. The certificate referred to in the title appears as a sidebar below the article and is cited separately as letter from Henry Yonge to Dr. Templeman dated 23 Dec. 1766. Note that Yonge is Surveyor-General of Georgia.

See also the separate record for the letter from Peter Templeman to Samuel Bowen in thanks for the sample of Chinese Vetches.

Note 2. This is the second earliest document seen (Jan. 2014; one of two documents) that clearly refers to soybeans in Georgia, or the thirteen colonies (which became the United States of America in July 1776), or the cultivation of soybeans in Georgia, or the USA. This document contains the earliest date seen for soybeans in Georgia, or the thirteen colonies (which later became the United States of America), or the cultivation of soybeans in Georgia, or the USA (1765). The source of these soybeans was China, whence Samuel Bowen brought them to Georgia.

Note 3. This is also the second earliest document seen (Sept. 2014) that mentions cultivation of soybeans in the Western world (including Europe).

Note 4. If Bowen brought 1 pound of soybeans from China and if Yonge planted at the rate of 1 bushel (60 lb) to the acre, he would have needed only one-sixtieth of an acre to grow the first generation of seed. Since one acre contains 43,560 square feet, Yonge would have needed only 726 square feet, or a square plot about 26 feet on a side. If he got a yield of 21 bushels/acre (a reasonable estimate), and saved one bushel to plant the next generation, he would be able to multiply his original seed 20-fold with each generation. Thus, 20 lb after 1 generation, 400 lb after 2 generations, and 8,000 lb after 3 generations—which would have been enough



to start making soy sauce in the late fall—an excellent time of year.

Note 5. This is the earliest document seen (July 2014; one of two documents) that uses the term “Chinese vetches to refer to soybeans. It is also the earliest document seen (July 2014) with the term “Chinese vetches” in the title. The typical vetch plant, a forage legume, looks neither like a soybean or a mung bean; it usually has many leaflets per leaf.

Note 6. This is the earliest document seen (July 2014) that uses the term “Luk Taw” to refer to soybeans. Talk with Dr. Eugene Anderson (Prof. of Anthropology at Univ. of California, Riverside, California), an expert on food in China. 2003. July 8. The term “Luk Taw” means “green bean(s)” in Cantonese; in Mandarin (pinyin) the term would be *lūdou*. It probably refers to the mung bean. The four most popular ways of using mung beans today in southern China (in descending order of popularity) are: As sprouts (served in many ways), as a source of starch to make thin transparent noodles / vermicelli known as beanstarch or peastarch noodles (*fensi*), boiled with water until they form a thick gruel which is served as a “cooling” soup, and (rare) made into a curd somewhat like tofu (Dr. Anderson has heard of but never seen mung bean curd). Dr. Anderson thinks that this article clearly seems to be talking about mung beans rather than soybeans. The first two paragraphs of the article describe how Luk Taw are used to make vermicelli and sprouts—a perfect fit with mung beans but not with soybeans. It is also surprising that soy sauce is not mentioned as a way of using this crop—since that was the main use to which Samuel Bowen later put his soybeans. Talk with Dr. Wang, Head of the Chinese Section, Library of Congress. 2003. July 8. Dr. Wang agrees with everything said by Dr. Anderson.

Talk with Prof. Ted Hymowitz. 2008. Nov. 12. Samuel Bowen brought soybeans back from China, but he clearly didn’t know what the correct name of these seeds or of the plant they came from. He didn’t know the difference between a soybean and a mung bean, or between their respective plants. But the seeds he sent to the American Philosophical Society were clearly soybeans. When talking to Henry Yonge he called the plant “Luk Taw, or Chinese vetches,” but after that he stopped using the term “Luk Taw” and settled on “Chinese vetches,” a term which he apparently coined.

Note 7. If this article refers to sprouted soy beans (as we think it does), this would be the earliest English-language document seen and the earliest document seen (Nov. 2008) in the Western world that mentions sprouted soy beans or soy bean sprouts; it says that the vetches “will have sprouted about 3 inches in length...” It would also be the earliest document seen that refers to the antiscorbutic property of soy bean sprouts—later called vitamin C. Both soy-bean sprouts and mung bean sprouts are good sources of essential vitamins; however mung bean sprouts contain about 80% more ascorbic acid per 100 gm (18 mg vs. 10 mg) than soybean sprouts (Duke, James A. 1981. *Handbook*

*of Legumes of World Economic Importance*). Moreover, the word “sallad” meant the same thing in Bowen’s day that “salad” means today—fresh greens and vegetables topped with a little oil, etc.

Note 8. This is the earliest document seen (Oct. 2004) that mentions soybean hay.

Note 9. This is the earliest document seen (Sept. 2000) that mentions James Flint, who was a British interpreter in China and a close friend of Samuel Bowen. Flint was imprisoned by the Chinese at Macao from Dec. 1759 to Nov. 1762, then banished forever from China by the Emperor Ch’ien-lung. Bowen named his first son Samuel Flint Bowen and his second son James Flint Bowen. They were born in Savannah, Georgia, in 1769 and 1770 respectively.

Note 10. This is the earliest English-language document seen (Nov. 2002) that uses the term “erect” to describe the soybean plant.

Note 11. This is the earliest document seen (Jan. 2003) that mentions the word “fodder” in connection with soybeans. Address: Surveyor-General, province of Georgia, Savannah, Georgia.

12. Ekeberg, Charles Gustavus [Ekeberg, Karl Gustaf]. 1771. A short account of the Chinese husbandry. In: Peter [Per] Osbeck. 1771. A Voyage to China and the East Indies... Translated from the German by John Reinhold Forster. Vol. 2. London: Printed for Benjamin White. 367 p. See p. 267-317. [Eng]

• **Summary:** For details, see Osbeck 1771. Address: Captain of a ship in the Swedish East India Company’s service.

13. Osbeck, Per. 1771. A voyage to China and the East Indies, by Peter Osbeck ... Together with a voyage to Surat, by Olof Toreen ... and an account of the Chinese husbandry, by Captain Charles Gustavus Ekeberg. Translated from the German by John Reinhold Forster. Vol. 1. London: Benjamin White. See vol. 1, p. 73, 77, 218, 253, 304-05. Original edition published in 1757 in Swedish. [Eng]

• **Summary:** Note 1. All of the following passages were written in 1751.

In Canton, China: “Fish cut to pieces were carried about for sale on little tables, which hung on poles as described above: the same was done with bacon, and *Fdaufu* [tofu], a dish which is like our sweet cheese, but which was prepared of Chinese beans (*Dolichos Chinensis*)” (p. 218).

China: “Soya, or the *Tyong-yao* [*jiangyou*] of the Chinese, (*Dolichos Soja* Linn.) the Japan Soya is better and dearer than the Chinese. For its preparation see *Kæmph*. Amoen. p. 839. and likewise *Soja Dolichos*, *Flor. Zeylan*. 354. It was sold the katty for three kanderins” (p. 253).

Note 2. This is the earliest English-language document seen (Feb. 2007) that uses the word “Soya” in connection with the soybean or with soy sauce.

Note 3. This is the earliest English-language document



seen (April 2012) that uses the word “Japan Soya” to refer to soy sauce, probably made in Japan. As of Feb. 2012, the term “Japan Soya” (referring to soy sauce) appears in this database three times from 1771 to 1907.

“Fdaufu, or *Tou-fu* [tofu], which has been mentioned on page 218, was sold by pieces in several places. The *Chinese* shewed me a sort of small pease, which they call *U-ang-teo* [huangdou = “yellow bean”], and of which cheese [tofu] is said to be made, though the name gives reason to conjecture that it has been made from *Tao*, which are the *Chinese* beans, or *Callvanses*.” (p. 305).

Note 4. This is the earliest English-language document seen (April 2013) that uses the word “Fdaufu” (or “fdou-fu”), or the term *Tou-fu* to refer to tofu. Thus, Merriam-Webster correctly says (July 2014) that the earliest known use of the word “tofu” was in 1771.

Non-soy: “Spain, March the 6th, 1751. On my arrival at Cadiz [a seaport and province in southwest Spain], I saw the *Hedysarum coronarium*, or French honey suckle, in plenty. The Spaniards call it *Soya*, and the French *Saint Foin* (Note: What we call St. Foin in England is *Hedysarum Onobrychis*; the *Hedysarum Coronarium* is planted for ornament in our gardens); it was brought to town in great bundles as food for the cattle (p. 77).

Note 5. This plant called Soya in Spain is probably not the soybean.

“*Callvanses (Dolichos Sinensis)* (Footnote: *caule erecto ramosissimo, pendunculis erectis multifloris, leguminibus pendulis; Chinensibus Tao*). They are planted on dry hills, and treated like dwarf kidney beans. They do not grow high, and therefore do not much want to be supported; this however is done in some places, and especially where they stand in the open fields... These beans are of the smallest kind, and are quite white except the germen [hilum], which is black, but white in the middle. The *Europeans* buy them in great quantities, and make use of them in their return from China instead of pease. They have thin husks and are very palatable. A katty, which answers to a pound we use for grocery, was sold for two kandarin, or about three stivers” (p. 304). [Note 6. According to *Index Kewensis* and *Hortus III*, *Dolichos sinensis* (later named *Vigna sinensis* and now named *Vigna unguiculata subsp. sesquipedalis*) is the yard-long bean or asparagus bean, a subspecies of the cowpea.]

“*Lack-Tao* [Luk Taw or mung bean] (Footnote: *Phaseolus Max, Mungo Persarum*) is the *Chinese* name of another sort of beans, or pease, which are much less than our wild vetches. The plant itself grows like the former... With these pease they feed the parrots. Among the many seeds which I brought to *Sweden*, was a kind of small green pease, which was so nicely eat up by the worms at my arrival, that nothing but the husks were left, which served as a nidus [nest or breeding place] to the little beetles, with which they were almost filled” (p. 304-05).

The author: Peter Osbeck, a Swede, lived 1723-1805.

He was a pupil of the great Linnaeus and he generally used botanical terms used by Linnaeus. In 1750 he set out on a journey to China as chaplain to a Swedish East Indiaman, *The Prince Charles*, which visited Java and southern China, and returned to Gothenburg, Sweden, on 26 June 1752. Osbeck was a zealous naturalist and brought home a rich collection of natural objects, chiefly Chinese specimens, for during his long stay at Whampoa and Canton he had ample opportunity to collect. All of his collections he placed in the hands of Linnaeus, who described the plants in his *Species Plantarum*, published a year after Osbeck’s return. Osbeck’s original account of his voyage appeared in 1757 in his native language, Swedish, titled *Dagbok öfver en ostindisk resa*.

The book: Linnaeus is indebted to this book for the greater part of the Chinese plants and animals he described. All of the 244 Chinese specimens collected by Osbeck belong to the neighborhood of Canton. Most of the plants Linnaeus knew from China were those collected by Osbeck, but Linnaeus seems to have been under the mistaken impression that Osbeck’s plants came from India, a place that Osbeck never visited. Strangely, most of the systematic botanists who compiled general systematic works on botany after Linnaeus (Lamarck, Willdenow, Sprengel, de Candolle, Kunth, etc.) incorrectly referred to Linnaeus rather than to his source, Osbeck (Bretschneider 1880, p. 88-91).

Bretschneider (1880, p. 116) notes: “The third account of Swedish naturalists in China translated by John Reinhold Forster, is a treatise on *Chinese Husbandry* by Charles Gust. Ekeberg. Ekeberg was Captain of a Ship in the Swedish E.I. [East India] Company’s service. We know from Sparrmann’s brief account of his voyage to China that Ekeberg was captain of the *Navarcha* and that his ship arrived in Canton Aug. 24 in 1766. It was at this place that Ekeberg made his observations on Chinese husbandry, on which subject he subsequently published a very interesting account, of which I shall give an abstract. It seems that Ekeberg had previously visited Canton, about 1762.”

Note 7. This is the earliest English-language document seen (Oct. 2010) that uses the word “husbandry” in connection with animals. Address: A Swede and pupil of Linnaeus, he traveled in China, arriving in 1751.

14. Loureiro, Joao de. 1790. *Flora Cochinchinensis: sistens plantas in regno Cochinchina nascentes*. Tomus II. [The flora of Cochin China, setting forth the plants in the kingdom of Cochin China. Vol. 2.]. *Flora Cochinchinensis: sistens plantas in regno Cochinchina nascentes*. Tomus II. Ulyssipone [Lisbon], Portugal. p. 433-884. See p. 441-42, 522-24. 27 cm. [Lat]

• **Summary:** In the section titled “*Diadelphia. Decandria*” (p. 441-42) we read: “Sp. 13. *Dolichos Soja*, *Dau nanh*. *Hoam téu* [huang-tou = yellow bean]. Writing in Latin, he gives a botanical description of the plant, describes its habitat as Cochin China and China, and cites as sources Thunberg,

Kaempfer, and Rumphius. Then he adds: Uses: These seeds, having been boiled or lightly toasted, are quite acceptable to both the stomach and the palate. From them is made the famous Japanese soy sauce called Soia, which the Chinese and Cochin Chinese frequently use for cooking food and stimulating the appetite. There is also produced a white food resembling coagulated milk (*lactis coagulati*) and called Teu hu or Tau hu [tofu] by the Chinese; it is the most widely used food among them. Although it is rather bland by itself, if the appropriate condiments are added, it becomes a food which is neither unpleasant nor unhealthy.

The author: Ioannis (Joao) de Loureiro was born in Portugal in 1715. Somewhere between 1735 and 1743 he arrived in Cochin China (today's Vietnam) as a Jesuit missionary. Living at Hué, the capital, near the sea coast, he tells us that he had no access to European medicines. So he was obliged to depend entirely on native medicinals, and by investigating them he was necessarily induced to study the local flora and to make botanical collections. Thus he developed a herbarium of nearly 1,000 species. In 1779 he went to Canton to do botanical research for 3 years, living within a factory. He left for Lisbon in 1782, and died in 1794 or 1796. He was one of the most prominent botanical collectors of the 1700s, giving rich descriptions of economical and medicinal uses.

The book: Volume 1 was first published in 1789; the set was reissued 3-4 years later edited by Willdenow, with added notes. It describes 1,257 plants (Bretschneider 1880, p. 129-46).

Note 1. This is the 2nd earliest document seen (May 2010) concerning soybeans in Vietnam, or the cultivation of soybeans in Vietnam. This document contains the 2nd earliest date seen for soybeans in Vietnam, or the cultivation of soybeans in Vietnam (1790). The source of these soybeans is unknown.

Note 2. This is the earliest Latin-language document seen (April 2013) that uses the word "Teu hu" or the word "Tau hu" to refer to tofu.

Also discusses: *Dolichos tetragonolobus* (p. 437. Winged bean? Habitat: Cochin China and China). The genus *Arachis* (p. 522-24), with two species: *Arachis asiatica* and *Arachis africana*. He notes (p. 524) that Linnaeus calls the latter *Arachis hypogoea* [peanut]. Address: Portugal.

15. Loureiro, Joao de. 1793. *Flora Cochinchinensis: sistens Plantas in regno Cochinchina nascentes*. Vol. 2. *Dolichos soja* [The flora of Cochin China. Vol. 2.]. Denuo in Germania edita cum notis Caroli Ludovici Willdenow; Bernolini [Berlin], impensis. See p. 537-38. Edited by Willdenow, with added notes. Also published by the Acad. Sci. of Lisbon. [Lat]

• **Summary:** The first edition of this important work was published in 1790. The content of this 1793 edition concerning *Dolichos soja*, published in Berlin and edited by

Willdenow, is almost identical to that of the 1790 edition. The text has been re-set to fit on the smaller pages, and some abbreviations have been written out. In the chapter titled "Diadelphia. Decandria" we find: *Arachis* (p. 430-31; incl. *Arachis Asiatica* and *Arachis Africana*, also called *Arachis Hypogoea*). *Phaseolus radiatus* (p. 435). *Dolichos Soja* (p. 537-38).

By unusual coincidence, the earliest known recorded feeding of cow's milk to a human infant (by Underwood) also occurred in 1793. Address: Portugal.

16. Pinkerton, John. 1811. A general collection of the best and most interesting voyages and travels in all parts of the world: Many of which are now first translated into English. Digested on a new plan. Vol. 7. London: Printed for Longman, Hurst, Rees, Orme, and Brown. 820 p. See p. 269. • **Summary:** Each book of this 17-volume work is composed of unnumbered chapters, each describing a different voyage. One of these (p. 231-270) is "The embassy of Peter de Goyer and Jacob de Keyzer from the Dutch East India Company to the Emperor of China in 1655. By John Nieuhoff, Steward to the Ambassadors. Translated from the Dutch."

The Introduction begins: "Although China was discovered over land by Marco Polo the Venetian, towards the end of the thirteenth century, yet it was very little known to Europeans, till the Portuguese [Portuguese] arrived there by sea towards the end of the fifteenth, and the Romish [Catholic] missionaries found admittance into the empire. In 1517, they established a trade at Quan-tong [Guangdong], commonly called Kanton [Canton]: afterwards they settled a factory also at Ning Po [Ningbo], called by them Liampo, on the eastern part of China, and drove a considerable trade along the coast, between those two famous ports, till their unsufferable [insufferable] pride and insolence brought on their destruction every where but at Ma-kau, or Makao [Macau], an island in the mouth of the river of Kanton [Pearl River], which they still hold, though under great restrictions."

On p. 269 we read that the daily allowance of food by the two ambassadors (de Goyer and Keyzer) included "six tael of mison" (possibly miso). Note: A tael is a unit of weight equal to 1/10 of a catty, or about 50 gm.

"Their secretaries daily allowance was, one katti [catty, a measure of weight] of fresh meat, five measures of tea, one katti of meal, one measure of taufoe [tofu],... four measures of oil, four tael of mison [miso?], one katti of herbs, and one cup of arrac" [arrack, a strong distilled alcoholic beverage mainly in South- and Southeast Asia].

Note 1. This is the earliest English-language document seen (April 2013) that uses the word "taufoe" to refer to tofu.

Note 2. Kaempfer's *History of Japan*—first published in English in 1727—also appears in this book. The text is almost identical to the 1727 text. The section about soybeans and soyfoods is in Chapter 6, pages 697-98.

Note 3. Pinkerton lived 1758-1826. Address: Author.

17. Davies, Benjamin. 1813. A new system of modern geography: or, A general description of the most remarkable countries throughout the world;... 3rd ed. Philadelphia, Pennsylvania: Published by Johnson and Warner,... xxiv + 25-447 p. See p. 183.

• **Summary:** In the chapter on Japan (p. 178-84), the section titled “Vegetable and animal productions” states (p. 183): “The ginger, the soy-bean, black pepper, sugar, cotton, and indigo, though perhaps natives of the more southern regions of Asia, are cultivated here with great success, and in vast abundance.”

Note: One interesting section (p. vii-xii) is titled “The common names of ancient geography, explained by the synonymous modern names, and arranged in alphabetical order.” For example: “Albion, now England... Batavia, now Holland... Belgium, now Flanders... Lusitania, now Portugal... Lutetia, now Paris... Memphis, now Cairo, the capital of Egypt... Scandinavia, now Denmark, Norway and Sweden... Thracia, now Romania... Vindebona, now Vienna, capital of Austria.”

Note 2. “Vindobona (from Gaulish windo- ‘white’ and bona ‘base/bottom’) was a Celtic settlement and later a Roman military camp on the site of the modern city of Vienna in Austria.

“Around 15 BC, the kingdom of Noricum was included in the Roman Empire. Henceforth, the Danube marked the border of the empire, and the Romans built fortifications and settlements on the banks of the Danube, including Vindobona with an estimated population of 15,000-20,000” (Source: Wikipedia, at Vindobona, Aug. 2014). Address: [United States].

18. Morrison, Robert. 1815-1823. A dictionary of the Chinese language in three parts. 6 vols. Macao. Printed at the Honourable East India company’s press by P.P. Thomas. 30 cm. [Eng; Chi]

• **Summary:** S.W. Williams, in “A Syllabic Dictionary of the Chinese Language,” starts his preface by noting the great importance of this very early Chinese dictionary. “This work will ever remain a monument to his industry and scholarship; and its publication in six quarto volumes by the East India Company at an outlay of \$60,000 was a just appreciation of its merits. Since then, many similar works have been published, dictionaries both of the general language and its chief dialects.”

Part 1. Chinese and English arranged according to the radicals. Part 2. Chinese and English arranged alphabetically. In Part 2, Vol. 1 (published in 1819), page 739 (#9187) gives 3 characters for *she* [shih = fermented black soybeans], pronounced shuh. *Tow she* is a condiment made from pulse, used in cooking. *She yew* or *Tsëang yew* is soy [sauce].

Note 1. This is the earliest English-language document

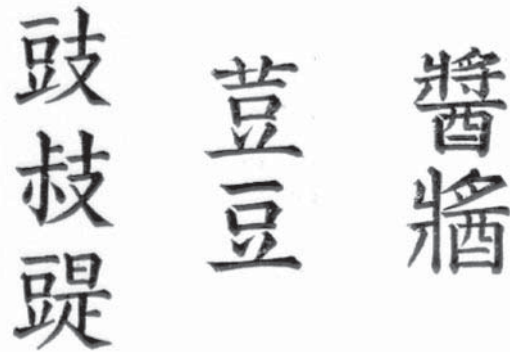
seen (Nov. 2011) that mentions fermented black soybeans, which it calls *she* or *Tow she*.

In Part 2, Vol. 1 (published in 1819), page 859 (#10358) gives the character for “leguminous plants, peas, or beans.” The first example is *Tow foo* (2 Cc = 2 Chinese characters), “a white jelly-like substance made from pulse.”

Note 2. This is the earliest English-language document seen (April 2013) that uses the term “Tow Foo” (regardless of capitalization or hyphenation) to refer to Chinese-style tofu.

Page 860 (#10365) gives 2 characters for *tow* [pronounced doe]. “A generic name for pulse, beans, and so on. Page 882 (#10622) gives 2 characters for *Tseang* [chiang; like soft Japanese miso]. “A kind of pickle; certain mode of preserving meat, rice, and pulse. *Tseang yew* is soy [sauce].

Part 3. English and Chinese (published in 1822). Page 398 gives “SOI, or Soy” followed by the two characters for “tseang yew” [soy sauce]. Note 3. Illustrations show each of these characters.



Vol. 3, Part 1 (published in 1823) gives Chinese and English arranged according to the radicals. On p. 397 is the 151st radical, *Tow*. Two early original forms of the radical are shown, each resembling a vessel with a lid. “Name of an ancient vessel to contain food, and used in the rites of sacrifice; a certain measure. Grain; leguminous plants, beans, or peas. Name of an office, of a place, and of a district. A surname.” Characters containing this radical are shown on pages 397-98: *she*—“A sort of pulpy substance made of pulse [shih; fermented black soybeans]. *wan*—“A substance expressed from pulse; soy. Also read Yuh.”

Note 4. The author, Rev. Robert Morrison (lived 1782-1834), a minister, was the first Protestant missionary in China. He was a Scotchman, though born at Morpeth in Northumberland, England. In 1807 he was sent by the London Mission to try to start a mission in China. But the British East India Company opposed missionary activity. So he traveled via the USA and reached Canton in 1808. Once there, the Company was glad to enlist his great linguistic talents, and he was appointed translator to their factory at Canton. Thus, it was at their expense (£15,000) that his



great Chinese dictionary was published in 1822. He had previously published complete translations of the New and Old Testaments. A condensed (2 volumes in 1) edition was published in 1865 in London. He also established the Anglo-Chinese College at Malacca for English and Chinese literature, with a view to the propagation of Christianity. He died in 1834 at Canton, but he was buried at Macao in the Christian cemetery.

Note 5. This is the earliest English-language document seen (March 2012) that mentions fermented black soybeans, which it calls *tow she*.

Note 6. *Webster's New Geographical Dictionary* (1988) defines Macao (Portuguese Macau) as a Portuguese overseas territory consisting of the Macao peninsula (located at the mouth of the Pearl River just south of Canton and about 40 miles west of Hong Kong) and the two small islands of Taipa and Colôane. It was settled by the Portuguese in 1557; from 1717 until the 1800s, Macao and Canton were the only Chinese ports open to European trade. Its independence was declared by Portuguese in 1849 but not recognized by Chinese as Portuguese territory until 1887. It was for many years a haven for missionaries and traders. Portugal agreed in 1987 to return Macao to Chinese sovereignty in 1999. Address: D.D.

19. Ridgway, Archibald R. 1844. Letters from Hong Kong and Macao (Concluded from page 313). *New Monthly Magazine and Humourist* 70(279):353-84. See p. 369.

• **Summary:** This is in "Letter X," written by Ridgway from his lodgings near Whampoa [the old English transliteration of Huangpu District, just north of Canton, in Guangzhou in southern China]. "In one of the rooms of my orange-grove friend's house, there were heaped up large piles of some coarse cakes, that puzzled me for some time. I asked what they were, but the only answer was 'Chow chow;' [food] upon which I tasted, but could not at all manage to relish them; and no wonder, for although chow chow, they are not chow chow for men, but for beasts. They are [soy] bean-cakes, used for fattening cattle, and the residue of a preparation that the Chinese make from a species of bean [soya bean] grown for the purpose.

This preparation, which I have frequently seen hawked about the streets of Macao and Canton, is very like curdled milk, and is made as follows: the beans are, after being first boiled and skinned, ground in a hand-mill with a little water; the mass is then squeezed and strained through a fine sieve. The residue is made into the bean-cakes, while the curds [tofu] are a favourite dish at the tables of Chinamen of all ranks, who eat them, either with the simple addition of a little lime, which they think strengthens the stomach, or with condiments and sweets of all kinds. I tasted them once with lime, and found them very insipid.

"The village of Whampoa is a few hundred yards above Orange Grove, and is situated at a little distance above the

river, and surrounded by a wall."

Note 1. The "bean cakes" seen by this writer were clearly soy bean cakes, a co-product of pressing soybeans to make oil and protein-rich but inedible round soy "bean cakes." However he incorrectly concludes that these "bean cakes" are made from okara, the fibrous residue left over after making tofu.

Note 2. This is the earliest English-language document seen (Aug. 2010) that uses the term "bean cakes" (or "bean-cakes" or "bean cake") to refer to ground, defatted soybeans. Address: Esq.

20. Hedde, Isidorel; Renard, Éd.; Haussmann, A.; Rondot, Natalie. 1849. *Étude pratique du commerce d'exportation de la Chine* [Practical study of the business of exporting from China]. Paris: A la Librairie du Commerce, Chez Renard; Canton, China: Chez Reynvaan et Cie.; Batavia: Chez Sanier. 280 p. See p. 188-90. [3 footnotes. Fre]

• **Summary:** Item No. 64 is "Soy sauce" (*Soya*). Names: English: soy. Portuguese: soja. Chinese court dialect [Mandarin]: chi-you. Chinese (Cantonese): chi-yaou. Nature and origin of the basic material: Soy sauce (*le soya*) is a seasoning made with the seeds of a species of bean (*haricot*), which grows in China and Japan: it is the *si-yao* of the Japanese, the *you-tao* of the Chinese, the *dolichos soja* of the botanists. It is a member of the legume family. Footnote: The *you-tao* is found among the edible plants of Macao and Canton, and entire fields of it are cultivated on the island of Tchou-san, as well as in the provinces of Fujian (*Fo-kièn*) and Zhejiang (*Tché-kiang*).

Method of manufacture: The manufacture of soy sauce (*du soya*), without being difficult, requires attentive care and practice; Chinese families prepare their soy sauce themselves.

Weigh a certain quantity of black [soy] beans (*haricots noirs*), boil them over a low flame; they must be taken out in time to avoid overcooking. Drain them, then add a certain quantity of wheat or barley flour [the amount is not specified]. Cover the vessel, and leave it for a bit in some warm and humid corner. Fermentation begins, an abundant mold forms, and when it is withered and dried out, wash the beans. Next throw them in a jar with an equal weight of sea salt, three times as much boiling water and some aromatic substances. There is nothing more to do than to place the terrine [a glazed, earthenware cooking dish] in the sun; open it during the day and close it at night or when it rains. One month later, the soy sauce is done, which does not prevent many housekeepers from allowing theirs to age thirty or forty days more. Clarify, drain the mass, and put the liquid in bottles.

Description of the finished product: Soy sauce (*Le soya*) is a clear liquid, brownish-black in color; when shaken in a bottle, it should leave a brownish yellow foam on the walls. Its flavor is pleasant and renders it an excellent seasoning.



Soy sauce from Japan is much more esteemed than that of China; its taste, quality, and aroma are so unlike that it is not doubtful that the preparation is different. It appears, besides, that the Japanese use other very common ingredients, they say, in their empire.

Price in Canton (piasters/picul): First grade: 12. Second grade: 10. Third grade: 8. However you can buy a good grade for as little as 5.25 to 7.75 piasters/picul. Churn-ching [Chunking?] sells for 3 piasters a dozen bottles of superior quality soy sauce which is ordinarily sent to British India.

Exportation, destination, and usage: This seasoning has now been adopted throughout almost all of British India, and for the last 20 years [since 1829] it has even been served on the tables of London, Singapore, Pulao Pinang (the first British settlement in Malaya; *Poulo-Pinang*), Manila [Philippines], Batavia [today's Jakarta, Indonesia], and Bourbon [today's island of Réunion / Reunion]—and much is consumed. The usage is expanding in the United States.

A table shows exports of soy sauce (quantity and value) from Canton: In 1844–1,120 piculs worth 9,029 piastres / piasters; 98.9% is sent to England, 0.9% to the USA, and 0.01% to France. In 1845–568 piculs worth 6,380 piasters; 75.7% is sent to England, 13.7% to Denmark, 8.5% to Sweden, 1.6% to the USA, and 0.5% to Germany.

Note: This is the 2nd earliest document seen (July 2014) that contains a table related to the soybean.

The Chinese consume large quantities of it which they make themselves in their homes; products destined for export come from factories in Henan (a province in central China; W.-G. Honan) and Canton.

Export duties: 4 mèces per picul = 5.05 francs per 100 kg.

Note 1. This is the earliest document seen (Aug. 2009) concerning soybean products (soy sauce) in Réunion. This document contains the earliest date seen for soybean products in Réunion (1849 or before); soybeans as such had not yet been reported by that date.

Note 2. This is the earliest document seen (Aug. 2014) concerning soybean products (soy sauce) in Denmark. This document contains the earliest date seen for soybean products in Denmark (1849 or before); soybeans as such had not yet been reported by that date.

Note 3. This is the earliest document seen (April 2007) concerning export duties or tariffs on a soy product—soy sauce exported from China—or soybeans.

Note 4. This is the earliest French-language document seen (April 2012) that uses the words *chi-you* or *chi-yaou* to refer to soy sauce. Address: Commercial Delegates attached to the French Mission in China.

21. Rundall, Thomas; Adams, William. 1850. *Memorials of the empire of Japon: In the XVI and XVII centuries*. London: Printed for the Hakluyt Society (Series 1, No. 8). xxviii + 186 p. 22 cm. Facsimile edition reprinted in 1968 by B.

Franklin (New York). [20+ ref]

• **Summary:** Contents: Preface—A description of the empire in the 16th century. From... Harleian manuscript #6249. Six letters of William Adams, 1611 to 1617. Notes. Summary of a narrative by His Excellency Don Rodrigo de Vivero y Velasco... of his residence in the empire: A.D. 1608-1610.

The preface states: The Portuguese first arrived in Japan in about 1542; the Spaniards arrived a little later. The first indication of any misunderstanding between the Japanese government [shogun, “Taico Sama”] and the Europeans residing there appears in 1587. In that year the shogun “despatched [dispatched] two imperial commissioners, in rapid succession, to Father Cuello, the vice-provincial of the Portuguese, to demand: 1. Why he and his associates forced their creed [Jesuit Roman Catholicism] on the subjects of the empire. 2. Why they incited their disciples to destroy the national temples? 3. Why they persecuted the bonzes [native priests]? 4. Why they, and the rest of their nation, used for food animals useful to man, such as oxen and cows? [see note M]. Finally, why they permitted the merchants of their nation to traffic in his subjects, and carry them away as slaves to the Indies?” The replies of the vice-provincial are given, showing disdain for the Japanese and their religions (p. x-xi).

On p. xxiv is a detailed discussion of Dutch trade with Japan and the island of Deshima.

The English attempts at trade with Japan failed. “The English retired from Japan in 1623, and a subsequent attempt was made (in 1673) to renew the intercourse; but it proved unsuccessful” (p. xxv).

“The Americans must be placed in the same category with ourselves [the British]. In the year 1837 the *Morrison*, a vessel belonging to citizens of the United States, sailed from Singapore, on an expedition to Japan.” It was driven away by cannon fire from isolationist Japan (p. xxviii). Note: In addition to its commercial aims, the ship (headed by Charles W. King) had been attempting to repatriate seven shipwrecked Japanese citizens who had been picked up in Macau. It also carried Christian missionaries such as Samuel Wells Williams.

Letter No. IV by Sir Thomas Smith to William Adams concerns Capt. John Saris of the *Clove*, who anchored near Firando [Hirado] in June 1613.

Units of currency (p. 88). 10 Condrins = 1 Mas = 6 pence (British). 10 Mas = 1 Taie = 5 shillings.

In the section of the book titled “Notes” (p. 89+), Note O (p. 123-24) is about “Produce of the fields” (from E. Kaempfer). One of the five fruits of the field is: “4. *Daid-su*, or *Daid-beans*; from which *soeju* [shoyu], or *soy* [sauce], is made; and which is highly esteemed as an article of food.”

Note A A (p. 164-67), titled “Fate of the English factory at Firando,” discusses what items the Spaniards, Portuguese, and Dutch tried to import to Japan, and the weak demand for these products. Note: William Adams lived 1564-1620.

22. Browne, D.J. 1855. Report on the seeds and cuttings recently introduced into the United States. Preliminary remarks. *Report of the Commissioner of Patents, Agriculture*. p. x-xxxv. For the year 1854. See p. xv.

• **Summary:** “*Japan pea*, also described in last year’s report, and has been since cultivated with remarkable success.

“*Soja bean*, (*Soja hispida*) procured by the Japan Expedition [of Commodore Perry]; two varieties, the ‘White’ and the ‘Red-seeded,’ both of which are employed by the Japanese for making *soy*, a kind of black sauce, prepared with the seeds of this plant, wheaten flour, salt, and water. This ‘soy,’ or ‘soja,’ which is preferred to the *Kitjap* of the Chinese, is used in almost all their dishes instead of common salt. The soy may be made as follows:

“Take a gallon of beans of this plant and boil them until soft; add bruised wheat, one gallon; keep in a warm place for twenty-four hours; then add common salt, one gill [ $\frac{1}{2}$  cup], and water, two gallons; and put the whole into a stone jar, and keep it tightly closed for two or three months, frequently shaking it; and then press out the liquor for use.

“The seeds of this plant only require to be sown in a warm, sheltered situation at the time of planting Indian corn, and cultivated as any garden bean.”

Note 1. The author of this report apparently did not realize that the Japan Pea and the Soja Bean are one and the same plant. Note 2. This is the earliest American document seen (Jan. 2003) that uses the term “*Soja hispida*” to refer to the soybean.

Note 3. The “Japan Expedition” refers to that led by the American Commodore Matthew Calbraith Perry (lived 1794-1858).

Note 4. Piper and Morse (1923, p. 40) state concerning the Perry Expedition to Japan in 1854: “The Mammoth may well be the ‘white-seeded’ soja bean obtained by the Perry expedition. The ‘red-seeded soja bean’ was, probably, the adzuki bean (*Phaseolus angularis*), as no red-seeded soybean is known.” If this were an adzuki bean, this would be the earliest document seen (March. 2003) concerning azuki in the United States.

Note 5. This is the earliest English-language document seen (April 2012) that uses the term “*Kitjap*” to refer to Chinese soy sauce.” Observe the similarity between the words “*Kitjap*” and “*Ketchup*”—suggesting that the word “*ketchup*” may have a Chinese origin.

Note 6. Also discusses: White quinoa (*Chenopodium quinoa*, p. xiii-xiv). White Lupine (*Lupinus albus*, from southern Spain and Germany, xv-xvi). Yellow Lupine (*Lupinus luteus*, from Germany, p. xvi). Chinese yam (*Dioscorea batatas*, from China but more recently from France, p. xvii).

Note 6. This is the earliest document seen (Jan. 2005) that mentions quinoa in the USA. Address: United States Patent Office, Washington, DC.

23. Vilmorin-Andrieux & Co. 1856. Description des plantes potagères [Description of garden vegetables]. Paris: Vilmorin-Andrieux & Co. et la Librairie Agricole. iii + 478 p. Index. 16 cm. [Fre]

• **Summary:** Each entry includes the family, popular name, synonyms, names in other (European) languages, scientific name, description of plant, utilization, sources for more information on cultivation.

Garden vegetables include Amaranth (3 varieties, p. 3-4). Peanuts (*Arachide*, p. 9; Synonyms: *Pistache de terre–Souterrain–Anchic–Atachine–Fève de terre–Noisette de terre–Pistache d’Amérique–Pois de terre*. English: Earth-nut; German: Erdeichel; Spanish: Alfonsigo; Italian: Cece di terra; Scientific: *Arachys hypogea*). Haricot de la Chine (regular or bicolore, p. 165-66 may be the soybean. Known in the USA as “early dwarf yellow China.” The shelled seeds are very tasty, fresh or dry). Lotier (*Lotus tetragonolobus*, a legume, p. 218; English: Winged pea; Italian: Loto tetragono). Quinoa (white or back, *Chenopodium quinoa*, p. 358). Chufa (*Souchet comestible*, *Cyperus esculentus*, *Amande de terre*, p. 375-76).

Note: This is the earliest document seen (April 2015) concerning Vilmorin-Andrieux & Co. It is unclear whether or not soy is mentioned. Address: Merchands Grainiers, Quai de la Mégisserie, Paris, 30, France.

24. Oliphant, Laurence. 1859. Narrative of the Earl of Elgin’s mission to China and Japan in the years 1857, ‘58, ‘59. 2 vols. Edinburgh and London: William Blackwood and Sons. xiv + 492 p. Illust. (coloured lithographs). Map.

• **Summary:** Page 60: In Nagasaki, they visit a tea-garden high on a hill above the city. “We have long since taken off our shoes, and now squat in a circle on the floor, and gaze with curiosity, not unmixed with alarm, at the display before us. There is raw fish thinly sliced, and salted ginger; there are prawns piled up with a substance which in taste and appearance very much resembles toffy; there are pickled eggs and rock-leeches, and pieces of gristle belonging to animals unknown, to be eaten with soy [sauce];... but still the experiment is hazardous, and we are relieved at the sight of a bowl of rice as a safe *piece de resistance*.”

Pages 67-68: In Macao, at a Chinese restaurant, the author “managed, by the aid of chopsticks, to make a very satisfactory repast off eggs a year old preserved in clay, sharks’ fins and radishes pared and boiled into a thick soup, *bêche de mer* or sea-slugs, shrimps made into a paste with sea-chestnuts, bamboo roots, and garlic, rendered piquant by the addition of soy [sauce] and sundry other pickles and condiments, and washed down with warm samshu in minute cups. Dishes and plates were all on the smallest possible scale, and pieces of square brown paper served the purpose of napkins.”

Pages 398-99. The author found it very difficult to

obtain any statistics about Tientsin or its trade. He finally found a respectable, local Chinese merchant. “The theme upon which he dwelt most feelingly was the excessive poverty of the city of his abode. It exported absolutely nothing, he averred... Among its imports from the south are dried fruits, sugar, glass ware, camlets, woollens [woolens], opium, &c., in small quantities. Numerous cargoes of [soya] beans and bean-cakes are brought over from Neu-chwang [Newchwang] and the Manchurian coast.”

In Appendix II a table (p. 491) shows “Trade returns between Shanghai and Japan.” Imports from Japan from 1st Jan. to 30th June 1859. Isinglass (Kanting) 1,551 peculs [piculs]. Seaweed, all kinds, 61,561 peculs. Soy [sauce], 562 peculs.

Note 1. This is the 2nd earliest English-language document seen (May 2014) suggesting that soybeans are grown in Manchuria, since Newchwang is a port in Manchuria.

Note 2. This is the earliest document seen (May 2014) concerning Chinese restaurants outside China, or soy ingredients used in Chinese-style recipes, food products, or dishes outside China. Address: Private secretary to Lord Elgin.

25. Unger, F. 1860. On the principal plants used as food by man. *Report of the Commissioner of Patents, Agriculture*. p. 299-362. For the year 1859. See p. 318. Translated from the German.

• **Summary:** Page 318 states: “*Soja hispida*, Monch. (*Soja japonica*, Sav.), or Soy, from Japan, is cultivated in Southern Asia and Europe.

Note 1. The author is using the word “Soy” to refer to the soybean plant rather than to soy sauce.

“What the previously mentioned legumens [legumes] are to the colder portions of the earth the Ground nut (*Arachis hypogaea*, L.) is to the warmer zone. This plant was known neither to the ancient Egyptians and Arabians nor to the Greeks. The latter certainly did not understand this plant under the name of *arachos* [written in Greek letters], which was probably a species of *Vicia*. It has been cultivated for a long time on the west and east coast of Africa, and only quite recently introduced into the Mediterranean regions. A Hindostan [Hindustan] name alone exists for it in Asia. In modern times only, it has been cultivated generally in China and Cochin China, which countries it has reached in some unknown way. On the other hand, six species of *Arachis* certainly belong to the *Flora* of Brazil, and the older authors also mention the cultivation of *Arachis hypogaea* under the names of *Mandubi*, *Anchic*, and *Mani*, on which account there is little reason to doubt its American origin. The thick tuberous seeds are frequently eaten raw, but are very palatable when roasted. The oil from it is excellent, and is much esteemed in India.”

Also discusses “the bean (*Vicia faba*, Linn., *Faba*

*vulgaris*, Mönch.),” lupines (*Lupinus hirsutus*, *L. albus*, and *L. termis*), lentil (*Ervum lens*), pea (*Pisum sativum*), Chick-pea, Flat-pea (*Lathyrus sativa*), and kidney bean (*Phaseolus vulgaris*) (p. 316-17).

Note 2. This is the earliest English-language document seen (June 2008) that uses the term “Chick-pea” (or “chick-pea” or “chick pea”). We read: “The Chick-pea (*Cicer arietinum*, L. {Greek name}, Theophrastus), is an important kind of pea to the East. The Jews, Greeks, and Egyptians cultivated it in ancient times, and it was also used as an object of devotion, at an early period, even in India, as is shown by the Sanscrit [Sanskrit] names. The common class of Greeks even now make use of it, both raw and roasted, during the winter months, and employ it as a substitute for coffee. It is also cultivated frequently, at the present day, in Egypt, as far as Abyssinia, and, according to Th. Kotschy, is one of the most generally distributed of cultivated plants on the heights of Lebanon as well as in Spain. This plant is represented as almost growing wild in the Caucasian countries, in Greece, &c, and is also found run wild here and there in the fields of Middle Europe.” It was “introduced into the model farm of Charlemagne” (p. 317). Address: Dr., Germany.

26. Smith, George. 1861. Ten weeks in Japan. London: Longman, Green, Longman and Roberts. xv + 459 p. Illust. Index. 23 cm. Facsimile edition reprinted in 2002 by Ganesha Publishing (London) and Edition Synapse (Tokyo). Series: Japan in English, Vol. 11. [20\* ref]

• **Summary:** This is a very interesting book by a careful observer of Japanese culture. In 1860 he stayed mostly in Nagasaki, Yokuhama (Yokohama), and Yeddo (Edo, later Tokyo). Though he has long experience living as a Christian missionary and bishop in China and Hong Kong, he generally admires the Japanese, yet repeatedly calls them “pagans.”

While walking among the shops in Nagasaki, he notes (p. 27): “Soon again we pass the spacious warehouses of the dealers in sauces, condiments and soys, where large jars lie filled with decoctions of pulse and rice, and are left to ferment and become mellow with exposure and age.”

In the countryside around Yeddo he observed (p. 235): “The large quantities of rye grown in these parts were explained to us as being used in the manufacture of the celebrated Japanese soy; while rice is the ordinary material employed in making the universal spirituous beverage so often alluded to under the name of sakee” (saké, sake). Note: The word “sakee” appears in at least 19 places in this book.

“The secluded Chinese community who reside in Nagasaki compose a trading guild and factory, subjected for ages to all the past vexatious restrictions experienced by the Dutch.” They generally number about 200 persons (p. 32).

The chapter on “Nagasaki” begins (p. 78-79): “The Chinese form no unimportant part of the community



in Nagasaki and are regarded with much dislike by the Japanese. In ancient times there was a free intercourse and unrestricted commerce between the two countries. But the change produced by former European difficulties and civil wars in the policy of the Japanese government towards the Spaniards, Portuguese and Dutch, was extended also to the Chinese mercantile strangers. After the severe edicts against the Christian religion and the prohibition of Christian books, the Chinese were detected importing Roman Catholic publications, and incurred the heavy displeasure of the government. In the year A.D. 1688 they were forcibly confined to a small settlement on the edge of the harbour, and subjected to the same restraints as those endured by the Dutch in the neighbouring scene of their imprisonment in Desima (Deshima). In the year A.D. 1780 the Chinese trading guild was removed a couple of hundred yards further back from the harbour to a Buddhist [Buddhist] monastery... Rigidly guarded and watched, the Chinese factory shared with the Dutch the humiliation and inconvenience of a common captivity." The Chinese guild is now confined to their factory in the southern suburb, where they are isolated by Japanese guards. "Formerly the Chinese were not allowed to walk into the city... At present they amount to about four or five hundred persons, their number being diminished or increased by the departure or return of their junks trading to Japan." At present, three Chinese junks are annually permitted to make a trading voyage to Japan.

Mr. von Siebold first came to Japan in 1823 and remained in the Dutch factory at Desima until 1830, "devoting himself to literary pursuits and scientific researches into the botany and natural history of the country." While studying the "history and geography of Japan, he purchased and published a native map of the empire. In the days of the old regime this audacious act was easily made to bear the appearance of constructive treason; and the colonel was... imprisoned for thirteen months in a solitary room at Desima, and finally banished from the Japanese empire. After an absence of nearly thirty years he returned eight months ago, and has resumed at the age of sixty-four his studies and investigations respecting the country in the hope of being able after three or four years to perfect his observations and on his return to Europe to publish the results of his lengthened researches for the benefit of the scientific world." He now has a lithographed map of Nagasaki, and believes the population is a little over 60,000 (p. 208-09).

A table shows that 35 ships with cargo and 20 in ballast (empty) arrived in Nagasaki during the last 6 months of 1859. During the same period there departed 43 ships with cargo and 9 in ballast. Much of the trade is with China; items include sea weed for jelly, sea slugs for soup, peas and beans (p. 227-28).

Along the Tokaido, near Kanagawa: "The usual crops of wheat, barley, bean, peas and small quantities of still

ungathered rape-seed, prevailed..." (p. 271). Address: D.D., Bishop of Victoria, Hong Kong.

27. Lindley, John; Moore, Thomas. eds. 1866. The treasury of botany: A popular dictionary of the vegetable kingdom; with which is incorporated a glossary of botanical terms. 2 vols. (Parts I and II). London: Longmans, Green, and Co. xx + 1254 p. See Part I. p. 131, 536-37, 747. Part II. p. 1068, 1075. Illust. 17 cm.

• **Summary:** Bean (Part I, p. 131) "*Sahuea* bean, *Soja hispida*."

Glycine (Part I, p. 536-37) "A small genus of *Leguminosae*, all, excepting one, being slender decumbent [reclining along the ground, but with ascending apex or extremity] or twining herbs, with alternate stalked leaves made up of three to seven leaflets varying much in form, and bearing axillary racemes or fascicles of small yellow or violet pea-flowers. The genus belongs to the tribe *Phaseoleae*, and is most nearly allied to *Teramnus*, from which it is distinguished by its pods being destitute of the hardened hooked style seen in the latter, and by the ten stamens, which are united into a tube, being all, instead of the alternate ones only, anther-bearing. The species are pretty equally distributed through tropical Asia, Africa, and Australia, where a few inhabit extratropical regions.

"The *Sooja* of the Japanese, *G. Soja*, the only erect species of the genus, a dwarf annual hairy plant, a good deal like the common dwarf kidney or French bean (*Phaseolus vulgaris*), has small violet or yellow flowers, borne in short axillary racemes, and succeeded by oblong two to five-seeded hairy pods.

"The seeds, like kidney beans in form but smaller, are called Miso [sic, error based on Miller 1807] by the Japanese and are made into a sauce which they call *Sooja* or Soy. The manner of making it is said to be by boiling the beans with equal quantities of barley or wheat, and leaving it for three months to ferment, after which salt and water is added, and the liquid strained. The sauce is used by them in many of their dishes, and they use the beans in soups. The Chinese cook the beans also in various ways, and the plant is cultivated for the sake of them in various parts of India and its Archipelago.

"Mr. Benthams groups the species in three sections, which some regard as genera: *Soja*, with flowers fascicled on the racemes, and falcate pods with depressions but not transverse lines between the seeds; *Johnia*, with flowers similarly arranged, and straight pods with transverse lines between the seeds; and *Leptocyanus*, with solitary flowers on the racemes, and straight pods. The Glycine or *Wistaria* of gardens is now referred to *Millettia*.

Miso (Part II, p. 747). "A fatty substance obtained from *Soja hispida*."

*Soja* (or *Soya*) *hispida* (Part II, p. 1068) is the only representative of a genus of *Leguminosae* of the tribe

*Papilionaceae*, and much cultivated in tropical Asia on account of its beans, which are used for preparing a well-known brown and slightly salt sauce (Soy), used both in Asia and Europe for flavouring certain dishes, especially beef, and supposed to favour digestion. Of late it has been cultivated as an oil-plant. *S. hispida* is an erect hairy herb, with trifoliate leaves, and axillary racemose flowers, which have a five-cleft calyx, a papilionaceous corolla, ten diadelphous stamens, and an oblong pod which contains from two to five ovate compressed seeds. Modern botanists generally refer the plant to *Glycine*: which see.”

Soy (Part II, p. 1075) “A sauce originally prepared in the East, and said to be produced from the beans of *Soja hispida*.

Note 1. This is the earliest document seen (April 2003) in which the soybean is classified under *Papilionaceae*.

Note 2. This is the earliest English-language document seen (April 2003) that uses the term “oil-plant” to describe the soybean.

Also discusses (in alphabetical order): Agar-agar. Alfalfa. Algæ. Almond. Amande de terre (French, *Cyperus esculentus*). Amaranthus. Arachis [peanuts]. Aspergillus. Bean, under-ground kidney = *Arachis hypogaea*. Cannabis. Chenopodium [Common Goosefoot]. Coix [lachryma, Job’s tears]. Cyperus. Earth-nut (*Arachis hypogaea*). Flax. Gingelly oil. Hemp.

Part II: Job’s tears. Legume. Leguminosæ. Linseed. Linum. Lupinus (incl. *Lupinus albus*, *L. luteus*). Nut, bambarra ground (The seed of *Voandzeia subterranea*, p. 795). Nut, earth (*Arachis hypogaea*). Oil (incl. sesamum). Oilcake (“The residuum after expressing the oil of various seeds, especially linseed and rape, which is used for cattle feeding, and as a manure”). Oil-plant (*Sesamum orientale*). Pindals, pindars. Psophocarpus. Pueraria. Quinoa (*Chenopodium Quinoa*). Sea-girdles (*Laminaria digitata*). Sea-hangers. Sea-wand (*Laminaria digitata*). Seaware. Seaweeds. Seawrack. Seawracks. Sesame. Sesamum. Tetragonolobus.

“Voandzeia. So called from Voandzou, the name given by the natives of Madagascar to the only known representative of this genus of *Leguminosæ*, the *V. subterranea* of botanists, a creeping annual, with long-stalked leaves composed of three leaflets... It is a native of Africa, and is extensively cultivated in many parts of that continent, from Bambarra and the coast of Guinea to Natal [in today’s South Africa], its esculent pods and seeds forming common articles of food among the inhabitants of those regions. Although the plant is not indigenous to the Western Hemisphere, it is commonly found in many parts of South America, such as Brazil and Surinam, whither it has been carried by the negro slaves and has now become naturalised. The pods are sometimes called Bambarra Ground-nuts; in Natal the natives call them Igiuhiuba; while in Brazil they are known by the name of Mandubi d’Angola (showing their African origin), and in Surinam by that of Gobbe.

“Voandzou. The Malagassy name of a genus of *Leguminosæ*, called after it *Voandzeia*” (p. 1224).

Note 3. This is the earliest English-language document seen (Nov. 2005) that contains the word “oilcake” (or “oilcakes”). Address: 1. Ph.D., F.R.S., F.L.S., Botanic Garden, Chelsea. Late emeritus Prof. of Botany in University College, London; 2. F.L.S., Curator of the Chelsea Botanic Garden.

28. Pagés, Léon. 1868. Dictionnaire japonais-français [Japanese-French dictionary]. Paris: Firmin Didot frères, fils et cie. 933 p. [1 ref. Fre]

• **Summary:** This is a French translation of the Japanese-Portuguese dictionary published in 1603 in Nagasaki by the Society of Jesus [Jesuits].

Includes: Daizzou [daizu] (p. 252). (Mame), grains, ou haricots du Japon (*Soja hispida*, Moench.- Hoffm.).

Mame (p. 518). Haricots, ou pois chiches du Japon (*Soja hispida*, Moench.- Hoffm.).

Miso (p. 548): Certaine préparation de graines, de riz, et de sel, avec lequel on assaisonne le *Chirou* [shiru] du Japon.

Nattô (p. 597). Certain mets de grains légèrement cuits, et ensuite mis au four. Nattôjirou [nattôjiru]. *Chirou* [shiru] ou bouillon fair avec des grains [nattô].

Note: This is the earliest French-language document seen (Jan. 2012) that mentions natto.

Tôfou [tofu] (p. 803). Espèce d’aliment qui se fait avec des grains pulvérisés, en manière de fromage frais. Tôfouya [tofu-ya]. Maison où l’on fait ou vend des especes de fromages, faits de grains amollis dans l’eau et réduits en pâte. Address: Japan.

29. Carrière, E.-A. 1880. Le soja hispida [The soybean (*Soja hispida*)]. *Journal d’Agriculture Pratique* 44(14):479-83. April 1. [Fre]

• **Summary:** Page 480 notes that in 1874 the *Jardin d’Acclimatation* in France received soybeans from Mexico and distributed them to various societies.

Illustrations show: (1) A plant, pod, and seed of *Pois oléagineux de la Chine* (soybean; Fig. 35, by L. Rouyer). (2) A plant and pods of *Soja hispida* (soybean) with many pods clustered around the stem, and a cluster of 7 pods to the upper left of the plant (Fig. 36, by Thiebault). (3) A cluster of three leaves of *Soja hispida d’Etampes* one-fourth its natural size (Fig. 37).

(4) Two large pods and one seed of *Soja hispida d’Etampes* (full size; Fig. 38).

(5) A dry plant of *Soja hispida d’Etampes* with pods on the stems, one-ninth its natural size (Fig. 39).

A table (p. 482) compares the composition of different seeds as analyzed by various chemists. The soybean was analyzed by Levallois of *l’Institut agronomique*.

Pages 482-83: A quotation from *Amoenitatum exoticarum* by Engelbert Kaempfer (1712) mentions miso,

soy sauce, koji, and sake.

Page 483 states: "Today the soybean is cultivated in Hungary and probably in Austria. One farmer, Mr. Jules-Robert of Seelowitz, in Moravia [a separate crownland of Austria, but after 1945 part of Czechoslovakia], cultivates it on a very large scale (30 hectares or more each year). He lets some of the plants ripen / mature for harvest as seeds (soybeans); he cuts the others before they mature and mixes them with corn (*maïs*), then ensiles the mixture in a semi-dry state." Note 1. This is the earliest document seen (June 2008) that mentions silage or ensilage in connection with soybeans. It is also the earliest document seen (April 2003) that mentions the use of corn and soybeans together to make silage. All of the early research on the use of soybeans in silage was done in France.

The last paragraph states: "Soybean seeds can be ordered from MM. Vilmorin et Cie, 4, quai de la Mégisserie, Paris."

Note 2. Note 2. This document contains the earliest date seen for soybeans in Mexico (1874). It is not clear whether or not these soybeans were cultivated in Mexico (they may well have been) or where they came from (they may well have come from China on a Manila galleon as part of the China trade).

Note 3. Theodore Hymowitz, Prof. of Plant Genetics, Univ. of Illinois, referring to this reference and to the reference from the year 1651 by Francisco Hernandez mentioning the mung bean, writes (8 May 1989): "The existence of soybeans or mungbeans or even the knowledge of these crops in Mexico at that time is of course no surprise to me. From about 1565 and for the next 250 years ships left Acapulco for Manila (Philippines) and returned. All sorts of goods were moved West to the East and vice versa across the Pacific Ocean. Hernán Cortés [Cortes] (1485-1547, the Spanish explorer and conqueror of the Aztec empire in Mexico) started a plant introduction garden in Mexico City in 1621 and requested that seed be sent to him." Hymowitz added by phone (27 May 1989): "There is no log of what was grown in that garden, but there is the account of Cortés' friend, which is at the University of Illinois rare book room. It is in old Spanish, handwritten."

Note 4. The illustrations in this article were reproduced in many later books and articles by other authors. Address: France.

30. Bretschneider, Emil V. 1880. Early European researches into the flora of China. *J. of the North-China Branch of the Royal Asiatic Society* 15:1-194. New Series. See especially p. 27, 97, 146. Published as a book in 1898 by Sampson, Low, Marston & Co., London. [12 ref]

• **Summary:** This paper, read before the Society on 19 Nov. 1880, is an excellent summary, with bibliographies, of the early botanical researches in China by European naturalists. "I shall start from that period when these regions became

first known to us through the learned and hard-working Jesuit missionaries, the illustrious pioneers of Oriental studies in the far East. On the other side, I shall not extend the area of my researches beyond the Linnean period."

"I. Botanical information with respect to China supplied by the Jesuits... after the Portuguese had made their appearance in Chinese waters in the beginning of the 16th century,... they subsequently established factories at Ningpo, carrying on trade also with Amoy. Besides this they settled near Canton and at Macao which latter place on account of its favorable situation soon became the basis and the starting point for the commercial enterprises of the Portuguese in Eastern Asia. It is also well known that *Franciscus Xavier* was the first Jesuit missionary, who ventured to visit China in 1552, but he died in the same year on an island called Sancian in sight of the Chinese coast. Nearly 30 years elapsed before a new attempt was made by the Jesuits to gain a footing in China. From 1581 to 1583 they sent successively four missionaries to Macao... We find in the collections of the letters and memoirs of the Jesuits in China a great number of articles treating of mineralogy, zoology, and botany, supplying a mass of most valuable information."

Bretschneider discusses the lives and work of the following botanists who mentioned the soy bean: Louis Le Comte of France (1655-1729) (p. 26-27), Peter Osbeck of Sweden (p. 88-91), Charles Gust. Ekeberg of Sweden (p. 88, 116), and Ioannis de Loureiro of Portugal (p. 129-47).

Page 14: "*Pueraria Thunbergiana* Benth. (*Pachyrhizus Thunbergianus* S et Z.) Sin: (One Chinese character is given) *Ko. P. trilobus* D.C. has the same Chinese name. It seems that both of them are textile plants." Also mentioned briefly on pages 28 and 87. Address: M.D., China.

31. McBryde, John M. 1881. Experiments with corn and other crops. *Report of the Experimental and Other Work of the School of Agriculture, Horticulture & Botany of the University of Tennessee* 2:142-76. See p. 172. For the session 1880-81.

• **Summary:** The section titled "Soja bean" (p. 172) states: "This plant (*Soja hispida*) is, according to some, a comparatively recent import from Spain. The plant is really a native of the East Indies [Southeastern Asia, incl. India, Indonesia, Malaysia, and the Malay archipelago], where it is largely grown as a staple article of food. It is beginning to attract attention in several countries of Europe.

"This bean is an essential ingredient of the celebrated Soja Sauce. The seed contains about 34 per cent. of albuminoids and the straw about 9 per cent. It is therefore regarded as 'the vegetable which approaches nearest in chemical composition to animal food (meat) containing, as it does, one-fifth of its weight of fat and about two-fifths of nitrogenous matter.'

"A small quantity of seed was procured last spring and planted on April 27th, in drills 2½ feet apart. They came



up very well” and the plants stood the drought well. The yield, in view of the drought and abundant weeds, “was a remarkably good one. The plant is both hardy and prolific, and will probably give a heavy crop in a favorable season.”

Note 1. The soybean may have been grown in Spain at this time.

Note 2. This is the earliest English-language document seen (April 2012) that uses the term “Soja Sauce” (or “soja sauce”) to refer to soy sauce.

Note 3. Other crops discussed in this article: Indian corn, dhurra, sorghum, drooping sorghum, Johnson grass or Means’ grass, rye, barley, upland rice, millets, buckwheat, teosinte, prickly comfrey, tobacco. Address: Prof. of Agriculture, Horticulture and Botany, Knoxville, Tennessee.

32. Carrière, E.-A.; André, Ed. eds. 1883. *Chronique horticole: Essais d’acclimatation* [Horticultural chronicle: Acclimatization trials]. *Revue Horticole: Journal d’Horticulture Pratique (Paris)* 55:313-16. July 16. See p. 315-16. [Fre]

• **Summary:** The Society for Acclimatization distributes to its members the seeds of exotic, edible or industrial plants, in order to test their cultivation and multiplication in France.

Recently, Mr. de Muratel, who resides in the Tarn region, gave an account of the trials that he made using the seeds he had been entrusted with. The results are very interesting.

Discusses the soybean of Etampes (*Le Soja d’Étampes*), and the green soybean of Japan (*Le Soja vert du Japon*).

Also discusses the chufa of Spain and the Yaye-Nari (*Phaseolus radiatus*; azuki bean). Address: France.

33. *Atlanta Constitution (Georgia)*. 1893. Experiment farm. A Constitution correspondent visits the beautiful place and gives an account of what he saw. The standard of excellence to which Colonel Redding has brought the place—Cotton experiments. July 9. p. 11.

• **Summary:** A visit to the Georgia agricultural experiment station near Griffin, Georgia. “A few years ago the Bates place was only a truck farm and home of the owner.” Colonel R.J. Redding (the director) and Mr. K.M. Kimbrough (the agriculturist) are both well qualified. “Variety patch: Two acres have been set aside upon which the officers intended to illustrate the patches that should be upon every farm. On these two acres are potatoes, African ground peas, Lorgie common ground peas, Spanish peanuts,... sun flowers, buckwheat, upland rice, Pearl millets, sorghum, broomcorn, soja beans and coffee beans.”

“The silo—Curing feed stuffs: Curing green forage has always been a menace to the average farmer, on account of the changeableness of the weather.” But the silo has largely solved this problem. A large wooden silo has been erected as a wing of the barn. Cemented inside, it has a capacity of fifty tons. Mr. Kimbrough stated that last year he put into

the silo 93,000 pounds of “green corn, pea vines [cow peas], sorghum and soja beans.” Although green and partly wet, it was cut up with a forage machine, run by a steam engine, and immediately put into the silo, then covered with planks, weighed down, and left alone. The sour stage soon passed and it was fed to cows all during last winter with good results.

34. Hosie, Alexander. 1893. Report by Mr. Hosie on the island of Formosa with special reference to its resources and trade. Great Britain Foreign Office. 26 p. Commercial. No. 11. [1 ref]

• **Summary:** The title page states that this report was “Presented to both Houses of Parliament by Command of Her Majesty. August 1893.” The report was received in March 1893. Contents: Introduction. Physical characteristics. Inhabitants. Agriculture. Economic botany: Textile plants, oil-producing plants (incl. *Dolichos soja*, L.), other commercial plants. Special industries. Trade. Map of Formosa.

The section titled “Oil-producing plants” (p. 16-19) begins: “Since the introduction of kerosene oil into China the demand for native lighting-oils has been on the decline, but for cooking purposes some of these oils are produced in large quantities. Oil-yielding seeds are likewise exported, to a limited extent, to foreign countries, where the oil is extracted and used to adulterate more valuable oil. Of the seventeen oil-producing plants cultivated in China, eight grow in Formosa. They are: -

“1. *Dolichos soja*, L. (?). More oil is extracted from the [soja] bean than from any one of the other oil-yielding plants of China. The two kinds of bean treated for oil are small in size and oval in shape, one having a whitish yellow epidermis and interior, the other being green throughout. They are probably sub-varieties of the *soja* bean. The process of extraction is worthy of description.” Note 1. This is the earliest English-language document seen (March 2003) that uses the term “extraction” in connection with the commercial crushing of soybeans to give oil and meal. Note 2. This is the earliest English-language document seen (Sept. 2004) that uses the term “whitish yellow” to describe the color of soybean seeds.

“The first thing that strikes the eye of a visitor to a bean-oil factory is the enormous stone wheel which is used to crush the beans. It is of dressed granite, about 10 feet in diameter and 2½ feet thick at the axis, gradually contracting to a foot at the rim. This wheel, which is of enormous weight, revolves in a well 30 to 36 inches broad, paved with stone, and bounded on each side by a low wall of concrete some 3 feet high... Two mules, blindfolded, are harnessed to the wheel, one in front, the other behind, and walk outside the outer wall.” After being crushed, the soja beans are steamed, then poured into molds composed of a couple of narrow metal bands surrounded by a wooden

casing with a steamed straw broom forming the bottom. The mass is trampled down by foot until it is quite hard. "The wooden casing is removed, and the metal bands arranged a short distance apart near the top and bottom of the cake respectively. The whole is then put into a primitive wooden press, and subjected to considerable pressure by the driving in of successive wedges. The oil is expressed and drains into an underground tank... When all the oil has exuded from the cakes they are taken from the press, the metal bands and straw casings are removed, and, after being left to dry for a time, they are ready to be shipped to other parts of China for manure. The beans yield about 10 per cent. weight of oil, and the cakes, when removed from the press, weigh some 64 lbs., and are worth about 2s. 9d. each. They constitute a very valuable manure, and are carefully macerated before being applied to the soil.

"To show the commercial value of this industry, I may mention that 60,000 tons of bean cakes were exported from Chefoo during 1890. Nor is Chefoo the principal exporter. Newchwang sent out over 156,000 tons in the same year. In Formosa these beans are grown, and the oil is extracted in the above manner, but only in quantities sufficient to meet local requirements. The refuse cakes are not exported. The oil is used for both cooking and lighting purposes."

A table (p.25) shows "Trade of the island of Formosa carried on in vessels of the foreign type." The major export is tea, followed by sugar. "Beans" (probably soybeans) are a minor export; 96,708 lbs. worth £363. Formosa's main import by far is opium.

Concerning the inhabitants (p. 8): "The first Europeans to visit Formosa were the Portuguese, who settled at Kelung in 1590. They were followed by the Dutch, who landed in 1624. Two years later came the Spaniards; but they were expelled by the Dutch in 1642. A Chinese pirate Chief, Koxinga by name, drove away the Dutch in 1661 and proclaimed himself King; but twenty-two years later, in 1683, the Chinese dethroned his successor and asserted their authority. From that date until 1887 Formosa was a dependency of the Province of Fuhkien [Fukien / Fujian]; but in the latter year, and chiefly in consequence of the French hostilities (1884-85) undertaken in the north of the island, the eyes of the Chinese were opened to the value attached to it by foreigners, and it was raised to the rank of an independent Province of the Empire. The Chinese did not reach Formosa until after Europeans had settled there."

Concerning agriculture (p. 8): "As the level part of Formosa is... peopled by immigrants from the Fuhkien [Fukien] and Kwangtung provinces, agriculture is conducted on much the same principles as on the adjacent mainland."

Note 3. This is the earliest document seen (March 2014) concerning soybeans (not including wild soybeans) in Taiwan, or the cultivation of soybeans in Taiwan. This document contains the earliest date seen for soybeans in Taiwan, or the cultivation of soybeans in Taiwan (Aug.

1893).

Note 4. This is the earliest English-language document seen (June 2001) that uses the word "crush" or the word "crushed" in connection with soybeans. Use of hydraulic presses is not mentioned.

Also discusses these oil-producing plants: (1) *Pueraria thunbergiana* Benth. "This trailing vine is found in North Formosa, but so far as I can gather, its tendrils are not, as in the Yang-tse Valley, and especially at Ho-k'ou, near Kiukiang, treated for fibres, from which is produced an excellent cloth, strong, durable, and cool" (p. 16). (2) *Brassica Chinensis*, L. "Rape is usually a winter crop in China... It is more widely cultivated in China than any other of the oil-yielding plants. The seeds are treated much in the same way as [soy] beans, being crushed, steamed, and being subjected to pressure... Rape oil is used for lighting as well as cooking" (p. 17).

(3) *Sesamum Indicum et Orientale*, D.C. Formosa exports a large quantity of sesame seeds to France where their oil is largely used to adulterate olive oil. "Sesame is essentially a food oil. Refuse seed-cake is much used in Formosa for adulterating opium" (p. 17).

(4) *Arachis hypogaea*, L. "The ground nut, a native of Africa, is extensively cultivated in China, not only for the food which the nuts supply, but also for the oil which they contain. Although the Chinese have not yet discovered a good practical method of removing the shells before pressing, yet the oil, necessarily impure on that account, is highly appreciated as a food, as well as a lamp oil. To obtain the oil, the nuts are roasted, rolled, winnowed—to get rid of the shells—steamed, and pressed. The plant prefers a sandy soil, such as is found in the neighborhood of Chefoo, but it appears to be equally at home in Western China and in Formosa. I may say, without fear of contradiction, that these nuts will be found on every roadside stall in China" (p. 17-18).

And (p. 18-19): (5) Seeds of the vegetable tallow tree (*Stillingia sebifera*, S. and N). (6) Tea seeds (*Camellia thea*, Link). (7) Camphor laurel (*Cinnamomum camphora*, N. and E.). (8) Castor oil plant seeds (*Ricinus* sp.). Address: Acting British Consul, Tamsui [Tan-shui or Tansui, in northern Taiwan].

35. *State (The) (Columbia, South Carolina)*. 1894. Peanuts for food. They are likely to be adopted as rations for the German Army. April 24. p. 5.

• **Summary:** "Rene Bache in Washington Star. The humble and slightly esteemed peanut is beginning to assume importance in the world. It is likely to be adopted for rations by the army of Germany, the Department of State is informed. In that country the oppressive cost of a gigantic military establishment makes demand for the cheapest possible food for soldiers. This requirement is met by the 'goober,' which is more nutritious than the best beefsteak and

highly digestible when properly prepared.

“Such, at all events, are the conclusions arrived at by Dr. Nordlinger and other German savants who have been investigating the subject. They have found that peanut ‘cake’—the residue after oil has been expressed from the nuts—is a highly concentrated food and suitable for human beings. It is calculated to be of great value to the peasant and industrial classes of Europe, which have suffered from a long and nearly exclusive diet of bread and potatoes. Hitherto it has only been employed as forage for cattle, sheep and horses.” Peanut flour and grits are good for use as human food; they are “especially recommended for the use of persons afflicted with diabetes. Also a fairly acceptable substitute for coffee is made from peanuts.

“Roasted: One interesting fact ascertained by the German savants is that peanuts, raw or roasted, are not nutritious at all, for the reason that the digestive functions refuse to assimilate them. The chewed particles pass through and out of the body almost unaltered. It is the same way with almonds and with nuts in general.” However boiled peanut grits are perfectly digestible, even by sick people.

“The German military authorities,... have been making experiments with peanut meal and grits, served to the garrisons at Frankfurt and elsewhere. They have reported favorably to the ministry of war at Berlin, and, if new trials are equally satisfactory, the new food will be adopted as an element of the rations and ‘field sausage’ of the army. It is also likely to find acceptance in the navy. One important quality is its sustaining power, enabling the consumer to endure much fatigue. In this particular it surpasses the hitherto unequalled ‘soja bean’ of China and Japan.”

Concerning nutritive value, “soja beans are more nutritious than white peas, peanuts are more nutritious than soja beans... Peanut meal only costs 4 cents a pound in bulk.

“Manufactured products: At present the most important use of peanuts is in the manufacture of oil. The American ‘goobers’ are larger, sweeter and better flavored than any grown in the world, but they are not so rich in oil as the African, the finest of which comes from Senegambia and the east coast. In East Africa and India great quantities of peanuts are thrashed out by machinery, only the seeds being exported, so as to save bulk. At the oil mills, the kernels are ground and then pressed. The best of the product is used for salad oil, the poorer quality is employed in making soap and as an ingredient of oleomargarine.” Much of the so-called “olive oil” sold in the United States is actually peanut oil, which costs only \$1 a gallon.

“The finest goobers: This country depends for supplies of peanuts chiefly upon Virginia. In that State 3,000,000 bushels of them are grown annually—more probably than the crops of all the other states put together. Tennessee comes next with 500,000 bushels. North Carolina, Georgia, Michigan and California also raise peanuts largely, but the Virginia ‘goobers’ are the finest of all and fetch the highest

price.”

“The greatest peanut market in the United States is Norfolk. Petersburg comes second and Smithfield third. In these towns [all in Virginia] there are many big factories employed in the business of rendering marketable the nuts that are sent in by farmers.” They are winnowed and screened, sorted, the bad ones picked out by young girls, then “packed in bags of 100 pounds each and shipped to jobbers in various cities. The jobbers sell them, raw or roasted, the latter to grocers mostly. They do the cooking in great cylinders that will hold twenty or thirty bushels at a time.”

“A generation ago most of the peanuts consumed in this country were imported from Africa. The African ‘goober’ is small and round, the shell containing only one kernel usually. The American ‘Ground nut’ is simply the African nut modified by conditions of soil and climate in the United States. Plant our peanut in Africa and before long it reverts to the original African type from which it was produced. It is said that peanuts brought the first peanuts hither.

“Now the American nuts have driven the African nut out of our markets altogether, and the latter are regarded as a curiosity here. Most of the peanuts grown in the dark continent are sent to France through the port of Marseilles to be pressed for oil. The finest of all ‘goobers’ are the Spanish, which are considered a fancy article and are mostly consumed by confectioners. They cost 20 cents a pound, retail, and are about one-third the size of ordinary ones. The big nuts are never so well flavored as the little ones.”

Note: The soja bean is also mentioned.

36. Nesbitt, R.T. 1897. Composition of different kinds of silage. Questions and answers. *Publication of the Georgia State Department of Agriculture* 22:57-66. For the year 1896.

• **Summary:** Questions from Georgia farmers are answered by R.T. Nesbitt. A table titled “Composition of different kinds of silage” (p. 55) gives the composition of “Soja bean” silage: Protein 4.1%, fiber 9.7%, nitrogen-free extract 6.9%, fat 2.2%.

The soja bean is mentioned briefly on pages 56 and 57. The section titled “Soja beans” (p. 64-66) gives details. Question: “During the Exposition I noticed in the Georgia building a display of soja beans, which I was told were a legume of exceptionally fine quality for stock feed. Please give me all the information possible as to this crop. I would like to know how it compares with our fieldpea, both as a food and as a renovator of the soil. Also when to plant and how to cultivate. What is the usual yield per acre?”

Answer: “As an improver of worn soils, and a valuable food for stock the soja bean ranks among our best crops. The bean is richer in fat than any of our other grains, and stock are very fond of the fodder. The latter if mixed with corn in the silo furnishes a better balanced ration than the corn alone.” An analysis from the USDA (as green fodder, dry



fodder, grain, and fertilizer) shows that, “as a fertilizer and improver of the soil, and as a food, the soja bean takes rank above our ordinary field or cow pea.” The terms “protein,” “fiber,” “nitrogen free extract,” and “fat” are defined in layman’s terms.

Groundpeas or Spanish groundpeas [probably peanuts] are discussed on pages 54, and 57-58. Address: Commissioner of Agriculture.

37. Bourguignon, L. 1898. Nicolas-Auguste Paillieux [In memoriam: Nicolas-August Paillieux]. *Revue Horticole: Journal d’Horticulture Pratique (Paris)* 70:176-79. April 16. [1 ref. Fre]

• **Summary:** This journal (*Revue horticole*) announced in its issue of Feb. 16 the death of Mr. A. Paillieux, who died in Paris on 8 Feb. 1898 at the age of 85 years. This long obituary discusses his life and work, including his work with the soybean. Born in Paris on 10 Sept. 1812, he was involved in commerce until 1871, when he began to devote his entire attention to horticulture and gardening. “A certain number of plants were propagated and popularized by Mr. Paillieux. Among the most important of these is the soybean (*le Soya, Soja hispida*), about which he published a complete monograph. But the greatest service rendered by Mr. Paillieux was the introduction and popularization of the Crosne [pronounced kron; *Stachys affinis* Bunge (*S. tubrifera*, *Naudin*), an edible tuber first imported from Japan to Crosne near Paris], which has taken a major place among our most precious winter legumes.” Absolutely unknown outside of China and Japan, it was sent to France by Dr. Bretschneider, physician at the Russian legation in Peking. This plant is now grown throughout France and in all the countries of Europe. Note: Common names of *Stachys affinis* Bunge are Chinese-artichoke and Japanese-artichoke in English, and *ganluzi* in Chinese. A native of Asia, where it is used as a human food and medicinally, this plant is not currently well known in English-speaking countries.

Paillieux also played an important role in introducing the chufa (*Souchet comestible; Cyperus esculentus*); in Spain, the tubers are used to make a drink called *Chufa*.

A portrait (illustration) shows Nicolas-Auguste Paillieux.

As does a later portrait from an unknown source. Address: France.

38. Bretschneider, Emil V. 1898. IV. Sea-Trade of the Dutch with Eastern Asia in the 17th century. In: Emil V. Bretschneider. 1898. *History of European Botanical Discoveries in China*. 2 vols. London: Sampson Low, Marston and Co., Ltd. xv + 1167 p. See Vol. I, p. 21-26. [3 ref]

• **Summary:** “The first appearance of the Dutch in the Indian Archipelago dates from the end of the 16th century.

1595—A “squadron consisting of 4 ships under the

command of C. Houtman sailed from Holland to the East Indies. Having visited in the next year several places in the island of Java and adjacent islands, they returned to Holland with a rich cargo of spices. This first attempt was followed by other Dutch commercial expeditions to India and the Archipelago, which also proved successful. In

1602—“The Dutch East India Company was established. The war which then issued between the Dutch, Spaniards and Portuguese for the possession of the Spice islands lasted till 1610, when the Dutch remained masters of these seas and monopolized the lucrative trade there. The seat of the Dutch government was first established in the island of Amboyna but...

1619—“It was transferred to the newly founded city of Batavia in Java, from which year may be dated the formation of the Dutch East Indian Empire.

1607—“Twelve years before the first commercial expedition of the Dutch to the Archipelago took place, J.H. Van Linschoten, a studious young Dutch-man had visited India. Having obtained a place in the suite of the newly appointed Portuguese Archbishop of Goa, he reached that place in 1583, and spent 5 years there. On his return to Europe he began to compile a book with the title: *Navigatio et Itinerarium in Indiam Orientalem*, which was first printed in 1599, and published also in Dutch. In 1885 the Hakluyt Society edited an English version of it. This book contains interesting accounts of India and other countries visited by the author, or of which he had gathered information from other persons. There are also a number of chapters devoted to the natural productions of India especially those of vegetable origin, fruits, drugs etc., accompanied with drawings. L. also speaks of some Chinese drugs, as Rhubarb, China root, China Camphor, and notices the Chinese Lac or Varnish. But his notes on plants are for the greater part borrowed from Garcia ab Orta.

1601—“It was in 1601, a year before the Dutch E. I. Company was founded, that Dutch ships made their first appearance in the Chinese waters. In this year the Admiral J.C. Van Neck, who had been sent out to the East with a small trading fleet by Dutch merchants, made sail for China. In Sept. 1601 he found himself, without knowing it, with his two ships off Macao. Some of the crew, who were sent on shore, were hung by the Portuguese, whereupon the admiral made haste to return to the Archipelago.

1604—“The first attempt was made by the Company to obtain a footing for their trade in China. W. Van Warwijk was sent with a commission to open friendly commercial intercourse with the Chinese, but owing to the influence of the Portuguese of Macao, this was refused.

1622—“J.P. Koen Governor of the Dutch settlements, sent out from Batavia, which city he had founded in 1619, a fleet of 8 vessels under the command of Bontekoe Van Hoorn and C. Reijersz, to attempt the expulsion of the Portuguese from Macao. This place having been bombarded

without any success and with considerable loss on the part of the assailants, the Dutch fleet sailed to the Pescadore [Pescadores, Penghu] Islands situated between Formosa and the mainland and the Dutch established themselves on one of the islands, and built a fort there. In the same year they visited Taiwan [sic, Taiwan] in Formosa, Amoy and Chin chew (Chang chou fu), but were not allowed by the Chinese authorities to carry on trade in the Chinese ports.

1624—"The Dutch removed from the Pescadore Is. to Formosa and built the fort of Zeelandia on an island at the entrance of the Bay of Taiwan.

1655—"The Company at Batavia resolved on despatching [dispatching] an embassy to Peking to the Emperor Shun chi in order to obtain free trade in some Chinese ports. P. de Goijer and J. de Keyzer were appointed envoys. The narrative of this embassy was published by J. Nieuhof, who had accompanied them as steward of the mission, with the title: *Legatio Batavica ad Magnum Tartariae Chanum Sung Teium, Sinae Imperatorem*, 1665. Comp. my Earl. Europ. Res. p. 25. The embassy started from Canton on March 17th 1656 in Chinese boats, followed up the Pe kiang or North River to Shao chou fu, then ascended an affluent of it which comes from the N. E., to Nan hiung chow. Then they had to cross the mountain range separating the province of Kuang tung from that of Kiang si. At Nan an fu in Kiang si they came again to a river, where they embarked. Then descending the Kan River they reached Nan ch'ang fu, sailed across Lake Po yang, entered the Yangtze kiang, reached at Yang chou fu the Grand Canal, which led them to T'ien tsin. Peking was reached on July 17th. The envoys were admitted to an audience, prostrated themselves before the Emperor, but did not obtain permission to trade. On Oct. 16th 1656 they set out on their return, and travelling by the same river way they had come, the embassy reached Canton on Jan. 28th 1657.

1662—"After occupying for about 38 years a large part of Formosa, the Dutch were expelled from the island, in Jan. 1662, by Cheng C'heng kung (Koxinga of the Portuguese), a powerful Chinese pirate, and thus lost their footing in China.-

1600—"In Japan the Dutch had been more successful in their commercial enterprises. According to Kaempfer, *History of Japan*, the first Dutch vessels visited Japan in 1600. Nine years later, in 1609, the Dutch E. I. Company sent several small vessels to Firando (N.W. of Nagasaki), where they were well received by the Japanese, and, in 1611, a formal edict in favour of their trade was obtained. A Dutch factory was established at Firando. The Dutch trade was opened in Japan by Jac. Spex sent by the Company in the quality of an envoy and subsequently chief of the factory. He left Japan in 1620, and in 1629 was appointed Governor-General of the Netherlands India. Subsequently Japan was closed against foreigners (Portuguese, Spaniards) with the exception of the Dutch and Chinese. From 1834, however,

the Dutch trade with Japan has been limited to the island of Decima (Deshima) in Nagasaki. After the year 1653 the Chinese pirate Koxinga began to harass with his fleet the forces of the new Tartar (Manchu) dynasty in China, and ravaged and plundered the coast of the Fu kien province. He even established himself in the islands of Amoy and Quemoy and built fortifications there. After the expulsion of the Dutch from Formosa, the Council at Batavia decided to send a fleet to China, and to propose to the Tartars to operate conjointly against Koxinga.

1662—On June 20th 1662 B. Bort, in the capacity of envoy left Batavia with a squadron of twelve vessels, and reached Hoksieu (Fu chou fu) on Aug. 14th. The vice roy [viceroy] Sing la mong and the commander-in-chief of the Tartar forces Lipui, then living in the interior of the province, induced the Dutch-envoy to send two of his officers to the vice roy's camp, to arrange concerning operations. These officers performed the journey to this camp, at a place called Sinkien (?), in 11 days, conferred with the commander and returned to Fu chou fu. After leaving this port the squadron visited several ports on the coast, and amongst them Swatow, and on April 11th 1663 reached Batavia. In a few months Bort was again despatched to China with a reinforcement of 16 other ships. Meanwhile Koxinga had died and his son prosecuted his father's depredations. The Dutch fleet, in conjunction with the Tartars, attacked the pirates and succeeded in expelling them from Amoy and Quemoy. The Dutch were then permitted to trade with Canton, Fu chou and Chin chew (Chang chou fu). Continued. Address: Late physician to the Russian Legation at Peking.

39. Simmonds, Peter Lund. 1898. The dictionary of trade products, manufacturing and technical terms, moneys, weights, and measures of all countries. New ed., revised & enlarged. London and New York: George Routledge and Sons, Ltd. viii + 510 p. 20 cm.

• **Summary:** This book consists of a reprint of the body of his 1867 book *Commercial Dictionary of Trade Products*, plus a different preface and a shorter supplement (p. 423-510). New soy-related entries in the Supplement include: "Pea oil, a fixed oil obtained in China by pressing the seeds of *Dolichos soja*. "Soy bean (*Glycine soja*. This pulse, a native of the far East, is now grown in Thibet, Assam, and other parts India)." "Tofu, the oil-cake of beans and peas in Japan and China, used for soups and sauces.

New non-soy entries in the Supplement include: Alfalfa, earth-pea (*Voandseia* [sic, *Voandzeia*] *subterranea*), ginguba (a name in Angola for the ground-nut), yaourt [yogurt] (a name among the Turks for fermented milk).

Note 1. This book has no date on the title or copyright pages. The most recent date seen in the Supplement is 1891 (p. 500—Telescope). Note 2: Peter L. Simmonds lived 1814-1897. Address: F.L.S., F.R.C.I., Vice-President of the City of London College, 16 Whittingstall Road, Fulham [England].

40. Wood (T.W.) & Sons. 1899. Classified ad: Cow peas. The famous forage crop and soil improvers. *Charlotte Daily Observer (North Carolina)*. June 3. p. 8.

• **Summary:** “We are headquarters for these and all Southern specialties, including Soja Beans, Velvet Beans, Pearl or Cat-tail Millet, Teosinte, Bermuda Grass, Ensilage Corn, Spanish Peanuts, Chufas, Sorghums, etc.

“Write for prices, and our interesting giving full information about these crops.” Address: Richmond, Virginia.

41. Redding, R.J. 1904. Farms and farmers: Lucerne or alfalfa (Letter to the editor). *Atlanta Constitution (Georgia)*. July 18. p. 10.

• **Summary:** “‘Alfalfa’ is simply the Spanish name and ‘lucerne’ is the French name, for the same plant. Its botanical name is *Medicago Sativa*.” It is also called Spanish trefoil, French luzerne, and medick.

“In regard to nutritiousness, analysis as well as actual feeding experience shows that lucerne stands at the head of its class. As a green forage plant it excels crimson clover, soja bean, red clover, alsike clover and cowpea, in nutritiveness—far and away. As a hay it still leads the list just given. Of course it is very far superior to the best grass hays. It is excelled as a hay only by vetch and soja beans.

“The yield of lucerne under the most favorable conditions may, in the south, exceed six tons of cured hay per acre, or, if cut and weighed green, from 20 to 25 tons of green food.” Address: [Director, Georgia Agric. Exp. Station near Griffin, Georgia].

42. Li, Yu-ying. 1905. Le lait végétal fabriqué en Chine [The vegetal milk made in China]. In: 2e Congrès International de Laiterie: Compte-Rendu des Séances (2nd International Dairy Congress: Proceedings): Paris: Comité Français—Fédération International de Laiterie. 548 p. See p. 387-89. Held 16-19 Oct. 1905 at Paris, France. [Fre]

• **Summary:** The president of this international milk congress introduces Li Yu-ying as attaché at the Chinese Legation, and official delegate to the congress. Li begins by expressing his happiness at being able to speak to the congress and getting to know the many scholars and very competent people from many countries.

“In China, not much animal milk is consumed. It is replaced by another product: *vegetable milk (le lait végétal)*. This latter product could not be used here and, therefore, is of little interest to you. I will speak to you about it only as a curiosity, first to explain the special method employed in my country for the production of vegetable milk and vegetable cheese [tofu], and finally to increase interest in these products because of their hygiene and economy.

“Everyone knows that animal milk is an excellent substance with numerous advantages. One may ask,

therefore, why so little of it is consumed by the people of China. The reason is because it is relatively expensive and because cows cannot be raised in all parts of China. Dairying is practiced only in the north and the west of China. In the other provinces dairying is difficult because of the climate and the nature of the soil; so vegetable milk is consumed there.

“The latter is made with the seeds of *Soja hispida* or ‘oil peas of China.’ This is an annual legume which has been imported to England, Spain, Belgium, and France. Presently it is widely cultivated in America as forage.

“Mr. Lechartier, director of the agronomic station at Rennes, has experimented with this plant in France; he obtained yields of up to 25,000 to 30,000 kg of green forage per hectare. This plant is therefore already known here.”

“As forage, the soja hispida is as rich in protein as clover (*trèfle*), horse beans or dried kidney beans (*les fèves*), etc.; but it is richer in fats than the other legumes. The seeds are richer in nitrogenous materials [protein] than other plants of the same family. Analyses show that they contain 30% protein, oil, and little starch.

“The seeds of this plant can also be used to make a cheese (tofu [tofu]) which is a major source nourishment for the peoples of China and Japan. It is consumed, in effect, every day and at every meal, as a main dish.

“The production of these two products [milk and cheese] is very simple. First the seeds are cooked, then they are pressed strongly to obtain a sort of puree, which is coagulated by a mineral salt that plays the role of rennet. The fresh cheese, which is made daily, must be sold and consumed the same day. It can be used in recipes like vegetables or meats. However it can also be preserved, either hot, or by putting it in a salt solution: in this way one obtains various cheeses which are used as desserts, as following:

“(1). Salted and smoked cheese (*Le fromage salé et fumé*), which in both flavor and form bears some resemblance to gruyere cheese. It can be stored for a rather long time; (2) Salted cheese (*Le fromage salé*), white in color, whose taste somewhat resembles that of goat cheese; (3) Fermented cheese (*Le fromage fermenté*). Its color is white, yellow, or gray, and its flavor is very strong, like that of Roquefort.

Note 1. It is unclear whether this “fermented cheese” is simply traditional Chinese fermented tofu, or whether it is a new creation in which the traditional Chinese product is somehow made to resemble French cheeses, such as Roquefort. If it is the latter, this would be the earliest document seen (Oct. 2013) that mentions a Western-style cheese, and it would be the world’s first such product, probably soy-based and non-dairy.

“The processes which give rise to Chinese milk and cheese also give residues [okara] which are not lost. They are employed either as fertilizer, or as feed for farm animals. Thus nothing is wasted from soybeans. Moreover, the



factories where this plant is processed are very numerous, and the products made by them are the most moderately priced. A square or cake of vegetable cheese (*carré de fromage végétal*) (11 by 10 by 2½ cm), consumed daily by one person, costs about one centime, or about one-fiftieth the price of an animal cheese of average price.

"It is of interest, finally, to compare the products of the animal dairy with those of the vegetable dairy, not only in terms of their similarity in appearance, but also in terms of their chemical composition. It is well known that animal milk contains a large proportion of casein; the same is true of vegetable milk, which contains legumine that has the same chemical formula as casein.

"Furthermore, during processing, the peas (*le pois*, i.e. soybeans) undergo a complete chemical and mechanical transformation which concentrates the nutritive parts and eliminates the others; it is this which explains the richness of the vegetable milk and cheese in nutritive principles.

"After all these considerations, you can realize the interest present in this industry in China.

"It can also be interesting in places where raising livestock is impossible. It is evident that this would be more difficult than in the countries which produce animal milk in large quantities. I am well aware that animal milk has a real superiority over vegetable milk, but doesn't it also have its disadvantages: Fraud, on the one hand, and its contagious diseases on the other? Moreover, milk merchants have various categories of milk at different prices; it is clear that the most expensive is the best, and vice versa. But the consumer knows full well that some milk is not of good quality, yet he is obliged to take it in order to earn money. Thus it is the fate of the poor to be condemned to drink milk of inferior quality, and often fraudulent. However, vegetable milk does not support fraud and cannot transmit contagious diseases. It is the same for everyone; the poor consume the same product as the rich.

"Let the culture of soybeans expand therefore in Europe. One might try to make vegetable milk which will be destined, not for those who have the means to buy good milk, but rather for those who can only afford low-price milk; thus, fraud becomes useless, and this will be a benefit for public hygiene and for the purse of poor people."

Note 2. This is the earliest document seen (April 2015) concerning Li Yu-ying. It is also the earliest publication seen by him on the subject of soya.

Note 3. These proceedings contain a list of attendees and of excursions. Address: Attaché at the Chinese Legation, and official delegate.

43. Morse, Hosea Ballou. 1908. *The trade and administration of the Chinese empire*. London, New York, Bombay, and Calcutta: Longmans, Green and Co. xv + 451 p. See p. 206, 296, 318. Illust. Index. 22 cm.

• **Summary:** An important early book on this subject. A

second edition was published in 1913, and a third edition in 1921. The dedication states: "Thirty-three years ago [from 1907, i.e. in about 1874] four young men came to China direct from the halls of Harvard. To the other three, the fourth dedicates this work." The Preface begins: "This book is intended to portray the present state of the Chinese Empire, with such record of the past as will show by what process the evolution of the existing state has been reached." It continues: "The first two chapters on Chinese History have been written by the Rev. F.L. Hawks Pott, D.D., President of St. John's College at Shanghai, and author of the useful *Sketch of Chinese History*. His task of condensing the history of forty centuries into as many pages has been performed in a very judicious way."

A color map (facing p. 8) shows "The gradual extension of the Chinese empire." China originated in the northeast part of today's China, in the area around Shansi, Chihli, and northern Shantung provinces, southeast of Peking. The main river was the Yellow River, and the key cities were Lo-yang / Luoyang (the capital of several early dynasties) and Ch'ang-an / Changan or Hsi-an / Xi'an (the capital of 11 dynasties, beginning with Chou-founded 1111 B.C.). The empire gradually spread southward.

In Chapter 7, titled "The provinces and treaty ports," under Manchuria (p. 205-09) we read (p. 206): "The western part of this province is made up of the plain of the Liao and the valleys of its tributaries, and grows wheat and durra for food, and beans from which are made an esculent and illuminating oil, and bean-cake shipped to restore exhausted fertility to the fields of Japan and of Kwangtung." These beans are soy beans.

Chapter 9, titled "Foreign trade" notes that "silks of China reached the Roman Empire, following presumably the Central Asian caravan routes which were later followed by the Polo brothers and their nephew, Marco Polo" [lived 1254-1324; arrived in China 1375].

"The Portuguese were the discoverers of the East, as the Spanish were of the West, and the first recorded arrival of a European ship in China was that of Raphael Presetrello, who sailed from Malacca [a city in 21st century Malaysia on the Strait of Malacca] about 1511. Six years later, in 1517, Fernando Perez de Andrade entered Canton waters and was well received by the local officials, then as ever quite ready to encourage trade, and was allowed to proceed in person to Peking." The Spanish first arrived in China in 1575, when they were well received at Canton.

In this chapter, in the section on Exports, is a subsection on [soy] beans which states (p. 296-97): "Beans are used to make an oil for cooking and, prior to the introduction of kerosene, for illuminating purposes; the bye-product of this process, bean-cake, is used to fertilise the fields chiefly of Kwangtung and Japan. The foreign export of beans is first recorded in 1870 with shipment of 578,209 piculs, and of bean-cake in 1890 with 96,297 piculs; in 1905 the export

of beans was 2,665,523 piculs, of which 80 per cent. went to Japan, and of bean-cake 2,897,948, entirely for Japan; in addition, over two million piculs of beans and two and a half million piculs of bean-cake were imported into Kwangtung ports. The chief source of production is Manchuria, next to that Shangtung, Hupeh, and the lower Yangtze.”

The section titled “Oil seeds” (p. 298) discusses only cotton, rape, and sesamum seeds; these have only recently entered into foreign trade. In 1888 the export of rape-seed was 873 piculs, and of sesamum-seed 3,027 piculs. The sesamum seed goes chiefly to Germany and Japan.

In Chapter 10, titled “Internal Trade” (p. 302-22), the subsection on “Beans” states (p. 318): “Beans were shipped in 1903 (much of the trade was diverted from Manchuria during the Russo-Japanese War) to the extent of 3,423,766 piculs from Newchwang, 1,928,543 piculs from Hankow, 404,063 piculs from Chinkiang, and enough from other ports to make a total of 6,327,080 piculs; of this quantity 1,836,707 piculs were shipped to Japan, some 72,000 piculs to other foreign destinations, and the balance, except 590,000 piculs for Amoy, went to the Kwangtung ports, Canton and Swatow. In the same year *Bean-cake* was shipped, 4,553,367 piculs from Newchwang, 1,192,948 piculs from Chefoo, 583,095 piculs from Hankow, 423,447 piculs from Chinkiang, with total shipments of 7,030,325 piculs; of this quantity 3,400,444 piculs went to Japan, and the balance, except 731,161 piculs for Amoy, went to Kwangtung.”

Also discusses internal trade of ground-nuts, hemp, jute, and ramie (p. 319). “Oil-seeds” (cotton-seed, rape-seed, and sesamum-seed) and “Vegetable tallow” (expressed from the seeds of *Stillingia sebifera*) are discussed on p. 320. A table (p. 321) gives details on railways in for each province of China (incl. Manchuria), including the points served and length in miles (completed, and under construction in late 1906). Address: A.B. (Harvard), Shanghai, China.

44. *Chemist and Druggist (London)*. 1909. Pharmaceutical Society of Great Britain: Evening meeting. 75(25):928-29. Dec. 18.

• **Summary:** At the evening meeting, the “six fixed vegetable oils” were discussed, starting with Olive oil. A table (p. 928) gives the iodine absorption range and the saponification number for the following: Olive oil, edible (“The annual production of olive oil in Italy is 75,000,000 gallons, and in Spain 13,000,000. It is often adulterated with less expensive oils”). Olive oil, commercial. Sesame oil. Poppy oil. Walnut oil. Cottonseed oil. Lard. Arachis [groundnut / peanut] oil. Coconut oil. On page 929 “soy-bean oil” is mentioned several times.

45. Carson, John M. 1909. Soya bean and products. *Special Consular Report (U.S. Bureau of Manufactures, Department of Commerce and Labor)* No. 41. Part 5. 35 p. Erroneously numbered Special Consular Reports, Vol. XL.

• **Summary:** An outstanding, comprehensive report.

Contents: Introduction. I. Countries of production. China: Newchang (Varieties of beans and amount produced {in centals [hundredweights; 1 cental = 112 pounds]}, methods of cultivating and harvesting, prices and exports, shipments to Europe—use by natives), Dalny (Manufacture of bean cake and oil, preparing the cake, expressing the oil and wages paid, freight charges to Dalny, exports, stock on hand, and prices), Chefoo (Beans imported for cake manufacture, quantity and value of output, bean vermicelli made by a peculiar process [from the small green bean *lū tou* {mung bean}], preparation of beans, drying of product and prices [for vermicelli]), Shanghai (Extent of export trade in beans), Shantung (manufacture of bean oil and cake, harvesting and pressing, shipping and prices), Swatow, Tientsin (Exports of raw beans, shipments of bean cake, extent of trade at Tientsin). Tables (p. 5) show prices and exports of soya beans, bean cake and bean oil at Newchang for the years 1905-1908. Japan: Cost of production and prices (of soya beans, quite detailed), imports of beans and cakes, use of the bean as food (shoyu, miso, tofu, koya-tofu, natto, flour), Kobe (Beans as human food {eaten boiled with a little soy [sauce], “made into bean curd, and a kind of sauce made of wheat, beans, and salt”}—small exports {“The total exports of beans, pease, and pulse [incl. soy] in 1908 were valued at \$25,971, of which about \$24,000 worth went to Hawaii, the United States, and Canada for use by the Japanese residents in those countries as an article of food”}, manufacture of cake), Nagasaki (Production of beans, imports of beans—market prices). Shipments from Vladivostok \* [Russia, of soybeans probably grown in Manchuria] (Fluctuations in prices, shipments during present season, immense shipments planned next season (by Mitsui)).

“It is the intention of Mitsui Bussan Kaisha, the largest exporter from this port, to ship about 200,000 tons of beans via Vladivostok during 1909 and about double that quantity via Dalny. Many large contracts have been made for next season, and from present indications a strong effort will be made against the control of Mitsui Bussan Kaisha as the Chinese are making arrangements to deal direct with the European market without the aid of the Japanese” (p. 18).

Tables show: The quantities and value of soya beans, soya-bean cake, and bean oil imported into Japan during the year 1908 (p. 15). The soya bean harvests (in bushels) reported in various Japanese districts (p. 16).

II. Markets. Denmark: Experimental imports made, views of an importer. France: High duties prevent importation of soya beans, soya-bean flour bread used by diabetics, unknown in Calais district. Germany: Danger of feeding cattle on soya-bean products, oil value—prices at Hamburg, comparative food value of the bean. Italy: Beans imported and cultivated in limited quantities, prices of soya products—American cotton-seed oil, not imported into Catania, home products supply Piedmont district.

Netherlands: A great future for the soya-bean trade predicted, prices of the bean and bean cake, soya cake as cattle feed, manufacture of soya-bean products begun, English soya-bean cake defective. Norway: Imports of soya-bean meal and cotton-seed meal. Russia: Beans and products unsatisfactory as feeding stuffs. Spain: Soya bean unknown in Valencia district [They are neither cultivated nor imported in this district]. Straits Settlements [Singapore and Malaya]. Sweden: Soya-bean products introduced through England. Comparative value of cattle feed [work by Nils Hansson of Sweden], comparative prices of feed stuffs. Turkey. England: Liverpool (Conversion of the soya bean into cake and meal), Plymouth (Soya cake and meal extensively consumed), Southampton (The bean appreciated as a fattener and as a dairy ration, the soya bean as human food [for use in diabetic diets]). Ireland: Chinese bean products are favorably received, soya bean introduced in Belfast, small imports at Cork. Scotland: Statistics as to use in Dunfermline not available, test of feeding value of soya cake [by Prof. Douglas A. Gilchrist], Edinburgh mills making experiments (based on 1909 report 1909 of U.S. Consul Rufus Fleming from Edinburgh).

III. Competitive American exports. Tables (p. 35) show exports for 1907, 1908, and 1909 of cotton-seed meal, cotton-seed oil, and cottolene, lardine [not defined: presumably shortening made from cottonseed oil], etc. to major countries, especially in Europe.

The Introduction notes: "In compliance with requests from manufacturers of cotton-seed products in the United States, who desired that an investigation be made of the production and use of the soya bean and its manufacturers in the Far East and of the extent to which they compete with American cotton-seed products in the European markets, the reports following have been submitted by consular officers in the various countries concerned..."

"The reports of the consular officers have been placed in two groups, the first having to do with the countries that produce the soya bean and the second with the countries that are sought as markets. Statistics as to the imports of soya-bean products in many European countries were not available at the time the reports were submitted, but inasmuch as the prices quoted were generally lower than for other seed products, emphasis has been laid on the relative merits of the two classes of goods as shown by experiments and analyses in these countries. These manufacturers will have to work in meeting this new competition."

Note 1. This is the earliest document seen (Dec. 2007) concerning soybean products (oil or meal) in Turkey, Denmark, Ireland, the Middle East, or Sweden (one of two documents); soybeans as such have not yet been reported in any of these countries. This document contains the earliest date seen for soybean products in the Middle East or Turkey (1909).

Note 2. This is the earliest English-language document

seen (Nov. 2013) that uses the term "soya-bean flour." Address: Chief of Dep.

46. Wing, Joseph E. 1909. *Alfalfa farming in America*. Chicago, Illinois: Sanders Publishing Co. 480 p. See p. 160. Index. 21 cm. [5 ref]

• **Summary:** The frontispiece (facing the title page) shows a portrait of Joseph E. Wing as a fairly young man. This is an excellent, detailed book. The lengthy introduction (p. 3-45) tells the story of how he discovered alfalfa, and its many benefits to agriculture. It begins: "In March, 1886, the writer, a tall awkward young man fresh from the fields of Ohio, was traveling by rail through Utah. Near Provo he began to see snug farms with trees, meadows, orchards, granaries, and haystacks."

The green hay in the stacks was freshly cut lucern, or alfalfa, which had not spread much east of the valleys of Utah. Lucern was the old European word, whereas alfalfa was the Spanish word that had come with the crop from Chili [Chile] to California. He learned that alfalfa was taken to Latin America from Europe (mainly Spain). It came to the western United States from Chili by way of California in 1851—during the Gold Rush.

Next the boy lived for a time in Salt Lake City and cared for his uncle's cow. She was fed on alfalfa and gave large amounts of milk. Then he worked on a cattle ranch along the Green River, where it meets the Price River in Utah. There he learned more about alfalfa." Includes long chapters on history (p. 46-77), varieties (p. 78-83), habit of growth (p. 84-96) etc. Joe Wing pioneered the introduction of alfalfa to Ohio and the Midwest.

In the chapter titled "Manures and humus in soil" (p. 150-75) are sections on cowpeas (the pea vines smother weeds), turning under green cowpeas, the soy bean, crimson clover, and melilotus or sweet clover. The section on "The soy bean" states (p. 160-61): "An easier crop to grow than the cowpea is the soy bean, and it is also a soil enricher and affords much humus when turned under. Soy beans are of many sorts. The large growing kinds, like the Mammoth Yellow, make the most vegetation for turning under, while the smaller growing sorts make most seed in northern latitudes... To get a money crop out of soy beans and yet have a lot of humus-making material is easy. One does it with hogs, turning them in after the bean crop is mature and letting them harvest the beans. Afterward the stems remaining with many leaves will be plowed down.

"Soy beans respond well to fertilization with phosphatic fertilizers. The larger grows the soil-building crop, whether of soy beans, cowpeas, crimson clover or anything else, the larger the alfalfa will grow after it. Therefore fertilizer applied to the cover crop is all to the good."

Alfalfa (*Medicago sativa*) is a deep-rooted European leguminous plant grown for hay and forage. Originating in Italy, it has two names in English. The older name "lucerne"



or “lucern,” still the plant’s main name in British English, derives from the French *luzerne* and comes from a river valley in northern Italy; it was first used in English in 1626. The newer name, alfalfa (first used in 1845) comes from the Spanish, and is a modification of the Arabic dialect *al-fasfasah* the alfalfa.

Cow’s who eat alfalfa, give abundant milk. It is easy to grow, but the soil must be inoculated the first time it is grown in a new field. Immediately after harvest, it is piled in big cocks and left there to dry.

Joe Wing returned home just before Christmas, 1889, and his aging father offered him the run-down family farm named Woodland Farm (p. 17-21). He hesitated, then decided to try an experiment. After some temporary setbacks, he found that alfalfa also grew well in Ohio. After years of hard work, he made the family farm profitable. He soon came to believe that alfalfa, fed to lambs, and grown with corn, could rejuvenate old farms in the Midwest. Most Midwestern crops are “affected vastly by the vicissitudes of the weather. Alfalfa once rooted in dry rich soil has the permanence of the wild native things.” The deep roots were unaffected by drouths. Manure from the lambs was used to fertilize the fields. Joe Wing soon devoted his life to sharing what he had learned about alfalfa with other farmers in the Midwest.

“These two crops, corn and alfalfa, constitute almost all that is grown on Woodland Farm, excepting a few acres of soy beans and the blue grass pastures,...” (p. 44). Address: Staff Correspondent of *The Breeder’s Gazette*, [Mechanicsburg, Ohio].

47. *Agricultural J. of the Mozambique Company*. 1911. Notes from exchanges. 1(2):76-83. June. See p. 78, 83. [1 ref]

• **Summary:** The section titled “Copra’s rival: The soya bean” (p. 78) states: “Hamburg, March 8th: The East Asiatic Company of Copenhagen is obliged to enlarge its soya cakes mill at Islands Bridge, near Copenhagen. The new plant will be able to treat 150 tons of soya beans a day. When the new plant is finished, a mill erected by a German company at Stettin will also start. The East Asiatic Company is interested in this German company, not only by share capital but also by the delivery of soya beans. The bean supply that will be required by the new mill this season is estimated at 10,000 tons. For shipment of soya beans the company has bought the steamer ‘Arabien,’ constructed by Swan & Hunter at Newcastle. With a capacity of 8,500 tons, the new steamer is the largest of the Danish commercial fleet.—*L. & C. Express*, March 10th, 1911.”

The section titled “Market Report” (p. 83) states: “The following are the latest London prices available by mail:—... Soya Beans (on spot), per 200 lbs, 12 shillings... Soya Beans (June-July shipment), per 200 lbs, 15 shillings. Soya Bean Oil, per cwt. £1 9 shillings.” Note: 1 cwt = hundredweight = 112 pounds. Address: Mozambique.

48. *Agricultural J. of the Mozambique Company*. 1911. The soya bean. 1(3):101-03. Sept.

• **Summary:** Contents: Introduction. Cultivation. Harvesting. Storing. Yield. This article begins: “The Soya bean (*Glycine hispida*) was practically unknown on the European market at the beginning of 1908, but since that time it has become an article of considerable interest to oil-seed crushers and others, as will be realised from the fact that recently over 4,000,000 bags of the yellow variety have been imported into Europe from Manchuria alone.

“Such figures (added to the fact that the demand is still very greatly in excess of the supply, and that the former is likely to increase considerably) will no doubt create more than a passing interest in the minds of farmers in this Territory, and it would therefore seem that the time is opportune when a few notes on the cultivation, harvesting, &c., of this legume may be useful”(p. 101).

Most of the rest of the article is general information, but with a few sentences are relevant to Mozambique: “In this Territory probably the best time to plant is in February, thus allowing the crop to be harvested during the dry season” (p. 102). “It is unlikely for some time to come that farmers in this Territory will desire to plant the bean for any other purpose than that of producing crops for export, so it is hardly necessary to refer further to other phases of Soya bean culture” (p. 102).

“The average yield in America works out at about 1,600 to 2,500 kilos per hectare, although the latter figure has in exceptional cases been exceeded. In 1920 as much as £8 10s. per ton (c.i.f. London) was realised, due to a shortage in the supplies of linseed; but the price ordinarily ranges from £6 to £7.”(p. 103). The last three sentences read:

“The Soya bean has proved itself to be so well adapted to the manufacture of oil, oilseed cake, soap, margarine, candles, flour and a variety of other articles that it would seem certainly to merit the serious consideration of agriculturists in this Territory.

“Messrs. Lever Bros., Durban, Natal [South Africa], are interested in the production of oil from Soya beans, and are offering 10s. 3d. [10 shillings, 3 pence] per bag of 200 lbs. (f.o.r. [free on rail] at Durban).

“It is hoped to distribute small lots of various varieties of Soya beans to farmers in this territory, so that the above notes on the method of cultivation and harvesting should be useful to those experimenting for the first time this season.” Address: Mozambique.

49. Heron, E.H. 1911. O feijao soya e os seus usos [The soybean and its uses]. *Reparticao de Agricultura Mozambique, Boletim (Mozambique Department of Agriculture, Bulletin)* No. 5. 16 p. [Por; Eng]

• **Summary:** This excellent bulletin is written by a man who shows considerable knowledge of the subject. It is written in both Portuguese and English, with parallel text in two

columns on each page. This information is of considerable value at a time when cultivation of soya beans is spreading in Africa. However there is no indication that the soybean has ever been in or cultivated in Mozambique.

Contents: The Soya Bean and its uses. Varieties: The yellow, the greenish-yellow, the black, the brown, the green, the white. Soil. Methods of culture. Quantity of seed sown per acre. The inoculation of Soya Bean. Harvesting for forage. Harvesting for seed. Threshing. Yield of seed. Average analysis (nutritional composition) of 6 varieties of Soya Bean seed. Yield of forage. Analyses of green fodder and cured hay. As pasturage. As a soil renewer. Soya Bean meal and cake (incl. composition). Summary.

Of more than 200 varieties tested, the yellow variety is recommended for Portuguese East Africa; it contains 17-19% oil, whereas the black variety has 16.80%, the green 17%, and the white 16.60%. These percentages may vary depending on the degree to which each variety is adapted to its environment, the soil quality, etc.

Concerning yields, 100 pods have been obtained from one plant, but a good average for one field is said to be 40. The height of the plants and the number of days to maturity varies. The yellow variety grows to a height of 3-5 feet and requires 120-150 days to mature; its seed must never be planted more than 2 inches deep. The greenish-yellow grows to a height of 3-4 feet, and the black 4-6 feet. The brown variety, which matures in 100 days, grows so tall that it tends to fall over [lodge]. The green matures in 90 days, grows as high as 3 feet, and produces kidney-shaped seeds, green throughout, and much larger than any of the other varieties.

When harvesting a crop for seed, it is generally desirable to do so shortly before the pods are mature. If they become too ripe, they are likely to burst open [shatter] during drying and transportation to the machine, this causing a large part of the seed to be lost. A yield of 20 bushels [per acre] can generally be obtained on relatively poor soil, and an average of 25-40 bushels under average conditions. One bushel weighs between 20.5 and 21 lb.

A table gives an average analysis of the six chief varieties gave the following results (fresh or air-dried seed): Water 7.70%, protein 35.40%, fat 20.35%, nitrogen free extract [starch, sugar, and gums] 26.15%, fiber 4.60%, and ash [minerals] 5.79%.

When grown for green fodder or green manure, a yield of 7-12 tons/acre can be obtained, depending on the soil.

The soya bean is especially well adapted to the maize and cotton belts. It generally requires about the same temperature as maize, and while it develops best on fairly fertile loams and clays, it grows well on poorer soil than maize will, provided that inoculation is present. The yellow variety succeeds well on sandy soils. The soya bean resists drought extremely well, yet it can also survive a period of excess moisture better than cow-peas or even maize. If the soil is too rich, the plant will develop at the expense of the

seed. Thus, for seed production, a poorer soil is preferable. The ground can be irrigated if necessary.

Concerning inoculation: Like other legumes, the soya bean can utilize the nitrogen in the air and add it to the soil by means of root nodules. These nodules are caused by certain bacteria, and if they are not present, soya bean plants will grow poorly; many will turn yellow and die. In fields where the crop has not been grown before, some difficulty may be expected during the first season from lack of inoculation. However a new field may be inoculated by either the soil transfer method, or by the use of pure cultures. The soil transfer method consists in scattering soil from a well-inoculated soya bean field over the new ground at the rate of 200-300 lb/acre. To ensure even scattering, this soil should be thoroughly mixed with several times its weight of ordinary soil. The scattering should be done on a cloudy or wet day, or late in the evening, and harrowed in immediately, as bright sunlight is very harmful to the germs [bacteria]. When the first crop is a failure in isolated places where neither pure culture nor inoculated soil can be obtained, a small crop must be grown successively 2-3 times on the same plot until a good growth is apparent, showing that the soil has become inoculated; such soil can then be used to inoculate large areas.

"The Soya Bean should be an invaluable crop in the Zambezia District. It could be planted in the cocoa-nut plantations, to enrich the soil, give fodder to the working cattle and be a source of profit in supplying food to the natives; the surplus seed being sold readily in South Africa. It also helps in keeping down the weeds."

"In West Africa, great progress has been made in the cultivation of Soya Bean, where the percentage of oil in the beans is higher than in those from Manchuria, Japan, and U.S.A. There is no reason at all why Portuguese East Africa should not do just as well and introduce the Soya Bean as another staple crop.

"Taking into consideration the rainfall, climatic conditions, and the rich, sandy and open nature of the soils found in the higher land in Gaza and Inbambane, the Soya Bean should prove a profitable crop.

"There is a ready market in Europe and South Africa the price being about £8 per ton."

Note: This is the earliest document seen (Aug. 2009) concerning soybeans in connection with (but not yet in) Mozambique. Address: M.H.A.C., Mozambique.

50. *Tropical Life (England)*. 1911. Soya bean cultivation in Portuguese Africa (Abstract). 7(10):204. Oct. [1 ref]

• **Summary:** An English-language summary of the following French-language article: Heron, E.H. 1911. "O feijao soya e os seus usos" [The soybean and its uses]. *Reparticao de Agricultura Mozambique, Boletim* (Mozambique Department of Agriculture, Bulletin) No. 5. 16 p.

51. Gibbs, H.D.; Agcaoili, F. 1912. Some Filipino foods. *Philippine J. of Science* 7A(6):383-401. Dec. Section A. Plus 6 unnumbered pages of plates at end. See p. 398-99 + plates III, IV. [2 ref]

• **Summary:** “Toyo sauce—This condiment is made principally by Chinese from soja beans, *Glycine hispida* Maxim., imported from China. It is a Chinese sauce of the Worcestershire type.” Boiled beans and salt are placed in earthenware jars and spontaneous fermentation is allowed to go on in the sun for 2-4 months (see plate V). “The fermented mass is again boiled for another 12 hours, and the clear liquid is bottled and sold under the name of the toyo sauce. Sometimes it is boiled two or three times producing different grades of strengths of sauce. Molasses or sugar are sometimes added, and this variety is called *si yao* (Chinese).”

Photos show: (1) A man in a bihon (thick rice vermicelli) factory using a push-pull apparatus, suspended by ropes from the ceiling, to rotate a traditional stone mill.

Note 1. This same kind of apparatus and mill are used in traditional shops making tofu throughout East Asia.

(2) Soja beans fermenting in earthenware jars, covered with conical woven bamboo lids, in a courtyard, in the manufacture of toyo sauce.

“The Macao Chinese add a quantity of wheat flour to the boiled beans and dry the mixture in thin layers on trays several days before placing in jars for fermentation. This process hastens the fermentation.” Note 2. Macao [Macau] is a Portuguese overseas territory, located about 40 miles west of Hong Kong.

Table XVIII gives “Analyses of toyo sauce,” including regular toyo, toyo made with sugar, and crude molasses.

Note 3. This is the earliest document seen (April 1912) that uses the word “toyo” or the word “toyo sauce” to refer to Filipino-style soy sauce. Address: 1. Assoc. Prof. of Chemistry, Univ. of the Philippines; 2. Food and Drug Inspector, Bureau of Health. Both: From the Lab. of Organic Chemistry, Bureau of Science, Manila.

52. Barrett, O.W. 1913. Current notes—July. *Philippine Agricultural Review* 6(7):348-55. July. See p. 350.

• **Summary:** The section titled “Soya oil” (p. 350) states: “According to the Daily Consular and Trade Reports the new process for the extraction of oil from soya beans is now a success. This process employs gasoline as a solvent, and in this way the cake or residue, known in Germany as ‘schrot,’ is free from the dangerous purgative substances which have hitherto practically prohibited its use as a cattle feed. With the old method of crushing and pressing, the proteid substances in the raw bean (which are the base of the bean ‘cheeses’ so commonly used as food throughout the Orient) caused much trouble through the sticking of the ‘cake’ to the press cloths.”

The next section is about peanuts as a potential competitor to copra since the “world’s oil hunger is so great

and increasing so fast.” Peanut production in India and Africa is growing rapidly. Includes a story about peanuts in the hinterland of the State of Quelimane on the north side of the Zambezi River in today’s Mozambique.

Note: A new weed killer or “weedicide,” arsenite of soda (made by boiling together white arsenic and washing soda or sal soda), is widely used in Hawaii (p. 569). Address: Chief, Div. of Horticulture, Philippines.

53. *Oil and Colour Trades Journal (London)*. 1915. Trade and market report: Liverpool. 47(855):882-83. March 6.

• **Summary:** The first section, titled “Soya oil from East Africa,” notes that a new stage seems to have been reached in the African soya bean growing industry, judging from samples of soya bean oil and cake received last week in Liverpool from Portuguese East Africa, where they were made. They are of interest for two reasons: (1) They are seen as early fruits of the missions for introducing cultivation of soya beans in Africa carried out in 1910-1911 by Mr. A. Grenville Turner of Liverpool. (2) The products are of marketable quality.

Note 1. In 1915 “Portuguese East Africa” was the name for today’s Mozambique.

Note 2. This is the earliest document seen (Aug. 2009) concerning soybeans in today’s Mozambique. This document contains the earliest date seen for soybeans in today’s Mozambique (1915).

54. Abril y Guanyabens, Juan. 1919. La diabetis y la soja: Experiencias i observacions [Diabetes and soya: Experiments and observations]. Spain: Tortosa Querol. 31 p. 21 cm. [Spa]\*

55. Palencia, Julio. 1919. El haba soya de Manchuria [The soybean of Manchuria]. Madrid, Spain: Ministerio de Estado, Centro de Información. 26 p. 2nd ed. 1920. Series: Centro de Informacio’n Comercial del Ministerio de Estado, No. 54. [Spa]\*

• **Summary:** Abadal (1932, p. 5 and 9) notes: “As early as 1918 a Spanish public official, Don Julio de Palencia, the Spanish Consul in Shanghai, sent the State Department (*Ministeria de Estado*) a magnificent report specifying the great attention that representatives of the principal countries of the world were giving to this crop [the soya bean], and the relevance that it would have in the agricultural economy of the future. What a pity that Spain has been the only civilized country to ignore the study of the soya bean and its exploitation on a large scale...”

“In 1917 the Spanish Consul in Shanghai, Don Julio Palencia, sent to the State Department a study on cultivation of soya, proposing that tests be done to acclimatize this valuable crop to our country.”

On page 85 he concludes: “Spain: The cultivation of soya, as well as the selection and classification are due to



Coll. (Colonel) D. Santiago Felice Valderrama of Montilla, who has grown his soybeans at the estate of D. Francisco Blanco, at the marketplace of Gondomar–Montilla.” A list of 10 varieties is given, with their color and maturity. The original variety came from China. Address: Spanish Consul in Shanghai, China.

56. Valderrama, Santiago F. 1920. *Notas sobre el cultivo de la soja: Ampliadas con las experiencias de los años 1914 al 1919* [Notes on the culture of soybeans: Enlarged with experiments of the years 1914 to 1919]. Cordoba, Spain: Printed by M. de Sola. 26 p. April. 16 cm. [Spa]

• **Summary:** This rare, valuable, and very interesting booklet was sent to Soyfoods Center on 15 June 1995 by Manuel Ruiz Luque, a collector of antiquarian books, from Montilla (Córdoba), Spain.

Contents: Introduction (description of the plant and brief history). Cultivation of soybeans. Manures and fertilizers. Preparation of the soil. Time of planting. Spacing of the plants. Quantity of seeds and depth of planting. Work. Yield. Photo of a soybean plant (yellow seeds) grown at Montilla (Cordoba) by Don Santiago F. Valderrama and harvested in 1916 (p. 15). Nutritional analysis of the seeds of this plant (conducted Aug. 1916 at Granada by Mariano Moreno). Soy products: Soymilk (*leche de Soja*), various types of tofu (*queso de Soja*). Soybeans and products cultivated in Montilla and exhibited in May 1918 at Cordoba: 16 types of seeds (7 yellow-seeded, 4 black, 3 green, 1 variegated, and 1 red), 6 green soybean plants (from yellow, green, or black seeds), 1 dry soybean plant, and 11 soy products. Summary.

The soy products exhibited in 1918 at Cordoba are: 1. Soy oil obtained from 5 kg of seeds. 2. Soy flour (full-fat; *Harina de Soja, con todo el aceite*). 3. Soy flour (defatted; *Harina de Soja, después de haberle extraído el aceite*). 4. Soy bran (finely ground; *Moyuelo de Soja*). 5. Soy bread (made with full-fat soy flour). 6. Soy bread (made with defatted soy flour). 7. Soy extract (*Extracto de Soja*; “This product can be substituted with advantage for all food extracts”). 8. Legumine (*Legumina*) extracted from soya; “Similar to the casein of milk and with equal applications.” 9. Soymilk. “Of great nutritional power. This product, fermented, yields an exquisite cheese.” 10. Urease. “A chemical reagent of great application, extracted from soya.” 11. Soybeans pods (*Cáscara de la Soja*).

On page 49 he continues. “In Spain, the first attempts at soybean cultivation were made by the Count of San Bernardo [Manuel de Mariátegui, 1st Count of San Bernardo, lived 1842-1905. He was a Spanish nobleman and politician who served as Mayor of Madrid between 1892 and 1894 and as Minister of State in 1903]; he cultivated soybeans on his estates at Almillio (in Écija [a city in southwest Spain, 48 miles east-northeast of Seville]) at the beginning of this century. But the person who has given a truly admirable impetus to this cultivation is Col. Santiago F. Valderrama

who, during the last decade, as well as obtaining marvelous plants, some of which we will show in a photo (page 70, fig. 1), also introduced his own varieties, of which we will speak later (p. 85). He estimates a really favorable yield, which cannot be obtained except in favorable regions having warm climates, where cotton, sugar cane, date palms, and bananas grow luxuriantly. In fact, he gets a yield of 2,500 kg/ha, which we can’t wait to have here in Italy.”

An illustration shows a soy bean plant (frontispiece, facing the title page).

Note 1. This is the earliest document seen (Oct. 2014) concerning the cultivation of soybeans in Spain.

Note 2. This is the earliest Spanish-language document seen (Oct. 2012) that mentions soy bran, which it calls *Moyuelo de Soja*.

Note 3. This is the earliest Spanish-language document seen (Nov. 2013) that mentions whole soy flour, which it calls *Harina de Soja, con todo el aceite* [“Soy flour with all the oil”]. Address: Montilla, Spain.

57. Kellogg, John Harvey. 1920. *The health question box, or a thousand and one health questions answered*. 2nd ed. Battle Creek, Michigan: Modern Medicine Publishing Co. 907 p. Illust. Index. 21 cm. 1st ed. was 1917.

• **Summary:** “Foreword: For more than forty years, the writer of this volume has each week stood before an audience of invalids at the Battle Creek Sanitarium to open a popular question box. During a longer period the writer has supplied each month to the monthly journal *Good Health* several columns of answers to correspondents.” More than a thousand of these have been selected, with their answers, for this volume.

The following questions concern the soy bean (p. 350-53, 886; also 125, 200, 347, 349): In what respect is the soy bean superior to the navy bean and other varieties? What is soy bean curd or cheese (to-fu), and how is it made? What is the food value of the soy bean? What is the composition of the soy bean, especially in relation to the amount of carbohydrate it contains?

Concerning peanuts (p. 348-49): Is the protein of the peanut equal to that of meat or eggs? Which is the more digestible, roasted or raw peanuts? Why is it necessary to cook peanuts to prepare them for digestion?

“In North China and various other countries where the peanut flourishes, it has long held a prominent place in the national dietary; but in this country its great value has been so little appreciated that it has been scarcely recognized as a food, having been eaten as a dainty or luxury.

“Although, since the writer—some twenty-five years ago [i.e., ca. 1895]—introduced the crushed nuts, or peanut butter, into the bill of fare of the Battle-Creek Sanitarium, the use of peanuts in this form has rapidly extended and it has found its way to many thousands of tables.”

One discovery has “placed the peanut upon a high

pedestal among foodstuffs... It is the fact that the protein of the peanut belongs to a special class very rare among the products of the vegetable kingdom, known to the chemist as 'complete protein.' The complete protein is one which contains all the elements needed for making any of the many different kinds of tissue found in the human body. Very naturally these proteins are found in eggs, milk and meat, but they are not found in cereals or vegetables." The almond and soy bean also contain complete proteins.

Concerning the natural diet of man (p. 96-109, 124-25): What was the diet of prehistoric man? Ans: Fruits and nuts. What is the natural diet of man? Ans: Fruits, soft grains, nuts, tender shoots and juicy roots. Man is not carnivorous. What was the Brook Farm experiment? What is the simple life? What is biologic living? Ans: Living in accord with the "great biologic laws... which rule our physical being." What is Fletcherism? Ans: Thorough mastication. When eggs and meat are discarded what vegetable foods should take their place? Ans: No substitutes are needed. "Protese, Nuttolene and other vegetable meats are rich in protein. The newly introduced soy bean is more than a substitute for meat. It is rich in lime and vitamins which meat lacks. Its protein is 'complete.'" Have human beings a natural appetite for flesh? Do scientific authorities admit that animal flesh is a necessary part of the human dietary? Ans: "All modern physiologists admit that flesh food is not an essential part..." Is a meatless diet capable of maintaining the body in a state of vigorous health? Is there any authority for the elimination of flesh foods from the dietary? Does a flesh diet injure the kidneys? Is it not true that laborers universally require a large amount of meat.

Concerning roughage, bran, and constipation (p. 197-99). Diabetic foods (p. 199-201, incl. soy bean and soy bean curd). Dietary oils and butter (p. 338-41, incl. nut oils, peanut oil, olive oil, malted nuts). Concerning tree nuts (p. 341-47, 354-59): What is the food value of nuts? Ans: The "most highly concentrated of all natural foods." Tropical fats—Where do the natives of the tropics get their fat? Nuts for nursing mothers—Is there any food which will increase the flow of her milk? Ans: Nut milks, Malted Nuts. How did the Jordan almond get its name? Ans: This choicest of all almonds came originally from Malaga in southern Spain. Almond milk—Is it possible to prepare a substitute for milk from vegetables? Ans: Yes. "The writer has made large use of almond milk for thirty years [i.e., since about 1890]. It is more easily prepared from almond butter." "Almost equally good milk preparations may be made from the soy bean and the peanut." Are nuts good food? Yes, incl. peanut butter. Nuts make good "meat substitutes."

On the last page is a list of 18 health books by Dr. Kellogg, all published by the Modern Medicine Publishing Co. Address: M.D., Battle Creek, Michigan.

58. Adkins, Dorothy Margaret. 1921. The soya-bean

problem. *Science Progress (London)* 15(59):445-51. Jan. [9 ref]

• **Summary:** This is a popular article. Contents: Introduction. Practical applications of the bean: Food uses include Tofu, or bean cheese (Japanese), Miso similar to chiang (Chinese), Shoyu (Japanese) and chiang-yu (Chinese), Natto (Japanese), whole dry soya-beans, soya-beans canned as a green vegetable (see description below), vegetable milk, soya-beans roasted, ground and used as a coffee substitute in Switzerland and the USA, soya flour, soya in diabetic diets and macaroni. Utilisation of soya-bean oil: In Italy, China, Manchuria. Utilisation of soya-bean cake and meal: As fertilizer in China and Japan, for feeding stock. Food value of the bean. The cultivation of the soya bean: China, Japan, United States, Australia (New South Wales), South Africa, West Indies, British East Africa, West Africa, Burmah [Burma], England.

"In Japan beans are germinated until the sprouts are about five inches long, and eaten with vinegar; beans, germinated and treated with brine, have also been noted in Spain." Note: It is not stated clearly that these beans in Japan or Spain are soya beans.

"Soya-beans may be cooked and used in the same way as haricot-beans, and may also be picked when young and treated like green peas, in which condition they may be canned."

"In South Africa success has been achieved in growing the plant; in 1910 the outlook was so hopeful that a project for constructing oil mills was suggested. Unfortunately the bean was not taken up by farmers, who preferred to cultivate maize, as it was an easier crop to produce. Thus no extensive culture of the bean was attempted, and the subject was dropped.

"In other parts of the Empire, for example the West Indies, British East Africa and West Africa, trials of soya-beans have proved successful, but in no district have promising early experiments been followed by tests on a larger scale."

"In certain parts of India, for example Burmah, soya-beans are grown on a large scale and are consumed by the natives."

Note: "Lower Burma is a historical region, referring to the part of Burma annexed by the British Empire after the Second Anglo-Burmese War, which took place in 1852... Lower Burma was centered at Rangoon, and composed of all of the coast of modern Burma, and also the lower basin of the Irrawaddy River, including Prome. The area was also known as British Burma" (Source: Wikipedia, Oct. 2010). Address: Royal Holloway College, London.

59. Grinenco, Ivan; Capone, Giorgio. eds. 1921. Produits oléagineux et huiles végétales: Etude statistique sur leur production et leur mouvement commercial [Oleaginous products and vegetable oils: Statistical study on their

production and trade]. Rome, Italy: Institute Internationale d'Agriculture, Service de la Statistique Générale. xxxii + 421p. See p. XX-XXI, 140-41, 144-47, 442-43, 480-81. Sept. 15. Index in front. [Fre]

• **Summary:** In Sept. 1921 the IIA (*Institute Internationale d'Agriculture*) published this monograph in French. Two years later, by popular demand, an updated English-language edition was published. Contents: Introduction. Northern hemisphere: Europe, America, Asia, Africa, Oceania (Hawaii, Guam). Southern hemisphere: America, Asia, Africa, Oceania. Recapitulative tables of commerce, 1910-19. Note 1. All import and export statistics are given in quintals. 1 quintal = 100 kg.

The soybean (introductory information, p. xxii-xxiii, xxxii). Northern hemisphere–Europe. Germany (imports of soybean and soy oil 1910-14, p. 4). Denmark (production of soy oil in 1917, p. 17; imports and exports of soybeans and soy oil 1910-19, p. 18-20). France (imports and exports of soybeans and soy oil 1910-19, p. 28-31). Great Britain and Ireland (treated as one country; imports, exports, and reexports of soybeans and soy oil 1910-19, p. 32-35). Norway (imports of soybeans 1910-19, p. 47). Netherlands (Pays-Bas, imports and exports of soybeans and soy oil 1910-19, p. 49-52). Romania (In 1915 production of soybeans on 3 hectares was 3,600 liters). Russia (in Europe and Asia, imports of soy oil 1909-17, p. 70-71). Sweden (imports and exports of soybeans and soy oil 1910-19, p. 74-76).

Note 2. This is the earliest document seen (Jan. 2009) that gives soybean production or area statistics for Eastern Europe.

America: Canada (imports of coconut, palm, and soy oil {combined} for the production of soap {in hectoliters} 1915-19, p. 88-89). Cuba (various attempts have been made to introduce the soybean, p. 94).

United States (area and production in 1909 {659 ha}, then from 1917-1920, p. 97-98). An overview of soybeans in the USA (p. 103, 105) states that the soybean, known in the USA since 1804, has become of great economic importance during the past few years. It is becoming popular mainly as a forage plant, but also for its seeds, for extraction of oil, and for making other products. Statistics have been published regularly since 1917. The census for 1909 showed 659 hectares cultivated in soybeans. During the years from 1917 to 1919 the cultivated area surpassed 60,000 ha. The three main states for soybean cultivation are North Carolina, Virginia, and Mississippi, which in 1919 cultivated respectively 33,185, 12,141, and 3,238 hectares; this was almost 75% of the total cultivated to soybeans in the USA. In 1910, the seeds were used for the extraction of oil in the USA, and for the first time the seeds were imported from Manchuria. In 1915, domestically grown soybean were used as a source of oil. This industry is developing rapidly, because the extraction of the oil is easily adapted to existing

facilities that press oil from cottonseed and linseed. A table (p. 106) shows production of 16 vegetable oils in the USA from 1912 to 1917. Soybean oil production (in quintals) has increased from 12,537 in 1914, to 44,996 in 1916, to 190,843 in 1917. Figures are also given for peanut oil, sesame oil, etc. Other tables (p. 108-10) show imports, exports, and reexports of soybeans and soy oil from 1910 to 1919.

Asia: China (exports of soybeans and soy oil 1910-19, p. 161-62). French Indo-China (overview, esp. Cambodia and Tonkin, p. 187). Japan (area planted and production of soybeans 1877-1919, p. 190; overview, p. 191; production of soy oil 1909-18, p. 192; imports and exports of soybeans and soy oil 1910-19, p. 192-93). Korea (area planted and production of soybeans 1909-1918, p. 194; imports and exports of soybeans and soy oil 1909-11, p. 195). Formosa [Taiwan] (area planted and production of soybeans 1901-06, p. 196; imports and exports of soybeans and soy oil 1909-17, p. 197. In 1901 10,888 ha produced 8,056,400 liters of soybeans. In 1904 21,960 ha produced 24,401,700 liters of soybeans). Note 3. This is the earliest document seen (Jan. 2005) that gives soybean production or area statistics for Formosa (Taiwan; ceded to Japan in 1895 after Japan won the Sino-Japanese War).

Kwantung [Kwantung Leased Territory in Manchuria] (area planted and production of soybeans 1911-17, p. 198. In 1911 14,627 ha of soybeans produced 102,112 quintals. In 1916 29,902 ha produced 153,995 quintals of soybeans).

Africa: Algeria (in recent years, trials have been made to introduce soybean culture to Algeria, p. 238). Egypt (imports of soy oil 1919, p. 244-47).

Southern hemisphere–America: (Note 4. Soy is not mentioned at Argentina, Brazil, or any other South American country). Asia: Netherlands Indies. (A) In Java and Madura, the area planted to soybeans was 162,800 ha in 1916, 175,696 ha in 1917, and 157,844 ha in 1918. Gives imports of soy oil (1,085 quintals in 1914) and exports of soybeans (46 quintals in 1913) (p. 297-98). (B) In outlying territories, gives imports of soybeans from 1913 to 1919 (p. 299). Africa: Southern Rhodesia (attempts have been made to introduce soybeans and several other oil plants from temperate climates, p. 317). Oceania: Soy is not mentioned at Australia, New Zealand, British New Guinea, former German New Guinea [later Papua New Guinea], or any other country in southern Oceania. (p. 297). Recapitulative tables–Imports and exports from 1910-1919. Soybeans, p. 368-69. Peanuts, p. 370-75. Sesame seeds, p. 376-79. Palm fruits (*Amandes de palme*, from which palm oil is obtained), p. 392-93. Peanut oil, p. 414-17. Corn oil, p. 416-17. Sesame oil, p. 418-19. Soy oil, p. 420-21. Other oils covered in detail by this book are: Cottonseed, hempseed, linseed, rapeseed (*colza* and *navette*), poppy (*pavot* or *oeillette*), castor, olive, coconut, palm, and other–non-specified. Address: 1. Doctor of Agronomics; 2. Doctor of Economics. Both: IIA, Rome, Italy.



60. Wester, P.J. 1921. The food plants of the Philippines. *Philippine Agricultural Review* 14(3):211-384. Third quarter. See p. 360.

• **Summary:** “Soya. *Glycine max* M. Leguminosae. An erect, annual herb 35 or more cm tall, the beans of which are made into flour or otherwise prepared in various ways for the table in India, China and Japan, and from which a valuable culinary oil is obtained. Of limited distribution and rarely cultivated. Has proven very productive in Bukidnon and Lanao below 700 meters altitude. A crop of undoubted value for the Philippines, both for human food and as a stock feed. Said to have been introduced during the Spanish régime. The Soy bean.”

Note: The Spanish ruled the Philippines for about 100 years (putting down many revolts) until Dec. 1898 when the Spanish-American War brought the archipelago under American control; the revolts continued. Address: Agricultural Advisor.

61. Morse, Hosea Ballou. 1921. The trade and administration of China. 3rd revised ed.: Continued. Shanghai, China: Kelly and Walsh. xv + 505 p. Illust. Index. 22 cm.

• **Summary:** Continued (p. 270): In Chekiang province, Hangchow is the provincial capital. For a time the capital of the Southern Sung Empire (A.D. 1129-1280), it was opened as a treaty port in 1896. A table shows the value of its imports and exports from 1898 to 1918. Its main imports in 1904 included [soy] beans (Tls. 795,000), bean-cake (Tls. 275,000), and bean-oil (Tls. 134,000).

In Fukien [Fujian] province, Foochow was opened as a treaty port under the British treaty of 1842. During the year 1904 the principal imports, by steamer or junk, included [soy] beans (Tls. 516,000), and bean- and tea-oil (Tls. 475,000). Amoy is a city on an island. A table shows the value of its imports and exports from 1864 to 1918. Among its principal imports in 1904 were [soy] beans (Tls. 964,000) and bean-cake (Tls. 1,192,000). Its main exports are teas (p. 277).

In Kwangtung province, Swatow is an unofficial town. “The district is a large importer of [soy] beans and bean-cake.” A table shows the value of its imports and exports from 1864 to 1918. Among its principal imports in 1904 were [soy] beans (Tls. 2,525,000), bean-cake (Tls. 5,432,000), and hemp (Tls. 696,000). Pakhoi produces ground nuts.

A large fold-out color chart (facing p. 297) contains five elaborate bar charts showing the course of trade in China roughly every 10 years from 1864 to 1911: (1) Tonnage of shipping entered and cleared. (2) Provenance of direct imports. (3) Destination of direct exports. (4) Classes of merchandise—foreign imports. (4) Classes of foreign imports.

In Chapter 9, titled “Foreign Trade” (p. 297-329), in the section on Exports, the subsection on “Beans” (p. 324-25) is

identical to that in the 1908 and 1913 editions, except for one sentence added at the end: “The chief source of production is Manchuria, next to that Shangtung, Hupeh, and the lower Yangtze; and from those provinces a large export to Europe has been developed.”

In Chapter 10, titled “Internal Trade” (p. 330-349), the subsection on “Beans” (p. 346-47) is identical to that in the 1908 and 1913 editions. Also discusses internal trade of ground-nuts (p. 347) and hemp, jute, and ramie (p. 347-48).

Chapter 11, “Opium” (p. 350-84) tells its long and twisting story in China.

Concerning China and Tibet: During the reign of Kienlung [Ch’ien-lung], reigned 1736-1796, the Gurkhas invaded Tibet. He “dispatched an army into that country and drove them back to Nipal [Nepal], restoring Tibet to obedience to the Chinese rule.” “Kienlung abdicated in 1796, after a reign of sixty years, in order that he might not exceed the limits of the reign of his grandfather, Kanghi” (p. 16). Tibet, a Chinese province, contains one treaty port, Yatung, with no inhabitants and collecting no revenue. In 1904 the British Mission interrupted the substantial trade there (p. 296).

Concerning Peking: “The capital of the Empire was first established at Peking (the Northern Capital) by Kublai Khan, when he initiated the Yuan (Mongol) dynasty, A.D. 1260; the first Ming Emperor, A.D. 1368, established himself at Nanking (the Southern Capital), but the third of that line transferred the capital in 1421 to Peking, which has remained the seat of government continuously since then. Peking is a quite unofficial and quasi-foreign designation, the Imperial name being King-shih (The Capital) and is name, as a unit of provincial administration, being Shuntien. In the same way it may be observed that the Empire has no name; it is designated as ‘The Empire’ or ‘(All within) The Four Seas’ or ‘(All beneath) The Canopy of Heaven,’ or, quite unofficially, ‘The Middle Kingdom’; it is true that the Republic has adopted the name Chung-hwa, ‘Middle Flowery,’ but the name ‘China’ is an old Buddhist name which has dropped out of use in the country which is designated by it, and is to-day, of all the countries using the Chinese ideograms, employed only by the Japanese. Peking is a camp, with the headquarters of the commander-in-chief in the middle, and the army encamped around...” (p. 233-34).

An interesting history of Canton is also given (p. 279-81). The Chinese name of Canton, the capital of Kwangtung Province, is Kwangchow. Canton is the Portuguese rendering of the name of the province. The population is currently estimated at 900,000. Address: LL.D., Camberley [England].

62. *USDA Bureau of Plant Industry, Inventory*. 1922. Seeds and plants imported by the Office of Foreign Seed and Plant Introduction during the period from July 1 to September 30, 1918. Nos. 46303 to 46587. No. 56. 34 p. May 5.

• **Summary:** Soy bean introductions: *Soja max* (L.) Piper.

Fabaceæ.

"46390-46456. From China. Collected by Mr. Frank N. Meyer, Agricultural Explorer for the Department of Agriculture. Received August 12, 1918.

"This is the last collection of plant material to be made by the late Frank N. Meyer, our agricultural explorer, who was drowned in the Yangtze River on June 1, 1918. The seeds were found in Mr. Meyer's baggage and forwarded from Shanghai by the American consul.

"In view of Mr. Meyer's usual practice of giving a careful description of every seed and plant which he sent in, it seems appropriate to explain that the reason that these few last lots received must be published without notes is that Mr. Meyer evidently had not had time since their collection to arrange the notes to go with them. It is with the same sad reluctance which a traveler feels when he leaves his comrade buried somewhere along the route and pushes on that I write these few words regarding Mr. Meyer's last plant introductions into America.' (David Fairchild.)

"46443. Medium-sized, yellowish green seed.

"46444. Small, flat, black seed."

In the "Introductory Statement" (p. 1), David Fairchild states: "No. 46310 (*Amaranthus paniculatus*) is the 'huauhtli' of the Aztecs, an amaranth whose seeds are used in the making of a delicate sweetmeat resembling pop-corn balls. This 'huauhtli' was cultivated by the Aztecs before the discovery of America. It figured in their religious ceremonies and their commerce. Quantities of this 'grain' were exacted by them as tribute from conquered tribes. Dr. Safford has found that Montezuma had 18 granaries, each with a capacity of 9,000 bushels, filled with its seeds. The flour, made into small cakes called *alegría* by the Spaniards, was eaten in large quantities by the lower classes. The ability of this plant to grow and bear in regions too dry for corn makes it worthy of close study."

On page 6 is an even longer description of this plant (From Coyacan, Mexico. Presented by Mrs. Zelia Nuttall. Received July 3, 1918). It is adapted from *A Forgotten Cereal in Ancient America, Proceedings of the Nineteenth International Congress of Americanists*, p. 286, 1917. Address: Washington, DC.

63. *Toronto Daily Star (Canada)*. 1922. Food and fuel supplied by Eastern "magic bean": Oil and dozen other articles obtained from useful plant. Sept. 25. p. 4.

• **Summary:** "London, Aug. 14—The 'magic bean' has been discovered, according to the *Daily Mail* [a British newspaper].

"After eight years of effort to 'tame' the Soya bean—the natural home of which is in the Far East—Mr. J.L. North, curator of the Royal Botanic Gardens, Regent's Park, N.W. [London], has produced a variety which, it is claimed, is not only able to weather the very adverse climate of this country [England], but can be made to flourish."

Yesterday, Mr. North told a Daily Mail reporter that, upon request, he has sent seeds of his variety to many parts of the world. "They are now being grown and tested in twenty-two countries in England, Scotland and Ireland, in the Channel Islands [in the English Channel, off the coast of Normandy; part of the UK], and in the Transvaal, Cape Colony [today's Republic of South Africa], Ecuador, Brazil, the United States, Canada, New Zealand, Tasmania, Queensland [Australia], Spain, Portugal, Austria and Syria."

About 20 acres of soya beans are now in luxuriant foliage in and around London. "Soya bean flour" can be made from soybeans after their oil is extracted.

Note 1. This is the earliest document seen (Sept. 2014) concerning the cultivation of soya beans in Ireland (the Irish Republic). These soybeans were actually first cultivated in 1923—See: *Eire Department of Agriculture Journal*. 1939. "The soya bean." 36(1):73-79. March.

Note 2. This is the earliest document seen (March 2010) concerning soybeans in the Channel Islands, or the cultivation of soybeans in the Channel Islands. This document contains the earliest date seen for soybeans in the Channel Islands, or the cultivation of soybeans in the Channel Islands (Sept. 1922). The source of these soybeans was Mr. J.L. North. The Channel Islands (incl. Jersey, Guernsey, Alderney, and Sark) are in the English Channel, just west of the northwest tip of France (Manche dept.). Part of the United Kingdom, they were once part of the ancient Dukedom of Normandy (France); today they are domestically independent, not controlled by the British government. The inhabitants are of part Norman descent (French), part English. Here the well-known Jersey and Guernsey breeds of cattle originated.

Note 3. This is the earliest document seen (Jan. 2011) concerning soybeans in Ecuador, or the cultivation of soybeans in the Ecuador. This document contains the earliest date seen for soybeans in Ecuador, or the cultivation of soybeans in Ecuador (Jan. 2011). The source of these soybeans was Mr. J.L. North.

64. Navas, L. 1923. Medios naturales de defensa contra la langosta [Natural means of defense against grasshoppers/locusts]. *Revista de la Academia de Ciencias Exactas Fisico-Químicas y Naturales de Zaragoza (Spain)* 7:94-118. See p. 109. [Spa]\*

• **Summary:** Among the means described here by which grasshoppers/locusts (Acrididae) are destroyed are the growing of plants unsuitable as food for them (such as *Glycine hispida* (soja) in China). Includes a discussion of host selection, cultural control, and feeding deterrents.

65. Bottari, Fulvio. 1923. La soja nella storia, nell'agricoltura e nelle applicazioni alimentari ed industriali [The soybean in history, in agriculture, and in food and industrial applications]. Torino & Genova, Italy: S. Lattes & Co. 243 p.

Preface by Prof. Oreste Matriolo (R. Università di Torino). With 34 illust. 22 cm. [25 ref. Ita]

• **Summary:** Contents: Preface. Reason for the work; its scope and limits. Part I: The origin and history of the soybean. Reason for this history, the origin of the soybean and its early dissemination, soya (including production statistics) in Oriental countries (China, Manchuria, Japan, Formosa, Korea, French Indochina), how the soybean was introduced to Europe, the cultivation of soya in France, Soya in England, Austria, Germany, Denmark, Holland, Russia, Sweden, Alsace-Lorraine (now in northeast France), Spain, Italy, America, Conclusion.

Part II: Cultivation of soya.

Part III: Soya in the feeding and nutrition of humans and animals. 1. The analysis and physiology of metabolism as an element in the study of nutrition. 2. Soybean forage in the feeding of animals. 3. Soybeans (*il grano di soja*) and soy products in the feeding of humans and animals: Commercial and nutritional value and digestibility of the soybean, how to prepare and cook whole soybeans, soy broth, thick soups, salads, and meat dishes, soy purée (*puré di soja*), soybean cakes (*torté di soja*), soybean sprouts (*germi di soja*), roasted soybeans (*grano di soja come frutta secca*), soy coffee (*caffé di soja*), soy chocolate (*cioccolata di soja*), soy confections (*confetture di soja*), special soy sweets and chocolates for diabetics and tuberculosis patients, the soybean as a feed for animals.

Note: This is the earliest Italian-language document seen (Nov. 2012) that mentions soy coffee, which it calls *caffé di soja*.

4. Flour, pasta, and bread in feeding. 5. Soymilk (*il latte di soja*) and its use in the feeding of animals and humans. 6. Tofu (*il formaggio di soja*). 7. Soy oil and oil-cakes (*panelli*). 8. Condiments and sauces: Natto, miso, soy sauce (*le salse*, called *Schogon* [sic] in Japan, *Tsinag-Yeou* [sic] or *Tao-yu* in China, *Ketjap* in Java, and *Tuong* in Annam). 9. Enzymes (I fermenti, incl. urease). 10. Conclusions.

Part IV: Industrial applications of soya.

Part V: General conclusions.

The first test of the lactation of calves with soymilk was conducted in the winter of 1916-17 by the Bonafous Institute in Turin. The results were splendid, and have encouraged eminent pediatricians such as Dr. Casalini, Prof. Dr. Alberto Muggia (teacher of clinical pediatrics at the University of Turin), and Dr. Enrico Gasca (vice director general of infants at Turin) to extend their experiments (p. 6).

A table (p. 31) shows soybean and cotton hectareage and production in Korea from 1909 to 1917. Soybean hectareage increased from 277,776 ha to a record 487,134 ha. Soybean production grew from 1,991,126 quintals (1 quintal = 100 kg or 0.1 metric tons) to a record 3,816,498 quintals.

Page 35: "Prof. Rouest of Luxey (Landes) in France wrote us on 30 Nov. 1921. 'I have finished only the period of acclimatization of the soybean. It remains for me to

propagate it a little everywhere. The experiments of 1921 were extended in all the Departments, being viewed from an industrial and commercial point of view. I must now study which variety adapts among those I am cultivating. Soy flour will not be able to be made until we have many thousands of hectares under cultivation, and then we will be able to think of other applications as well... Actually the firm Hendeberth de Lion sells its flour, originating in China, at 10 French francs per kg, a prohibitive price.'"

Page 206: At the pediatric congress held in Milan in Sept. 1922, the question of lactation (feeding children) with vegetable milk was discussed in a favorable way, proposed by Prof. Muggia and sustained by the illustrious Prof. Berghius, Director of the Pediatric Clinic of the University of Padua, and by Prof. Francioni of Bologna. We can also add that experiments on lactation are proceeding in Italy at the pediatric clinics of Turin, Bologna, Padua, Genoa, and Florence, and also at the Infant's Dispensary in Turin.

Photos and tables are discussed in a separate record.

A diagram (p. 227) compares the chemical composition of animal casein and vegetable casein.

Note 1. Quite a bit of the historical and non-Italian information in this book comes from Léon Rouest's 1921 book *Le soja et son lait végétal: Applications agricoles et industrielles*.

Note 2. This is the earliest Italian-language document seen (Jan. 2012) that mentions natto, of which it says: "il Natto in Giappone che corrisponde al *Tao-Teche* della Cina."

Note 3. This is the earliest Italian-language document seen (Jan. 2013) that mentions soy sprouts, which it calls *germi di soja*. Address: Dr. of Economic and Commercial Science, Turin [Torino], Italy.

66. Bottari, Fulvio. 1923. *La soja nella storia, nell'agricoltura e nelle applicazioni alimentari ed industriali* [The soybean in history, in agriculture, and in food and industrial applications (Photos and tables—Document part)]. Torino & Genova, Italy: S. Lattes & Co. 243 p. Preface by Prof. Oreste Matriolo (R. Università di Torino). With 34 illust. 22 cm. [25 ref. Ita]

• **Summary:** Photos show: (0) An infant fed soymilk in Turin in 1921, together with a table showing its weight gain from 18 July 1921 until 14 Jan. 1922 (p. 7). (Figs. 1-3) Three different varieties of soybean plants (p. 70-71). (4) The leaves of 3 different varieties of soybean plants (p. 72). (5) Close-up of the stem and pods of a soybean plant (p. 73). (6) Beans and pods of soybeans (p. 74).

(7-8) Different stages of germinating soybean seeds (p. 75). (9) Close-up of soybean roots and nodules (p. 76).

(10-12) Fields of soybeans at the "Istituto Bonafous" (p. 106, 108, 113). (13-14) Field of soybeans grown with corn (p. 122, 123). (15-18) Cellular transverse section through a soybean (facing p. 152).

(20-21) Soy flour and wheat flour, each in a sack and loose (p. 177). (22) Pasta made from soy (p. 181). (23-



28) Bread and baguettes / breadsticks made with various percentages of soy (*Pane di soja*) (p. 183-89).

(29-30) Soy bran and wheat bran, each in a sack and loose (p. 191). (31) Two bottles of soymilk (p. 194). (32) Two bottles of soy oil (p. 214).

Tables show: (1) Imports and exports of soybean seeds from 1910 to 1919 by various countries, Imports into Europe (Denmark, France, Great Britain and Ireland, Norway, the Low Countries {Netherlands, Belgium, Luxembourg}, Sweden), into Asia (Netherlands Indies {today's Indonesia}, Java & Madura, External Possessions, Japan, Formosa). Exports from Europe (France, Great Britain and Ireland, the Low Countries), from Asia (China, Japan, Formosa) (p. 3).

(2) Imports and exports of soybean oil from 1910 to 1919 by various countries, Imports into Europe (Denmark, Germany, Denmark, France, Great Britain and Ireland, the Low Countries {Netherlands, Belgium, Luxembourg}, Russia {both European and Asiatic} Sweden), into North America (Canada, United States), into Asia (Netherlands Indies {today's Indonesia}, Java & Madura, Japan, Formosa), into Africa (Egypt). Exports from Europe (Denmark, France, Great Britain and Ireland {re-export}, the Low Countries, Sweden), from North America (United states, re-export), from Asia (China, Japan) (p. 4).

(3) The weight gained by a baby fed soymilk at the dispensary of Lattanti at Torino. The trial ran from 18 July 1921 to 14 Jan. 1922. The baby's weight increased from 3,000 gm to 6,140 gm (p. 7).

(4) Production of soybeans in China in 1916 and 1917 by color. And production of soybean cakes and soy oil in China in 1916 and 1917 (p. 21).

(5) Exports of soybeans and soybean cakes from Manchuria yearly from 1905 to 1908 (data from Rouest) (p. 23).

(6) Area and production of oilseed plants (cotton, linseed, colza/canola, peanut, and soya) in Japan from 1877 to 1920. Soy is by far the greatest, and both the area and production of soybeans increase during this time (p. 26).

(7) Production of the principal vegetable oils (colza/canola, sesame, cotton, linseed, soya, peanut, coconut) in Japan from 1886 to 1918.

(8) Area and production of major oilseeds (cotton, soja) in Korea from 1909 to 1917 (p. 31). Soybean hectareage increased from 277,776 ha to a record 487,134 ha. Soybean production grew from 1,991,126 quintals (1 quintal = 100 kg or 0.1 metric tons) to a record 3,816,498 quintals.

(9) Imports of soybean oil to England from 1910 to 1919 (p. 38). (10) Imports of soybean oil to Denmark from 1910 to 1919 (p. 46). (11) Imports of oilseeds (copra, soya, peanut, sesame, linseed, colza / canola & mustard seed) to Denmark in 1917 (p. 46).

(12) Exports of soybean oil from Denmark from 1910 to 1919 (p. 47). (13) Imports of soybean oil to the Low Countries from 1911 to 1919 (p. 47). (14) Imports of soybean

oil to Russia from 1909 to 1915 (p. 48). (15) Imports of soybean oil and cottonseed oil to Sweden from 1912 to 1919 (p. 48). (16) Imports of soybean oil to Alsace Lorraine from 1913 to 1919 (p. 49). (17) Area of oilseeds and production of oil in Italy from 1909-1920 (p. 50). The area was about constant and the production of oil increased. (18) Median annual production of oil in Italy from 1870-1874 to 1920 (p. 50). Production decreased. (19) Trial comparing the nutritional value of cow's milk and vegetal milk (soymilk). The name of each of the 8 calves is given (p. 56-57). (20) Area and production of soybeans in the United States from 1909, and 1917-1919.

(21) Imports of various vegetable oils (olive, palm, coconut, soya) to the United States from 1910 to 1919 (p. 63).

(22) Cultivation of soybeans in Spain as described by Coll. D. Santiago Felice Valderrama of Montilla. The five columns are: (a) Classification, from 0 to 10. (b) Provenance / Source (China). (c) Seed color. (d) Development (large, medium, small). (e) Maturity date (Late, semi-late, early, etc.) (p. 85).

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(24) Chemical composition of soybeans grown in Vienna, yellow from Mongolia, Yellow from China, reddish brown from China. Composition is given for both the original seed and for its progeny (p. 98).

(25) Weight of soybean stems, pods, and seeds of soybeans grown by Prof. Manvilli of the Bonafous Institute (p. 98).

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(29) Effect of place of origin and variety on the time to germination, time of flowering and formation of the pods. The soybeans came from Tunisia, China, Ceylon, New South Wales, Podolia and Lithuania, France, Northwestern Italy (*Piemonte*, [Piedmont]), United States, Indochina [Cambodia, Laos, Vietnam, Burma, Siam, Peninsular Malaysia, Singapore], and India (p. 109).

(30-31) The effect of applying electrical voltage to soybean plants on the yield of stems, pods, and seed (p. 110-111).

(32) Ito San Soybean production per ha in Connecticut from 1877 to 1918 (p. 120).

(33) The yield of protein and oil from common beans, peas and soybeans (p. 121).

(34) The yield of various minerals from the stem, leaves, pods, seeds and entire plant (p. 121).

(35) Chemical analysis of the soybean plant, on both an "as is" and a dry basis, in the stem, foliage, pods, and entire plant (p. 141).

(36) Composition of the soybean—various parts from various places. entire plant, forage after the plant blooms and sets pods, hay from Japan, hay from Massachusetts, straw from Massachusetts (p. 142).

(37) Nutritive elements in hay from different types of plants, both green and dry, for crude substance and digestible portion (p. 143).

(38) Distribution of the various nutritive components in the various parts of the soybean seed. The parts are entire seed, cotyledons, embryo, seedcoat (*scorza*) (p. 145).

(39) Complex analysis of the seed of the soybean (in parts per 100) (p. 146).

(40) Analysis of the seed of various colors of soybean by various researchers, incl. Dr. Emil Pott, Meissl & Böcker, & Pellet.

(41) Nutritional composition, both crude substance and digestible portion, of various protein sources: beef, common beans, lentils, peas, broad/fava beans, soybeans (p. 149).

(42) Protein content of various basic protein sources, incl. meat, peas, broad beans and soya (p. 155). (43) Bar graph. The soybean as a source of nutrients, compared with other legumes, wheat flour, soy flour, wheat pasta, soy pasta, 75% wheat + 25% soy pasta, wheat bread, soy bread, 75% wheat + 25% soy bread, cow's milk, soymilk, mother's milk (p. 159).

(44) Chemical composition of soybean hay according to Oscar Kellner 1885, p. 82 (p. 162).

(45)

(45) Chemical composition of soybean hay according to Emil Pott 1907 (Vol. 2, p. 3) (p. 163).

(46) Composition of soybean straw, according to Emil Pott (p. 165).

(47) Chemical composition of soybean pods according to Emil Pott (p. 165).

(48) Nutritional composition of soy coffee from Tyrol and Dalmatia (p. 171).

(49) Nutritional composition of soy jams (*confetture di soja*).

(50) Nutritional composition of soy flour compared with the flour of various cereals (p. 176).

(51) Nutritional composition of various types of soy pasta: 100% soy, 25% soy, pasta from Naples (p. 182).

(52) Nutritional composition of soy bread, four analyses, compared with two analyses of wheat bread (p. 185).

(53) Nutritional composition of soymilk made from whole soybeans or soy flour (p. 195).

(54-55) Nutritional composition of soymilk, 7 analyses, compared with mother's milk, cow's milk and goat's milk (p. 200-201).

(56) Nutritional composition of okara (the residue from making soymilk), various analyses (p. 207).

(57-58) Nutritional composition of soybean oil vs. cottonseed oil, and according to five different analysts (p. 213).

(59) Nutritional composition of soybean cake according to five different analysts (p. 215).

(60) A diagram compares the chemical composition of animal casein and vegetable casein (p. 227).

(61) A table compares the chemical composition of animal casein and vegetable casein (p. 228). Address: Dr. of Economic and Commercial Science, Turin [Torino], Italy.

67. Bottari, Fulvio. 1923. Spagna [History of the soybean in Spain (Document part)]. In: Fulvio Bottari. 1923. *La Soja nella Storia, nell'Agricoltura e nelle Applicazioni Alimentari ed Industriali* [The Soybean in History, in Agriculture, and in Food and Industrial Applications]. Torino & Genova, Italy: S. Lattes & Co. 243 p. See p. 2, 49, 85. [25 ref. Ita]

• **Summary:** Page 2 states: We know that in America, soy has now entered as a regular and precious fodder plant, so much so that in 1909, the area cultivated for that purpose in the United States had not reached 659 hectares, while in the three-year period of 1917, 1918, and 1919, it surpassed 60,000 hectares. Spain, at the initiative of Col. Santiago F. Valderrama, is following its example. (Footnote: \*"*Notas sobre el cultivo de la soja*, April 1916. Cordoba, M. De Sola, impresor").

Page 49: Bottari continues. "In Spain, the first attempts at soybean cultivation were made by the Count of San Bernardo, who cultivated soybeans on his estates at Almillio (in Écija [a city in southwest Spain, 48 miles east-northeast of Seville]) at the beginning of this century. But the person who has given a truly admirable impetus to this cultivation is Col. Santiago F. Valderrama who, during the last decade\* (Footnote: \*"*Santiago F. Valderrama, Notas sobre el cultivo de la soja*. Montilla, April 1916"), as well as obtaining marvelous plants, some of which we will show in a photo (page 70, fig. 1), also introduced his own varieties, of which we will speak later (p. 85). He estimates a really favorable yield, which cannot be obtained except in favorable regions having warm climates, where cotton, sugar cane, date palms, and bananas grow luxuriantly. In fact, he gets a yield of 2,500 kg/ha, which we can't wait to have here in Italy."

Page 85: Spain: The cultivations of soy, just as the selection and classifications, are due to Col. D. Santiago Felice Valderrama of Montilla, and they may be requested from the D. Francisco Blanco house, Plaza Gondomar, Montilla.

Here is a directory of them: A table with five columns comprises the directory.

Note: This is the 2nd earliest document seen (Oct. 2014) concerning soybeans in Spain, or the cultivation of soybeans in Spain. This document contains the earliest date seen for soybeans in Spain, or the cultivation of soybeans in Spain (early 1900s). The source of these soybeans is unknown.

Note: Bottari first cites this document as being published in Cordoba (in southern Spain), then cites it a second time as apparently being published in Montilla (located about 22

miles southeast of Cordoba). Address: Dr. of Economic and Commercial Science, Turin [Torino], Italy.

68. Capone, Giorgio; Grinenco, Ivan; Costa, Mario. eds. 1923. Oleaginous products and vegetable oils: Production and trade. Rome, Italy: International Institute of Agriculture, Bureau of Statistics. 545 p. See p. XX-XXI, 140-41, 144-47, 442-43, 480-81. No index. 24 cm. [Eng]

• **Summary:** In Sept. 1921 the IIA published a monograph on this subject in French. By popular demand, this English edition was published 2 years later. Contents: Introduction (p. VII-XXXII): General scope, general survey of the 9 principal crops (including soya beans) plus others, final points of consideration. Part I (p. 1-402) is an analysis by region, and within each region by country, countries of vegetable oil production and trade. Regions are Europe, North and Central America, South America, Asia, Africa, and Oceania.

Major countries: Denmark (p. 20-23; oil production 1916-1921, oil imports 1910-1922). France (p. 26-34). Germany (p. 35-40). Great Britain and Ireland (p. 41-43). Netherlands (p. 65-68). Norway (p. 69-70). Russia-European and Asiatic (p. 84-93). Sweden (p. 100-03). Canada (p. 111-15). United States (p. 131-47). Argentina (p. 179-85; no soy). Brazil (p. 187-90; no soy). Ceylon (p. 218-21; no soy). China (p. 222-26). Dutch East Indies (Java & Madura, Other islands; p. 229-33). Formosa (p. 238-39; gives soybean production and acreage from 1900 to 1921). Japan (p. 259-64; gives Japanese soybean production and acreage from 1877 to 1921, and production of soya oil from 1909 to 1920. Japan's leading oil produced domestically from 1895 was rapeseed oil). Korea (Chosen, p. 265-67). Kwantung Leased Territory (p. 268). Hawaii (p. 388; Hawaii produced 17 long tons of soybeans on 20 acres in 1909, and 10 tons on 15 acres in 1919).

Part II (p. 403-506) is recapitulatory tables for both soya beans and soya bean oil: Area and production by crop (1909-1922), Trade by crop (1909-1921). Cottonseed (p. 410-11). Linseed (p. 414-15). Soya beans (p. 442-43, 480-81).

Pages XX-XXI state: "In the absence of data from China, the chief grower of soya beans, it is impossible to make even the roughest estimate of the world's yield of this product. Among the few countries of any moment as producers of soya beans, we may mention: Japan, where this crop increased rapidly between 1877 and 1887 and then became nearly stationary at about 500,000 long tons [2,240 lb per long ton] per annum, although in the last few years some further increase has been noticeable; Korea, with a continuous increase in area and yield, from 1910 onwards, (the crop of 1920 was about 600,000 long tons); and United States, where from 1909 to 1921, the area under soya beans increased from about 1,600 to 186,000 acres with a production of about 70 thousand long tons. It may be observed that the increase of this crop during the last twenty

years is supplemented by attempts already made and in progress for its introduction into countries with a favourable climate, especially into Africa."

"Exports are exclusively from China and Korea. The Chinese exports have increased very greatly during the last thirty years. Before 1890 they were insignificant, in 1901 they had reached a total of more than 100 thousand tons, and during the decade from 1909 to 1918 they averaged about 600 thousand tons and reached their maximum in 1919 with about 1 million, declining in the two following years to 600 thousand long tons.

"With regard to Korea although we have not a complete series of data for the period 1909-1918, the ever-increasing importance of its exports of soya beans may be emphasized; during the last few years these have been double the average of the years 1909-1911, and in 1921 they already equalled one third of the Chinese exports."

"The chief importers, in Europe are Great Britain, Denmark, and Holland, and, in Asia, Japan, and the Dutch East Indies. To these must also be added Russia-in-Asia as the Chinese Customs register large exports destined for the Russian Pacific ports."

"England, which at one time constituted the greatest market for the soya bean, has continually reduced its imports: these were 420 thousand long tons in 1910, 76 thousand in 1913, and about 60 thousand in the two years 1921-1922... In the Asiatic market, represented in this case by Japan and the Dutch East Indies, imports have continuously increased especially in the last few years of the period under consideration.

"The trade figures of *soya oil* (see tables on pages 480 and 481) indicate that China is the principal exporter, having quadrupled its shipment during the period from 1914 to 1919, attaining in the latter year a total of over 140 thousand long tons."

Other countries unrelated to soy (some no longer in existence): Europe: Esthonia [Estonia], Luxemburg [Luxembourg], Serb-Croat-Slovene State. North and Central America: British Honduras [named Belize after about 1975]. South America: Curaçao [Curacao], Falkland Islands, British Guiana, French Guiana. Asia: Aden [became part of independent Yemen in 1967], Andaman and Nicobar Islands, Bahrein Islands [Bahrain], Borneo (British Protectorates), Dutch East Indies, Federated Malay States, Formosa, French Settlements in India, Indo-China, Persia, Portuguese India [annexed in 1962 by India; became Union territory of Goa, Daman, and Diu], Protected Malay States, Russia, Japanese Saghalin (Karafuto), Siam [later Thailand], Straits Settlements [later Singapore], Timor and Cambing, Wei-Hai-Wei [Weihai, Wei-hai, or Weihaiwei; seaport in northeast Shandong province, northeast China]. Oceania: Australia, Fiji Islands, French Settlements in Oceania, Gilbert and Ellice Islands, Hawaii, Island of Guam, New Caledonia, New Hebrides, Papua, Samoan Islands (American Samoa),



Solomon Islands, Territory of New Guinea (*Later German New Guinea*), Tonga, Western Samoa (*Formerly German Samoa*).

Note 1. This document gives a clear definition of the geographical region named "Oceania."

Note 2. A "quintal" is probably 100 kg. Address: 1. Doctor of Economics; 2. Doctor of Agronomics. Both: IIA, Rome, Italy.

69. *Crops and Markets (USDA)*. 1925. Foreign crops and markets: Production of oil materials. 3(15):240. April 11.

• **Summary:** "Manchuria is by far the most important soybean producing region for which an estimate is available. An unofficial estimate for that part of China places the 1924 crop about equal to or slightly greater than the 1923 harvest of 2,500,000 tons. The Chosen [Korean] crop, according to a commercial estimate, is much smaller this year than last, while the United States crop is slightly larger. No recent estimates are available for Japan."

Large producers of olives for oil include Spain, Italy and Greece.

"The hempseed, rapeseed and sesamum crops were probably slightly smaller in 1924 than in 1923... In both rapeseed and sesamum the crop of British India is the dominating factor." Address: Washington, DC.

70. Takenobu, Y. 1926. Japan Year Book. Tokyo: Japan Year Book Office. 626 + 162 p. See p. 447, 449, 514. 22nd annual issue.

• **Summary:** The total area of Japan proper is 147,652 square miles (382,861 square kilometers). Japan's population (as of Oct. 1925) was 59,736,704. A large area of Japan is very mountainous, and it is estimated that the cultivated area is about 6 million hectares. According to Prof. Shimizu of Keio University the population density per square kilometer of cultivated area in Japan is much larger than various European countries. Japan 969. Belgium 394. Italy 305. Netherlands 273. England 226. Germany 195. Switzerland 168. France 108. Spain 90.

In chapter 29, Agriculture, the section titled "Beans, potatoes and sweet potatoes" (p. 449) begins with a table showing the production (in koku; 1 koku = 180 liters) of these crops from 1921 to 1923, inclusive. Soybean production decreased from:

4.261 million *koku* in 1921

3.628 million *koku* in 1922

3.434 million *koku* in 1923.

The text continues: "Among subsidiary farm crops there is perhaps nothing that plays so important a part in the Japanese kitchen as soy beans..."

In the section on "Breweries" (p. 512+) the subsection titled "Soy" [meaning shoyu or soy sauce] (p. 514) states: "For soy the prefecture of Chiba, which is contiguous to Tokyo municipality, heads all other places on the list as

to output. Parched wheat mixed with salt and beans is a principal ingredient. The process is still far from scientific, requiring about 12 months before the liquid is ready for sale. It is also costly, as it does not much admit labor-saving appliances. To obviate these disadvantages have been tried several patented processes, but most of them have failed. In 1917 the leading soy manufactures of Chiba-ken combined and formed the Noda Soy Co., capital ¥7,000,000 p.u. with capacity of about 250,000 'koku' i.e. about 60 per cent. of the total output of the Prefecture."

A table (p. 514) shows production of sake, beer, and soy from 1919 to 1922 (year ending in March). Production of soy (in 1,000 koku) grew from 2,940 in 1919 to 3,268 in 1922. Address: Prof. at the Waseda Univ. and late of the "Japan Times".

71. Trabut, Louis. 1927. Le soja légume [The soya legume]. *Comptes Rendus des Seances de l'Academie d'Agriculture de France* 13(18):611-13. Meeting of 1 June 1927. [Fre]

• **Summary:** For 150 years the question of soybean utilization in the west has been discussed. However only in the United States is the cultivation of this legume practiced, and it is quite popular in certain states, such as Kansas, where the farmers use the soybean plant as forage, and reserve the seeds for feeding their hogs. In addition, American industries use large quantities of soya. The oil is even imported from Manchuria, where certain factories process 50 tonnes/day of soya. England, Germany, Holland, and Italy extract oil from soya and use the cake for feeding animals and even humans. At Trieste, the cake is converted into a flour which, at the 10-15% level, fortifies and improves bread.

In China, for 50 centuries, soya has been used for the production of milk and cheese. Recently in Italy, soymilk has been made and used experimentally for the feeding of young infants at clinics in Turin, Bologna (*Bologne*), Genoa (*Genes*; Ital. = *Genova*), Padua (*Padoue*), and Florence.

In France, soya has been recognized since 1855 as a new legume and a variety named *Soja d'Etampes* is now found in seed catalogs.

In Algeria, for some years, a pressure cooker has been imported from Spain under the name "marmite espagnole." Having observed that chickpeas, which ordinarily remain hard after several hours of cooking, become soft after 15 minutes of pressure cooking, the author tried cooking soybeans (which had been soaked in water for 24 hours) the same way. The result surpassed his hopes, for by this rapid and economical process of cooking, the soybean becomes superior to the Haricot in many ways, including its high nutritional value. The author urges that more attention be paid to the soybean in France. Address: Directeur du Service botanique du Gouvernement général de l'Algérie.

72. Mitchell, Helen S. 1928. Nutritive value of the garbanza

pea. *Western Hospital and Nurses' Review* 11(6):26-27, 52-53. Aug. [9 ref]

• **Summary:** The garbanza is also known as the gram or chic pea, and sometimes as the Idaho pea. Artemus, in *The Encyclopedia of Foods and Beverages*, states that it is widely used in Mediterranean countries and was probable the "pulse" of the ancient Hebrews. Today is it a leading article of diet in Spain.

Pages 26-27 show the growth rates of rats fed garbanza pea, soy bean, and casein diets. Address: PhD, Nutrition Lab., Battle Creek Sanitarium [Michigan].

73. Vivenza, A. 1928. La coltivazione della soja in Italia e nelle sue Colonie [The cultivation of the soybean in Italy and in its colonies]. *Atti della Societa Italiana per il Progresso delle Scienze (Perugia)* 16:375-93. Oct. 30 to Nov. 5, 1927. [3 ref. Ita]

• **Summary:** Contents: Introduction. The soybean (*La soja*). Characteristics of the plant (and places where its cultivation is being tested). Varieties of soybeans. Ecological requirements. Cultural requirements. Current state of soybean cultivation in various countries: France, Spain, Central Europe, United States and Canada, Manchuria, Ceylon, New South Wales (*Nova Galles del Sud*). More recent soybean trials in Italy (Manvilli, Bottari, Marignoli in Spoleto, Ferrero in Sardegna, etc.). Experiments conducted at Perugia. Cultivation of soybeans in the Italian colonies (experiments in Italian Somalia, Libya (Tripoli), and potential in the Eritrean plateau (*l'Altipiano Eritreo*)). Ploughing under soybeans as green manure. Possibilities for cultivating soybeans on a vast scale in Italy. Conclusions.

Pages 388-89 discuss cultivation of soybeans in the Italian colonies. "The amazing ability of soya to benefit from intense sunlight, provided that the soil does not lack a certain level of humidity, makes one think of the potential of this crop on the fertile, well-watered soil of Italian Somalia. In this region, a legume very similar to the soybean has already been cultivated for several years and with excellent results—*Vigna sinensis*, called 'cowpea' by the Americans. This should be an indication of conditions favorable to the cultivation of soybeans, probably also as an intercrop.

"I understand that soybean experiments are being conducted by the large agencies of S.A.I.S. (Società Agricola Italo-Somala [Italo-Somalian Society of Agriculture]) in the Scidle (under Uebi Scebeli) headed by the eminent S.A.R., the duke of Abruzzi.

"The agricultural director of these agencies, Dr. Giuseppi Scassellati-Sforzolini, who is handling the experiment with great skill and interest, relates however that the initial results are less than satisfying. But these tests do not rule out altogether the soybean crop's potential for success in our colony.

"In Libya, under the care of the Office of Experimental Agriculture in Tripoli, experimental cultivation of soybeans

was carried out this year, but with negative results. In the autumn, the soybean plants demonstrated little resistance to the cold, and in the spring they showed a need for much irrigation.

"This information led me to the esteemed Prof. G. Leone, director of agricultural services of Tripolitania, who among other things, supports a repeat of the experiments next year." However the author apparently favors phasing out the planting of crops like the soybean in Libya.

"Further experimentation by the worthy *Istituto agrario sperimentale di Tripoli* [Experimental Agricultural Institute of Tripoli] will determine if soya resists normal minimum temperatures in the spring and the notorious *gibli* winds, and therefore will decide definitively on the possibility of spring crops in non-irrigated lands. If indeed possible, soya could then be planted in autumn, grow during the winter, and ripen in spring to either whole dry soybeans or green forage. Of course it would need to be provided with the introduction and diffusion of the specific nitrogen-fixing bacteria it requires.

"With regard to the Eritrean Colony, it can't be denied that on the Eritrean plateau, soya could become successfully cultivated. But this is also awaiting experimental resolution." In summary: Soya had been cultivated in Somalia and Libya by Oct. 1927.

"In Italy the soy bean cannot be grown as a second crop following a cereal, but only as a principal crop, partially replacing maize, beets or beans. Irrigation is needed for best results in the arid conditions of southern Italy... The early varieties of soy bean are the only ones which can be grown in Italy, and the yield of these is rather low, 5-20 bu. per acre, depending on soil fertility. While the culture of the soy bean in Italy may sometimes be usefully substituted for that of maize or beans, no great hopes should be built on it. Hitherto very few experiments have been made of soybean cultivation in the Italian colonies. The indications are that it would succeed in Somaliland and on the Eritrean plateau [Note that Eritrea is a province in northern Ethiopia; its capital is Asmara]. This is less probable for Libya, where the irrigated zone is limited and occupied by other more remunerative crops."

Note 1. This is the earliest document seen (Aug. 2009) concerning soybeans in Libya, or the cultivation of soybeans in Libya. This document contains the earliest date seen for soybeans in Libya, or the cultivation of soybeans in Libya (by Oct. 1927). The source of these soybeans is unknown.

Note 2. This is the earliest document seen (Aug. 2009) concerning soybeans in Somalia, or the cultivation of soybeans in Somalia. This document contains the earliest date seen for soybeans in Somalia, or the cultivation of soybeans in Somalia (by Oct. 1927). The source of these soybeans is unknown.

Note 3. This is the earliest document seen (Aug. 2009) concerning soybeans in connection with (but not yet in)

Eritrea and Ethiopia.

Note 4. Libya was occupied by Italians in 1914. The provinces of Tripolitania (in northwestern Libya) and Cyrenaica (in northeastern Libya) were united in 1934. Tripoli is a region in north Africa (in today's Libya) and a seaport city on the Mediterranean in that region. Long the object of Italian aspirations, Tripoli was finally ceded to Italy by Turkey as a result of the Tripolitan War (1911-12); under Italians the entire western part of the colony of Libya (1912-19) became known as Tripolitania; it was separated from Cyrenaica in 1919 and reunited in 1929. In 1934 the settled portion in the north was divided into four provinces for administrative purposes; one of these was Tripoli. Address: Professor.

74. Wright, Philip G. 1928. The tariff on animal and vegetable oils. New York, NY: The Macmillan Co. xviii + 347 p. Index. 19 cm.

• **Summary:** On the title page, under the author's name: "With the aid of the Council and Staff of the Institute of Economics." The "Director's Preface," by Harold G. Moulton begins (p. vii-xi): "Within the last decade a new set of economic relationships between the United States and the rest of the world has developed... The tariff, as the most important expression of the trade policy of this country, requires a fresh examination, and this the Institute of Economics has undertaken." The present study is one of a series on agricultural products.

The Introduction begins (p. 1): The tariff acts of 1921 and 1922 placed heavy duties on linseed, cottonseed, peanut, coconut, soya bean, and edible olive oils. Three of these oils, cottonseed, coconut and soya bean, were previously on the free list... Flaxseed, cottonseed, peanuts, and soya beans, raw materials of four of the above-mentioned oils, were also made dutiable at high rates, two of them, cottonseed and soya beans, being removed from the free list." Other oils, including perilla and sesame oils, remained on the free list. "The duties were not so much in the interest of the producers of the oils as of the producers of the raw materials of the oils; namely, dairymen, soya bean" growers, etc.

Chapter 2, "Properties, uses, and commercial importance of the fatty oils," discusses 10 different vegetable oils: Castor oil, Chinese nut or tung oil, coconut oil, corn oil, cottonseed oil, linseed oil, olive oil (grown mostly in Spain and Italy, with some in California), palm oil and palm kernel oil, peanut oil, and soya bean oil. It also discusses 5 animal fats, incl. butter substitutes and whale oil. A table (p. 37) shows "Production, consumption, imports, and exports of cottonseed oil, 1920-1926." Cottonseed oil ranks first among U.S. vegetable oils in both production and consumption (including edible and inedible consumption). In 1914 production reached 1,790 million lb and consumption was 1,589 million lb, or 89% of the output and 64% of the consumption of all vegetable oils in the USA. Production

then fell due to the boll-weevil, and by 1922 it had sunk to but little more than half its level in 1914. Since that year there has been a rapid recovery. Production in 1926 reached 1,760 million lb, and accounted for about 55% of all the vegetable oil consumed in the USA that year (p. 36). Corresponding figures are given for the other oils discussed in this chapter.

The section on "Soya bean oil" (p. 50-52) has the following contents: Raw material, properties and uses, methods of production, table showing production, imports, and exports of soya bean oil for the years 1914, and 1919-1926.

The soya bean is not grown to any considerable extent in the USA for its oil. "It is grown rather for forage and for introducing nitrogen into the soil." The quantity of oil "produced" in the USA (refined from crude oil imported from the Orient) is less than 2% of domestic consumption. The crude oil "has a distinctly 'beany' taste and odor. When refined and deodorized it is light yellow, nearly odorless and tasteless, closely resembling refined cottonseed oil. It is primarily a soap oil, but is also a semi-drying oil and hence is used in the manufacture of paints, varnishes, oil cloths, linoleums, and printers' inks. As a drying oil it is for most purposes inferior to linseed but may be mixed with linseed in proportions not to exceed 20 per cent with satisfactory results. For some uses it is used alone and is said to be superior to linseed. Finally, when refined, and, if necessary, hydrogenated, it is an edible oil and is used, but not extensively in the United States, in the manufacture of lard substitutes, oleomargarin, and as a salad oil. The value of soya bean oil has been fully appreciated only within recent years... Refining and especially hydrogenation have expanded its usefulness. It is now among the most important of the vegetable oils."

The oil, constituting about 18% of the bean, "is obtained by crushing or by the use of a solvent, such as benzine. A higher percentage of the oil content of the bean is obtained by the use of a solvent—95 as against 50 to 75 per cent—but at a loss of the oil cake." "The chief sources of imports of soya bean oil are China (especially Kwantung [Manchuria]) and Japan. Both imports and exports have declined greatly since 1919. European countries import large quantities of the beans for crushing. This, however, is not the practice in the United States and there is no record of imports of soya beans."

A full-page table (p. 108) gives "Rates of duty on principal fatty oils, under tariff acts from 1909 to 1922 inclusive." Figures are given for 33 oils and fats. Soybean oil was imported free of any duty under the tariff acts of 1909 and 1913. In 1921 the rate of duty was 20 cents/gallon or 2.667 cents/lb. In 1922 it was slightly lower, 2½ cents/lb.

Another full-page table (p. 109) gives the "Rates of duty on specified raw materials of vegetable oils" under the same 4 acts. In 1909 Soya beans had the highest duty of any oilseed, 45 cents per bushel of 50 lbs. In 1912 and 1921 they



came in free. In 1922 the duty was ½ cent/lb. A table (p. 132) shows the rise in price of various oils (incl. soya bean) from June 1921 to Dec. 1923 and Dec. 1925.

Chapter 7, titled “Effects of recent tariff changes on prices, production, and trade” includes a discussion of soya bean oil (p. 218).

In Chapter 8, titled “What shall we do with the oils duties?,” the section on “The food oils” begins (p. 233-37): “The duties on cottonseed, peanut, and soya bean oils have failed to accomplish the purposes for which they were imposed or have done more harm than good... In the case of soya bean oil the price difference has been increased by virtually the full amount of the duty, and to this extent domestic crushers of soya beans have doubtlessly benefited. But it is very doubtful whether this benefit has extended to growers.”

The appendix contains numerous statistical tables which include information on soybean oil: I. Domestic production of the principal oils and fats, 1914 and 1919-1926 (p. 260-61). II. Imports of the principal animal and vegetable oils and fats for the years specified (1914-1926) (p. 262-63). III. Exports of the principal animal and vegetable oils and fats, 1914, and 1919-1926 (p. 264-65). IV. Domestic consumption of the principal animal and vegetable oils and fats, 1914, and 1919-1926 (p. 266-67). V. Data indicating the extent to which the United States is self-sufficient in the production of the fatty oils (1920 and 1926) (p. 268-71). VI. Domestic production and foreign trade [imports & exports] of the United States in raw materials of the vegetable oils, 1914 and 1919-1926 (p. 272-73). VII. Revenues derived from imports of the principal animal and vegetable oils and fats, by months, Jan. 1920 to Sept. 1927, inclusive (p. 274-75).

Note: This is the earliest U.S. document seen (Sept. 2003) that analyzes the effects of tariffs and other U.S. government policies on soya beans and soya bean oil.

Also discusses: hempseed oil, oil cake (Chinese nut, coconut, cottonseed, linseed, soya bean), and peanuts. Address: Inst. of Economics, Washington, DC.

75. Adolph, William H. 1930. A 4000-year food experiment. *Scientific American* 143:425-28. Dec. [Eng]

• **Summary:** The average Chinese lives on only a few cents a day. “This is not a myth, nor is it a sign of poverty; it is a simple statement of an economic accomplishment of which China may justly feel proud.” Today the land feeds 400 million people.

“The important place occupied by legumes (this means the soy bean) in China deserves more than passing mention. Of all the varieties of beans, it is nothing short of remarkable that the Chinese farmer-dietitian, thousands of years ago, chose to develop and retain in his agricultural repertoire just that one variety which contained the highest percentage of protein, and also the highest percentage of fat. The soy bean was the one vegetable product which could in any sense

replace meat in his dietary. But the soy bean and its wonders is another story.

“It is evident that China is not addicted to the meat eating evil” (see Table 2).

“The peasant farmer consumes practically not meat at all, except for an occasional indulgence at the time of the Lunar New Year. It is probable that the Chinese approach as near to being a truly vegetarian people as is to be found anywhere on the earth’s surface.”

In China only 9% of the protein consumed is of animal origin compared with about 80% in the USA. In making bread, “wheat protein should be supplemented with soy bean flour.”

Tables show: (1) Composition of the Chinese dietary (in percentages by weight); North China vs. United States. Cereals and beans: 65% vs. 25%. Vegetables and fruits: 27% vs. 20%. Butter, fats, sugar: 1% vs. 14%. Meat and fish: 4% vs. 18%. Eggs: 1% vs. 5%. Milk and cheese: 0% vs. 15%. Other foods: 2% vs. 3%.

(2) Composition of the Chinese dietary (intake of nutrients per man per day for North China). Total food: 1,188.0 gm. Total protein: 86.4 gm. Total fat: 34.1 gm. Total carbohydrate: 537 gm. Total energy value: 2794.0 calories. Weight of average man: 60.0 kg.

(3) Meat consumption in the principal countries of the world (grams per capita per day): United States 149. Great Britain 130. France 92. Belgium and Holland 86. Austria-Hungary 79. Spain 61. Russia 59. Italy 29. Japan 25. China (North) 15.

Figures show: (1) The animal body as a converter of energy: One pound of cereal: Burned as fuel or eaten directly as food, 100% is recovered = 1,500 calories. Fed to a cow and recovered as milk: 17% is recovered = 255 calories. Fed to a beef steer and recovered as meat: 10% is recovered = 150 calories.

(2) How one dollar is used to purchase food—North China vs. United States. Pie charts show: North China: Bread and cereals 75 cents. Fruits and vegetables 10 cents. Meat and fish 7 cents. Eggs 3 cents. Fats 3 cents. Milk 0.1 cent. Other foods 2 cents. United States: Meat 33 cents. Fruits and vegetables 16 cents. Fats and sugar 16 cents. Bread and cereals 13 cents. Milk 10 cents. Other foods 7 cents.

A small portrait illustration shows William Adolph. Photos show: (1) Plowing in North China. No draft animals are used. “A man is often a more economical draft animal than a mule.” (2) Two men with a hand-cart walking behind a cow. “A Chinese highway 18 inches in width effects a saving in land area available for cultivation, which means food for more mouths.” (3) “One effect of population pressure: a deforested mountain in North China.” Population pressure has also led to the discovery that hogs are the most efficient source of meat. Address: PhD, Assoc. Prof. of Chemistry, Univ. of Nebraska. Recently appointed Prof. of Chemistry, Yenching Univ., Peking.

76. Forjaz, D.A.P. 1930. [Fluoroscopic analysis and its application to Portuguese (fatty) oils]. *Revista de Química/Química Pura e Aplicada* 5:29-34. (Chem. Abst. 26:3126). [Por]\*

77. Abadal, D. José; Soroa, José María de. 1932. Cultivo y aplicaciones de la soja [Cultivation and applications of the soybean]. Madrid: Patronato Central para la Protección de Animales y Plantas. 44 p. Illust. [Spa]

• **Summary:** Contents: Introduction (preliminary notes). Part I: Cultivation and applications of soya. Chart of utilization of the soybean seed. Agronomic notes and details on soybean cultivation. Part II: Soya as a food. Nutritional value, soya as a vegetable (green vegetable soybeans; *Soja, como verdura*), soy sauce (*salsa de soja*), soymilk (*leche*), condensed soymilk (*leche concentrada / condensada*), powdered soymilk (*leche en polvo*), fermented soymilk (*leche fermentada*), soy cheese (*queso de soja*) [tofu], soy casein (*caseína de soja*), soy flour (*harina de soja*), soy bread (*pan de soja*), Soyolk (soy flour made by Dr. Berczeller), whole-grain soy bread (*pan integral*), soy flour tablets (*comprimidos*), pastries, biscuits, puddings, etc. (*pasteles, bizcichos, puddings*), soy oil (*aceite de soja*), fermented soy products (*productos de la soja fermentada: natto, miso, shoyu*), confectionery products (*productos de confiteria*), chocolate (*chocolate*), coffee (*café*), soy ferments/enzymes (*fermentos de soja*), products made by Caséo-Sojaïne (*Caseo-Sojaïne de Paris*). Soy as a livestock food. Appendix.

“As early as 1918 a Spanish public official, Don Julio de Palencia, the Spanish Consul in Shanghai, sent the State Department (*Ministerio de Estado*) a magnificent report specifying the great attention that representatives of the principal countries of the world were giving to this crop [the soya bean], and the relevance that it would have in the agricultural economy of the future. What a pity that Spain has been the only civilized country to ignore the study of the soya bean and its exploitation on a large scale” [p. 5].

“Finally we must make public our thanks to the spokesmen of this foundation/board (*Patronato*) for the special work they have done in writing this booklet: Don José María de Soroa, secretary of the Special School for Agricultural Engineers (*Escuela Especial de Ingenieros Agrónomos*), and Dr. Don José Abadal, chief of the Bureau for the Inspection of Pharmaceutical Services of the Ministry of War (*Negociado de la Inspección de Servicios Farmaceuticos del Ministerio de la Guerra*)” [p. 6].

“In 1917 the Spanish Consul in Shanghai, Don Julio Palencia, sent to the State Department a study on cultivation of soya, proposing that tests be done to acclimatize this valuable crop to our country.

“In Motril and later at the southern agricultural station of Malaga, the agricultural engineer D. Arsenio Rueda has been cultivating soya for the past 10 years [i.e. since 1923]

in plots of 5 ares [1 are = 100 square meters], obtaining 60 liters (each liter weighing 780 gm) in each one.

“The white as well as the black varieties give good results, though the white ones do best. The seeds have been distributed to farmers who have noticed that, even though at first the goats that were given them as food rejected them, after a few days of getting used to this grain preferred them to such an extent that one must avoid growing this plant near the herd’s path lest the herd be attracted and devour it all.

“Although soya is a legume which draws many nutrients out of the soil (*esquilante*), it has according to Mr. Rueda, sufficient interest since it allows usage of terrains where field beans cannot be used due to the invasion of the pest called *Orobanche speciosa*, commonly called ‘Jopo.’ This parasite does not attack soya...

“Besides the quoted trials, it has been more than 25 years since soy has been grown in Spain with success due to the interest and zeal that in their patriotic work, the agricultural engineer Mr. Eduardo Noriega undertook with his partner, Mr. Ortiz, on the farm of ‘Jerez.’

“He was successful during many years using the yellow and black varieties, later on also cultivating it in the Spanish central region.

“We think it useful also to state in writing the following data about soy grown by Dr. D. Jose Abadal in Lerida during the years of 1925-1926.

“The experiment was done only out of curiosity, with the intention of seeing if it could be grown in said province. Japanese seeds of the hirsute soy variety, yellow seed, used as food for diabetes, were used. The planting was done in a garden with seeds that had been soaked for ten hours, with no more care or fertilizers than those used for all the existing plants of that garden. The terrain of course was one of easy irrigation and located in Lerida where it is very hot all during the summer.

“This brief essay demonstrates that soy can be grown in irrigated terrain in very hot places and with little care.

“Fifteen years ago, the agricultural Engineer D. Jesus Andreu, in the province of Pontevedra [in the northwest corner of Spain, just north of Portugal, bordering the Atlantic ocean], did some tests with good results on growing soy as a forage plant.

“We also have news, though not concrete, of other successful tests done in the provinces of Madrid and Toledo.” Address: 1. T.C. Farmaceutico Militar; 2. Ingeniero Agronomo e Ingeniero Sanitario, Spain.

78. Bailey, Ethel Zoe. 1933-1966. Glycine soja—Foreign sources. Part I. Ithaca, New York: L.H. Bailey Hortorium. 3 cards. Unpublished.

• **Summary:** *Glycine soja* is the scientific name for the wild soybean, an annual plant. This name has never been used for the cultivated soybean.

These three hand-written index cards are in the Bailey

Hortorium's index system of nursery catalogs and/or botanic garden seed lists developed by Ethel Zoe Bailey. In this index system, there are eleven major cards and eight minor cards related to the soybean. On each card are two-part coded entries referring to botanic gardens or nurseries.

Part 1 is the code for the name of the botanic garden, and part 2 is the last two letters of the earliest year in which the plant for that card appeared in this garden's catalog. For example "Buit 33" refers to the 1933 catalog from Buitenzorg, Java. [LR 1982] means that a list of seeds and plants (whether or not it contained soy) was "Last Received" from that source [Buitenzorg] in 1982. There are 72 listings for *Glycine soja* from foreign sources. As of Nov. 1997 most of the catalogs and seed lists mentioned below are available in the Bailey Hortorium, located in Mann Library, Cornell University, Ithaca, New York.

(1) Buit. 33—Lands Plantentuin Gov. Bot. Garden, Buitenzorg [later renamed Bogor], Java, Indonesia, 1933 [LR 1977; now known as Botanic Gardens, Kebun Raya, Bogor, Indonesia]. (2) Saig. 36—Hortus Botanicus Saigonensis, Saigon, Vietnam, 1936 [LR 1964]. (3) Turc. 37—Hortus Botanicus Turcomanicus, Turkonen Botanical Garden, 744012 Ashkhabad, Turkmen S.S.R. [later Turkmenistan], 1937 [LR 1976]. (4) Wey. 38—Michael A. Weymarn, 20 Grodekoosky Blvd., Harbin, Manchuria, 1938 [Later part of China]. (5) Lenin. 39—Botanical Garden (Botanitschesky Institut), Leningrad, Russia, USSR, 1939 [LR 1976].

(6) Buc. 40—Hortus Botanicus Universitatis Bucurestiensis "C.I. Parhon," Sos. Cotroceni nr. 32, R.P.R., Bucharest 15, Romania, 1940. (7) Mort. 39—La Mortola (Giardino Botanico Hanbury), Ventimiglia 18036, Italy, 1939 [LR 1975]. (8) Co. 41—Hortus Botanicus Conimbrigensis, Coimbra, Portugal, 1941 [LR 1982]. (9) Port. 42—Estacao Agronomica Nacional, Oeiras (Lisboa), Portugal, 1942 [LR 1982]. (10) Dach. 43—All Union Scientific Research Institute of Medicinal Plants, Lenino-Dachnoe, Moscow District, Russia, USSR, 1943 [LR 1943].

(11) Brux. 40—Nationale Plantentuin van Belgie (formerly named Hortus Botanicus Bruxellensis), Dienst Levende Verzamelingen, Domaine van Bouchot, B-1860 Meise (Brussels), Belgium, 1940 [LR 1981]. (12) Gater. 49—Institut für Kulturpflanzenforschung, DDR-4325 Gatersleben, Kr. Aschersleben, Bezirk Halle, East Germany, 1949 [LR 1981]. (13) Camb. 48—University Botanic Garden (formerly named Horto Cantabrigiensis Academiae), Cambridge, England, 1948 [LR 1981]. (14) B.A. 51—Division de Exploraciones e Introduccion de Plantas, Ministerio de Agricultura de la Nacion, Buenos Aires, Argentina, 1951 [LR 1958]. (15) Jena 52—Botanischen Gartens der Friedrich Schiller Universitaet, Jena, Germany, 1952 [LR 1977].

(16) Modena 53—Istituto ed Orto Botanico [Botanical Garden] dell'Universita di Modena, Modena, Italy, 1953 [LR 1979]. (17) Munchen 55—Botanischer Garten Muenchen-

Nymphenburg, Menzi ger Str. 63 BRD, D-8000 Muenchen [Munich] 19, Germany, 1955 [LR 1981]. (18) Tar. 56—Villa Taranto Gardens, Pallanza, Italy, 1956 [LR 1974]. (19) Berl. 55—Botanischer Garten, Berlin-Dahlem, Germany, 1955 [LR 1975]. (20) Ruzy. 57—Research Institute for Plant Production, Ruzyne at Prague, Czechoslovakia [in the Czech Republic since Jan. 1993], 1957 [LR 1957].

(21) Kohr. 57—Gerhard Kohres, Bahnstrasse 101, D-6101 Erzhausen, Darmstadt, Germany, 1957 [LR 1973]. (22) Szeg. 57—Hortus Botanicus Universitatis Szeged, Szeged, Hungary, 1957 [LR 1976]. (23) Brno. 58—Botanika Gardeno de Veterinara Universitato, Brno 12, Czechoslovakia [in the Czech Republic since Jan. 1993], 1958 [LR 1968]. (24) Zurich 59—Botanischer Garten der Universitaet Zuerich (and Parco Botanico del Cantone Ticino, Isole di Brissago, Lago Maggiore), Zollikerstrasse 107, CH-8008 Zurich, Switzerland, 1959 [LR 1977]. (25) Gott. 58—Botanischer Garten der Universitaet Goettingen, Gottingen, Germany, 1958 [LR 1981].

(26) Erl. 58—Botanischer Garten der Universitaet Erlangen, Schlossgarten 4, Erlangen, Germany, 1958 [LR 1977]. (27) Hohen. 58—Botanischer Garten der Landwirtschaftlichen Hochschule Stuttgart-Hohenheim, Stuttgart-Hohenheim, Germany, 1958 [LR 1981]. (28) Kassel 58—Botanischer Garten der Stadg. Kassel, Bosestrasse 15 (Park Schonfeld), Kassel, Germany, 1958 [LR 1965]. (29) Marb. 58—Botanischer Garten der Philipps-Universitaet, Auf den Lahnbergen, 3550 Marburg 1, Germany, 1958 [LR 1981; Formerly located at Pilgrimstein 4]. (30) Bonn U. 58—Botanischer Garten der Universitaet Bonn, Meckenheimer Allee 171, Bonn, Germany, 1958 [LR 1979].

(31) Glasgow 60—Botanic Gardens, Glasgow W. 2, Scotland, UK, 1960 [LR 1982]. (32) Lond. 60—University of London, Botanical Supply Unit, Elm Lodge, Englefield Green, Surrey, England, UK, 1960 [LR 1981]. (33) Liv. 61—University of Liverpool Botanic Gardens, Ness, Neston, Wirral, Cheshire, England, UK, 1961 [LR 1982]. (34) Kew 61—Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, England, UK, 1961 [LR 1982]. (35) Monpl. 62—Jardin des Plantes, Universite de Montpellier, Faubourg St. Jaumes, Montpellier, France, 1962 [LR 1978].

(36) Komen. 62—Botanicka Zahrada Univerzity Komenskeho, Bratislava, Czechoslovakia, 1962 [LR 1965; Bratislava has been the capital of Slovakia since 1992]. (37) Humb. 63—Institut für Botanik der Landwirtschaftlich-Gaertnerischen Fakultät der Humboldt Universitaet zu Berlin, Invalidenstrasse 42, Berlin 4, Germany, 1963, [LR 1964]. (38) Hok. 64—Botanic Garden of the Faculty of Agriculture, Hokkaido University, Sapporo, Japan, 1964 [LR 1982]. (39) Padova 63—Istituto Botanico dell'Universita, Via Orto Botanico 15, Padova [Padua], Italy, 1963 [LR 1980]. (40) Kosice 63—Botanicka zahrada University P.J. Safarika, Kosice, Slovakia, 1963 [LR 1981].

(41) Pal. 64—Hortus Botanicus Universitatis Palackianae,



Olomouc, Leninova 26, Czechoslovakia, 1964 [LR 1979]. (42) Cluj. 63–Hortus Botanicus Clusiensis, Universitas “Babes-Bolyai,” Str. Republicii Nr. 42, 3400 Cluj Napoca, Romania, 1963 [LR 1981]. (43) Pecs 63–Hortus Botanicus Pecs, Ifjusag Utja 6, Pecs, Hungary, 1963 [LR 1976]. (44) Vasak 63–Vladimir Vasak Agricultural Research Station, Sumperk-Temenice, Czechoslovakia [in the Czech Republic since Jan. 1993], 1963 [LR 1963]. (45) Bud. 64–Hortus Botanicus Universitatis Hungariae, Illes u. 25, Budapest VIII, Hungary, 1964 [LR 1981].

(46) Trieste 64–Universita degli studi di Trieste, Trieste, Italy, 1964 [LR 1964]. (47) Nijm. 65–Hortus Botanicus Universitatis Noviomagensis, University of Nijmegen, Driehuizerweg 200, Nijmegen, Netherlands, 1965 [LR 1981]. (48) Gob. 66–Prachi Gobeson, Narendra Nager (Dunlop Bridge), P.O. Belgharia, Calcutta-56, India, 1966 [LR 1966; Formerly located at Anandrapuri, P.O. Barrackpore, Calcutta]. (49) Ferr. 65–Hortus Botanicus Ferrariensis, Istituto ed Orto Botanico dell’Universita di Ferrara, Ferrara, Italy, 1965 [LR 1976]. (50) Rouen 66–Jardin Botanique de la Ville de Rouen, 7 Rue de Trianon, Rouen, France, 1966 [LR 1981]. Continued. Address: L.H. Bailey Hortorium, 462 Mann Library, Cornell Univ., Ithaca, New York 14853-4301. Phone: 607-255-7981. Fax: 607-255-7979.

79. Bailey, Ethel Zoe. 1933-1982. *Glycine max*–Foreign sources. Ithaca, New York: L.H. Bailey Hortorium. 2 cards. Unpublished.

• **Summary:** These two hand-written index cards are in the Bailey Hortorium’s index system of nursery catalogs and/or botanic garden seed lists developed by Ethel Zoe Bailey. In this index system, there are eleven major cards and eight minor cards related to the soybean. On each card are two-part coded entries referring to botanic gardens or nurseries.

Part 1 is the code for the name of the botanic garden, and part 2 is the last two letters of the earliest year in which the plant for that card appeared in this garden’s catalog. For example “Kew 33” refers to the 1933 catalog of the Royal Botanic Gardens at Kew, England. [LR 1982] means that a list of seeds and plants (whether or not it contained soy) was “Last Received” from that source [Kew] in 1982. There are 55 listings for *Glycine max* from foreign sources. As of Nov. 1997 most of the catalogs and seed lists mentioned below are available in the Bailey Hortorium, located in Mann Library, Cornell University, Ithaca, New York.

(1) Kew 33–Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, England, UK, 1933 [LR 1982]. (2) Taih. 34–Taihoku Botanic Garden, Taihoku, Formosa [Taiwan], 1934. (3) Adel. 50–Adelaide Botanic Garden, Adelaide, South Australia, 1950 [LR 1982]. (4) Tar. 50–Villa Taranto Gardens, Pallanza, Italy, 1950 [LR 1974]. (5) Upps. 50–Universitets Botaniska Tradgard, P.O. Box 123, Uppsala, Sweden, 1950 [LR 1979].

(6) Port. 51–Estacao Agronomica Nacional, Oeiras (Lisboa), Portugal, 1951 [LR 1982]. (7) Camb. 51–University Botanic Garden, Cambridge, England, UK, 1951 [LR 1981]. (8) Copen. 50–Universitetets Botaniske Have Kobenhaven, Ø Farimagsgade 2B, DK-1353, Copenhagen K, Denmark, 1950 [LR 1981]. (9) Wien 54–Botanischer Garten der Universitaet Wien, Rennweg 14, Wien III, Austria, 1954 [LR 1976]. (10) Modena 53–Istituto ed Orto Botanico [Botanical Garden] dell’Universita di Modena, Modena, Italy, 1953 [LR 1979].

(11) P.I. 53–Bureau of Plant Industry, Dep. of Agriculture, Manila, Philippines, 1953 [LR 1953]. (12) B.A. 55–Division de Exploraciones e Introduccion de Plantas, Ministerio de Agricultura de la Nacion, Buenos Aires, Argentina, 1955 [LR 1958]. (13) N.H.L. 56–National Institute of Hygienic Sciences (formerly: National Hygienic Laboratory), Kasukabe Experiment Station of Medicinal Plants, No. 30 Kasukabe-shi, Saitama-ken, Japan, 1956 [LR 1963]. (14) Co. 57–Hortus Botanicus Conimbrigensis, Coimbra, Portugal, 1957 [LR 1982]. (15) Gater. 56–Institut für Kulturpflanzenforschung, DDR-4325 Gatersleben, Kr. Aschersleben, Bezirk Halle, East Germany, 1956 [LR 1981].

(16) Prag. 56–Hortus Botanicus Universitatis Carolinae Pragensis, Prague, Czechoslovakia, 1956 [LR 1977]. (17) Hamburg 58–Botanischer Garten Hamburg, Jungiustr. 6, Hamburg 36, Germany, 1958 [LR 1973]. (18) Milan 58–Hortus Botanicus Mediolanensis, Istituto Orto Botanico dell’Universita di Milano, Via Guiseppe Colombo 60, Milan, Italy, 1958 [LR 1980]. (19) Read. 59–Agricultural Botanic Garden, University of Reading, Reading, Berkshire, England, UK, 1959 [LR 1974]. (20) Rabat 63–Institut National de la Recherche Agronomique, B.P. 415, Rabat, Morocco, 1963 [LR 1971; Formerly: 99 Avenue de Temara].

(21) L’zig 63–Botanischer Garten der Karl Marx Universitaet, Leipzig, Germany, 1963 [LR 1976]. (22) Jena 63–Botanischen Gartens der Friedrich Schiller Universitaet, Jena, Germany, 1963 [LR 1977]. (23) Tap. 63–Institutum Agrobotanicum, Orszagos Agrobotanikai Intezet, Taposzele, Hungary, 1963 [LR 1978]. (24) Brux. 64–Nationale Plantentuin van Belgie (formerly named Hortus Botanicus Bruxellensis), Dienst Levende Verzamelingen, Domaine van Bouchot, B-1860 Meise (Brussels), Belgium, 1964 [LR 1981]. (25) Berg 65–Hortus Botanicus Bergianus (Bergianska Tradgarden), Stockholm 50, Sweden, 1965 [LR 1981].

(26) Pecs 65–Hortus Botanicus Pecs, Ifjusag Utja 6, Pecs, Hungary, 1965 [LR 1976]. (27) Essen 66–Botanischer Garten Essen, Hortus Botanicus Assindiensis, Essen, Germany, 1966 [LR 1977]. (28) Bonn U. 65–Botanischer Garten der Universitaet Bonn, Manesova ul. 13, Meckenheimer Allee 171, Bonn, Germany, 1965 [LR 1979]. (29) Kosice 68–Botanicka zahrada University P.J. Safarika, Kosice, Slovakia, 1968 [LR 1981]. (30) S.C. 68–Jardin Agrobotanico de Santa Catalina, Llavollol FNGR, Argentina,

1968 [LR 1974].

- (31) Barc. 70–Institut Botanic de Barcelona, Av. Muntanyans, Parc de Montjuic, Barcelona 4, Spain, 1970 [LR 1981]. (32) Munchen 71–Botanischer Garten Muenchen-Nymphenburg, Menzi ger Str. 63 BRD, D-8000 Muenchen [Munich] 19, Germany, 1971 [LR 1981]. (33) Hohen. 72–Botanischer Garten der Landwirtschaftlichen Hochschule Stuttgart-Hohenheim, Stuttgart-Hohenheim, Germany, 1972 [LR 1981]. (34) Frank. 72–Botanischer Garten der Johann Wolfgang Goethe Universitaet, Siesmayerstrasse 72, 6 Frankfurt am Main, Germany, 1972 [LR 1980]. (35) Oxf. 73–Botanic Garden, University of Oxford, Rose Lane, Oxford, England, UK, 1973 [LR 1981]. (36) Koln 73–Botanischer Garten und Arboretum der Stadt Köln [Cologne], Ave. Botanischen Garten, 5000 Koeln 60, Germany, 1973 [LR 1981; Formerly at Amsterdammer Strasse 36]. (37) Hal. 74–Hortus Botanicus Universitatis Halensis, Halle, Germany, 1974 [LR 1982]. (38) Gen. 73–Conservatoire et Jardin Botaniques de la Ville Geneve, Case postale 60, CH. 1292 Chambesy / Geneva, Switzerland, 1973 [LR 1981]. (39) Zurich 74–Botanischer Garten der Universitaet Zuerich (and Parco Botanico del Cantone Ticino, Isole di Brissago, Lago Maggiore), Zollikerstrasse 107, CH-8008 Zurich, Switzerland, 1974 [LR 1977]. (40) Amst. 73–Jardin Botanique de l’Universite Amsterdam, Amsterdam, Netherlands, 1973 [LR 1975]. (41) Bes. 73–Jardin Botanique de la Ville et de l’Universite (de Besancon), Place Marechal Leclerc, 25000 Besancon, France, 1973 [LR 1981]. (42) Dijon 73–Hortus Botanicus Divionensis, Jardin Botanique, 1 Avenue Albert-Premier, 21000 Dijon, France, 1973 [LR 1981]. (43) Wars. 75–Hortus Botanicus Universitatis Varsaviensis, Warsaw, Poland, 1975 [LR 1981]. (44) Berl. 75–Botanischer Garten, Berlin-Dahlem, Germany, 1975 [LR 1975]. (45) Cluj. 76–Hortus Botanicus Clusiensis, Universitas “Babes-Bolyai,” Str. Republicii Nr. 42, 3400 Cluj Napoca, Romania, 1976 [LR 1981]. (46) Glasgow 77–Botanic Gardens, Glasgow W. 2, Scotland, UK, 1977 [LR 1982]. (47) Monpl. 78–Jardin des Plantes, Universite de Montpellier, Faubourg St. Jaumes, Montpellier, France, 1978 [LR 1978]. (48) Erl. 77–Botanischer Garten der Universitaet Erlangen, Schlossgarten 4, Erlangen, Germany, 1977 [LR 1977]. (49) Groz. 80–Hortus Agrobotanicus Instituti Agronomici “Dr. Petru Groza,” Cluj, Romania, 1980 [LR 1980]. (50) Duss. 79–Botanisches Institut der Universitaet Duesseldorf, Christophstrasse 82, Dusseldorf, Germany, 1979 [LR 1981]. (51) Tubin. 80–Botanischer Garten der Universitaet Tuebingen, Tuebingen, Germany, 1980 [LR 1980]. (52) Vac. 82–Research Institute for Botany, Hungarian Academy of Sciences Botanical Garden, 2183 Vacratot, Hungary, 1982 [LR 1982]. (53) Graz 82–Botanischer Garten der Universitaet Graz, Holtei-Gasse 6, A-8010 Graz, Austria, 1982 [LR 1982]. (54) Jo. 81–Botanical Garden, Univ. of

Joensuu, P.O. Box 111, SF-80101 Joensuu, Finland, 1981 [LR 1981]. (55) Utr. 82–“Hortus Botanicus” Utrecht & “Cantonspark” Baarn of the State University of Utrecht, Utrecht, Netherlands, 1982 [LR 1982]. Address: L.H. Bailey Hortorium, 462 Mann Library, Cornell Univ., Ithaca, New York 14853-4301. Phone: 607-255-7981. Fax: 607-255-7979.

80. Bailey, Ethel Zoe. 1934-1976. *Glycine hispida*–Foreign sources. Ithaca, New York: L.H. Bailey Hortorium. 2 cards. Unpublished.

• **Summary:** *Glycine hispida* was an early scientific name for the soybean given by C.J. Maximowicz in 1873. It was superseded by *Soja max* Piper in 1914, and finally by the current name, *Glycine max* (L.) Merrill in 1917.

These two hand-written index cards are in the Bailey Hortorium’s index system of nursery catalogs and/or botanic garden seed lists developed by Ethel Zoe Bailey. In this index system, there are eleven major cards and eight minor cards related to the soybean. On each card are two-part coded entries referring to botanic gardens or nurseries.

Part 1 is the code for the name of the botanic garden, and part 2 is the last two letters of the earliest year in which the plant for that card appeared in this garden’s catalog. For example “Will. 34” refers to the 1934 catalog of J.P. Williams & Bros., Colombo, Ceylon (Renamed Sri Lanka in 1972) [LR 1982] means that a list of seeds and plants (whether or not it contained soy) was “Last Received” from that source [J.P. Williams] in 1982. There are 34 listings for *Glycine hispida* from foreign sources. As of Nov. 1997 most of the catalogs and seed lists mentioned below are available in the Bailey Hortorium, located in Mann Library, Cornell University, Ithaca, New York.

(1) Will. 34–J.P. Williams & Bros., 94 Wall St., Kotahena, Colombo, Ceylon, 1934. (2) Kirst. 37–National Botanic Garden Kirstenbosch, Private Bag X7, Claremont 7735, South Africa, 1937 [LR 1983; Formerly in Newlands, C.P.]. (3) Alger 36–Jardin Botanique, Universite d’Alger, Algiers, Algeria, 1936 [LR 1956]. (4) Lenin. 40–Botanical Garden (Botanitschesky Institut), Leningrad, Russia, USSR, 1940 [LR 1976]. (5) Co. 41–Hortus Botanicus Conimbrigensis, Coimbra, Portugal, 1941 [LR 1982].

(6) Brux. 40–Nationale Plantentuin van Belgie (formerly named Hortus Botanicus Bruxellensis), Dienst Levende Verzamelingen, Domaine van Bouchot, B-1860 Meise (Brussels), Belgium, 1940 [LR 1981]. (7) Kew 47–Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, England, UK, 1947 [LR 1982]. (8) Copen. 48–Universitets Botaniske Have Kobenhaven, ø Farimagsgade 2B, DK-1353, Copenhagen K, Denmark, 1948 [LR 1981]. (9) Gand. 52–Plantentuin der Rijksuniversiteit (formerly named Hortus Botanicus Gandavensis), K.L. Ledeganckstraat 35, B-9000 Gent, Belgium, 1952 [LR 1981]. (10) Munchen 53–Botanischer Garten Muenchen-Nymphenburg, Menzi ger Str.

63 BRD, D-8000 Muenchen [Munich] 19, Germany, 1953 [LR 1981].

(11) Gen. 58–Conservatoire et Jardin Botaniques de la Ville Geneve, Case postale 60, CH. 1292 Chambes / Geneva, Switzerland, 1958 [LR 1981]. (12) Basel 57–Botanischer Garten der Universitaet Basel, Schonbeinstrasse 6, Basel, Switzerland, 1957 [LR 1980]. (13) St. A. 57–University Botanic Gardens, St. Andrews, Scotland, UK, 1957 [LR 1982]. (14) Ant. 58–Hortus Botanicus Antveroiensis Plantentuin, Gerard le Grellelaan 5, Antwerp, Belgium, 1958 [LR 1973]. (15) Kassel 58–Botanischer Garten der Stadg Kassel, Bosestrasse 15 (Park Schonfeld), Kassel, Germany, 1958 [LR 1965].

(16) Erevan 58–Hortus Botanicus Academiae Scientiarum RSS Armeniae, Yerevan (Epebah), Kanaker, Armenia, 1958 [LR 1974]. (17) Torino 58–Hortus Botanicus Universitatis Taurinensis, Istituto ed Orto Botanico dell'Universita, Viale Matthioli 25, Torino [Turin], Italy, 1958 [LR 1978]. (18) Ferr. 61–Hortus Botanicus Ferrariensis, Istituto ed Orto Botanico dell'Universita di Ferrara, Ferrara, Italy, 1961 [LR 1976]. (19) Zag. 61–Botanicki VRT Univerzitet, Hortus Botanicus Facultatis Scientiarum Naturalium et Mathematicarum Universitatis Zagabiensis, Marculicev TRG 9a, Zagreb, Yugoslavia [Croatia by June 1991], 1961 [LR 1961]. (20) Alma 61–Hortus Botanicus Academiae Scientiarum RSS Kazachstan, Alma-Ata 480070, Kazakhstan, USSR, 1961 [LR 1976].

(21) Cra. 61–Hortus Botanicus Instituti Agronomici Craiovensis, Strada Comuna din Paris no. 24, Craiova, Romania, 1961 [LR 1963]. (22) Wars. 62–Hortus Botanicus Universitatis Varsaviensis, Warsaw, Poland, 1962 [LR 1981]. (23) Cluj. 62–Hortus Botanicus Clusiensis, Universitas “Babes-Bolyai,” Str. Republicii Nr. 42, 3400 Cluj Napoca, Romania, 1962 [LR 1981]. (24) U. Kiev 63–Hortus Botanicus Fominianus Universitatis Kioviensis, Kiev, Ukraine, USSR, 1963 [LR 1982]. (25) Kiev 63–Hortus Botanicus Centralis Academiae Scientiarum UCR, Via Timirjasevskaja 1, Kiev 14, Ukraine, USSR, 1963 [LR 1979].

(26) Oslo 66–Hortus Botanicus Universitatis Osloensis, Oslo, Norway, 1966 [LR 1983]. (27) Gren. 69–Jardin de l'Institut Botanique Alpin du Lautaret, 9 Place Bir-Hakeim, Grenoble (Isere), France, 1969 [LR 1975]. (28) Stras. 69–Jardin Botanique de Strasbourg, 28 Rue Goethe, Strasbourg, France, 1969 [LR 1982]. (29) Pratap 68–Pratap Nursery & Seed Stores, P.O. Premnagar, Dehra Dun-6 [Uttar Pradesh], India, 1968 [LR 1971]. (30) Tubin. 69–Botanischer Garten der Universitaet Tuebingen, Tuebingen, Germany, 1969 [LR 1980].

(31) Cluj. 70–Hortus Botanicus Clusiensis, Universitas “Babes-Bolyai,” Str. Republicii Nr. 42, 3400 Cluj Napoca, Romania, 1970 [LR 1981]. (32) Lyon 71–Jardin Botanique de la Ville de Lyon au Parch de la Tete-d'Or, Lyon, France, 1971 [LR 1973]. (33) Mainz 74–Botanischer Garten der Johannes Gutenberg Universitaet, 6500 Mainz / Rhein,

Germany, 1974 [LR 1977]. (34) Turc. 76–Hortus Botanicus Turcomanicus, Turkonen Botanical Garden, 744012 Ashkhabad, Turkmen S.S.R. [later Turkmenistan], 1976 [LR 1976]. Address: L.H. Bailey Hortorium, 462 Mann Library, Cornell Univ., Ithaca, New York 14853-4301. Phone: 607-255-7981. Fax: 607-255-7979.

81. Delegación de los Servicios Hidráulicos del Guadalquivir. 1934. Campos de experimentación agrícola. Ensayos con la “Soja.” Laboratorio [Agricultural experimentation fields. Trials with soybeans. And the laboratory]. Sevilla, Spain. 89 p. [Spa]

• **Summary:** This Directorate of Waters, Delegation of the Guadalquivir (*Jefatura de Aguas de la Delegación del Guadalquivir*), has knowledge through lectures and references of trials conducted in different regions with the legume called ‘soy,’ whose products have numerous applications, both agricultural and industrial. I endeavored in late August 1932, while taking charge of the Delegation of Hydrological Services of the Guadalquivir, to see that this plant was tested at the Agricultural Experiment Fields that this organization had established in Córdoba and Granada. The tests began in 1933.

More than 20 years ago in Spain, soybean trials were conducted with good results by the Count of San Bernardo at his farm “El Alamillo,” located in Ecija (Sevilla). In 1910 the soybean was cultivated by the agricultural engineer Mr. Noriega in Jerez (Cádiz) and even though the seeds were not in good condition, the plant showed its excellent resistance to drought. In 1917 the Spanish Consul in Shanghai, China, made three varieties of soya available for testing. Nowadays this plant is examined with care and curiosity, and later [p. 81-82] we shall say that what has been done by us at the experiment field of Córdoba.

In 1933 the varieties Lorca and Laredo were tested, and additional plantings of Laredo were done to test its use as fodder and to gather its beans. In 1934 the soybean trials were repeated, to test for both grain use and hay. Address: Seville, Spain.

82. Guerra, Guilherme. 1934. Relatório da Estação Experimental do Bié: Vila Silva Pôrto 1928 a 1931 [Report from the Experimental Station at Bié, Angola: Vila Silva Pôrto, 1928-1931]. *Boletim da Direccao dos Servicos de Agricultura e Comercio* 4(12-15):53-116. For Jan/Dec. 1931. See p. 71, 74-75. [Por]

• **Summary:** Page 71 contains a list of legumes used for green manure and soil enrichment (*adubacao*) introduced in 1930-31. The soybean (*Soja*; *Soja hispida*) is one of these, introduced from France.

Page 74 states that soybeans, some acquired directly and some furnished by the Direcção de Serviços, were planted on 5 March 1930 in small quantities (about 20 gm). They yielded 80 gm of soybeans, the equivalent of 36 kg/ha. Also



discusses work with soybeans at the New Jersey Agricultural Experiment Station, the work of Kircher with nodulation, and the work of Trabut in Algeria.

Note 1. This is the earliest document seen (Aug. 2009) concerning soybeans in Angola, or the cultivation of soybeans in Angola (or any Portuguese colony). This document contains the second earliest date seen for soybeans in Angola, or the cultivation of soybeans in Angola (1930). The source of these soybeans was France.

Note 2. Abreu Velho and Gossweiler (1938) state: At the experiment station of Policultura Planáltica at Bié, from 1928 to 1931, the soybean was one of the crops tested for use as a green manure. A summary of the results is given by the station's director in this publication. Yet in this 1938 document we can find no mention of soybeans being grown before March 1930. Address: Policultura Planaltica Experiment Station at Bié, Angola.

83. Arana, M. de. 1935. Adquisición de semilla de soya [Obtaining soybean seed]. *Agricultura (Madrid, Spain)* 7:415. [Spa]\*

• **Summary:** The soybean is a relatively new crop for Spain. A correspondent is told where he can obtain certain North American varieties recommended for cultivation in Asurias (northwest Spain).

84. Merrill, E.D. 1935. A commentary on Loureiro's "Flora Cochinchinensis." *Transactions of the American Philosophical Society* 24(Part II):1-445. See p. 208 (*Glycine soja*). [9 ref]

• **Summary:** "Loureiro clearly described the soy bean. *Cadelium* Rumph (Herb. Amb. 5:388. pl. 140) is correctly placed as a synonym. A specimen from Loureiro is preserved in the herbarium of the British Museum. Piper claims that the specific *max* is the oldest valid one for the species whether considered under *Glycine* or *Soja*. However it has only page priority which is not recognized by the International Code of Botanical Nomenclature." Merrill suggests why he uses an artificial device to keep the soybean in the genus *Glycine*, where it has been for the past 150 years. In 1917 Merrill suggested the name *Glycine max* for the soybean.

85. Crespí, Luis. 1935. La soja y su cultivo en España [The soybean and its cultivation in Spain]. Spain. 32 p. Series: Catechisms for Farmers and Cattlemen/Stock-Farmers (*Catechismos del Agricultor y del Ganadero*). 17 cm. [Spa]

• **Summary:** Contents: I: Cultivation of the soybean (*la soja*; p. 3-18): 1. Description of the plant. 2. Origin of the soybean. 3. Varieties of soybeans (*Variedades de sojas*): Early maturing, semi-late, late. 4. Needs of the soybean: In water, in soil, in fertilizer. Fixation of nitrogen from the air in soybeans. 6. Place in the rotation. 7. Preparatory work. 8. Planting: Carrying out the sowing, the necessary seeds, depth of planting. 9. The seeds sprout. 10. Cultural care. 11.

Maturity. 12. Diseases (*enfermedades*). 13. Harvest: As a forage plant, as a producer of seeds. 14. Yield.

II: Applications of the soybean (p. 19-28). 1.

Composition of the plant: Composition of soybean forage, composition of the seeds, composition of the straw (*la paja*).

2. The soybean in the feeding of animals: As a forage plant, as a plant that produces seeds, soybean cakes (*tortas de soja*), soybean straw. 3. The soybean as a human food. 4. Industrial products from the soybean (from the oil: paints and varnishes, soap). 5. The soybean as a fertilizer.

III: Geographic distribution: 1. Worldwide cultivation of the soybean. 2. The soybean in Spain.

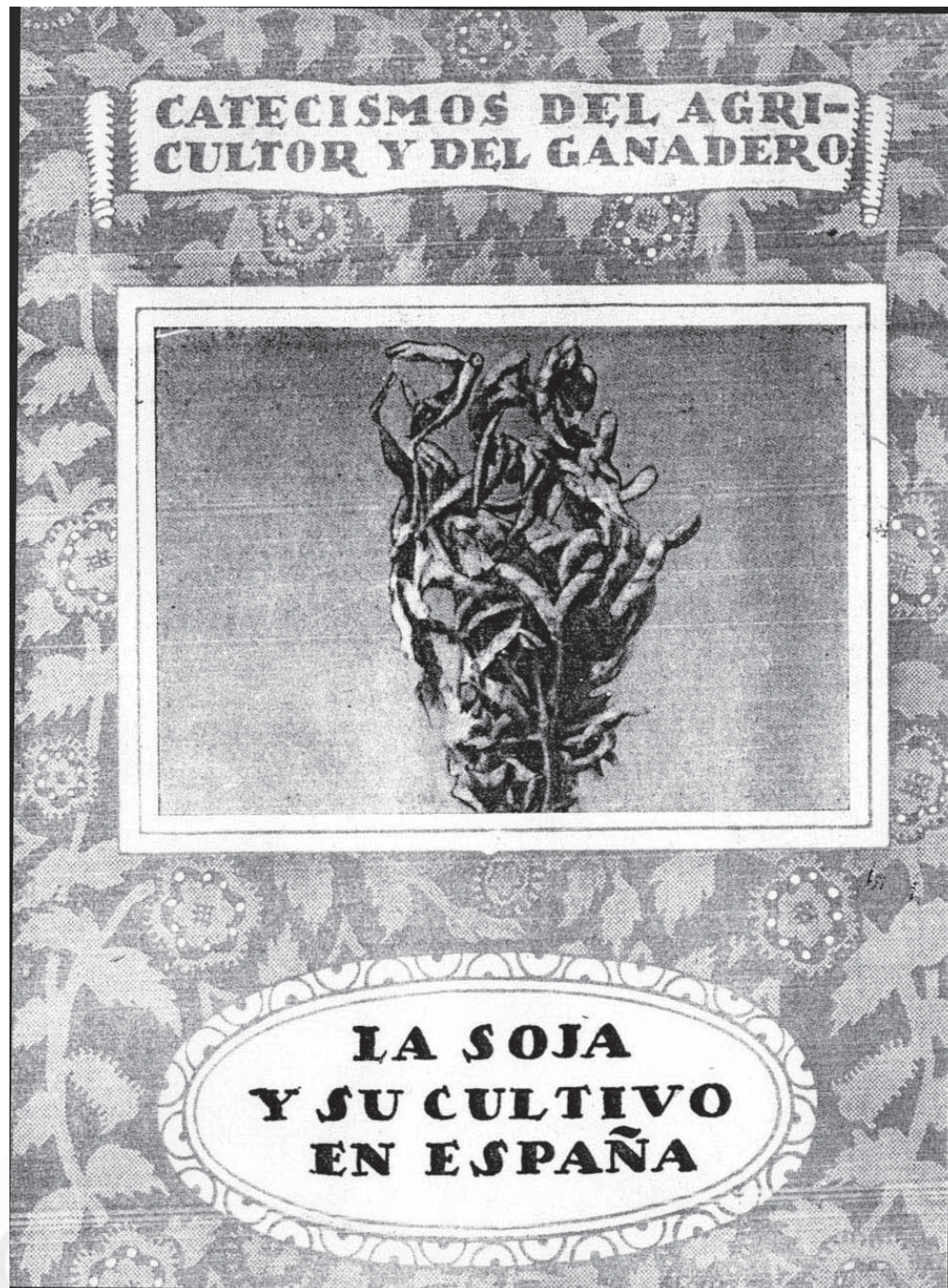
The soybean as a human food (p. 27): The seed is rich in protein. Whole soybeans (*Semillas de soja*) can be used like French beans and peas, mature and dry, and toasted like peanuts. The first two leaves of very small soybean plants (*Plantitas de soja*) can be used in salads or cooked. Soy flour can be used in bread, pastries, biscuits, or diabetic diets. Condiments, widely used in China and Japan, include natto, miso, tou-chiang, and shoyu. One can make soymilk (*leche de soja*), and use it to make soy cheeses (*quesos de soja*). The seeds of certain varieties can be roasted to make substitutes for cocoa or coffee.

Soybean cultivation worldwide (p. 29-30): In France, starting in 1880, the house of Vilmorin, started selling the variety Etampes. Also in 1880, the soybean was cultivated in Portugal in the Botanical Garden at Coimbra (in west central Portugal).

"The soybean in Spain (p. 30): Thirty five years ago [i.e. in 1900] my father tried cultivating soybeans in Pontevedra. [Note: Pontevedra is a province and city in the northeast corner of Spain, just north of Portugal, on the coast of the Atlantic Ocean. The city is near the mouth of the Ría de Pontevedra, at about 42.4° north latitude]. For two consecutive years, and using seeds of the variety Etampes from the House of Vilmorin seedsmen, he obtained identical results: excellent vegetation, but a small yield of seeds because the plants failed to fully mature.

"More than thirty years ago [i.e. before 1905], the count of San Bernardo tried growing the soybean, with excellent results, on his estate "El Alamillo," at Ecija (near Seville, Spain). "In 1910 the soybean was cultivated by Mr. Noriega in Jerez (near Cádiz {Cadiz}, Spain), and the results obtained seem to indicate that the harvest was of medium size due to the poor condition of the seeds; but the plant responded brilliantly, showing healthy growth and resistance to the drought.

"In 1917 the ambassador of Spain stationed in Shanghai forwarded to the Commercial Information Center of the Spanish Secretary of State three varieties of soybean seeds: small black, yellow, and green. These seeds were very probably used in cultural trials, even though we do not know the results that were obtained. In the same year Mr. Juan Abril reported in the periodical *Revista Ibérica* [Iberian





Review] of his successful soybean trials conducted in Tortosa (in Tarragona province [in northeastern Spain]).

“Finally, during the years 1914 and 1915, Mr. Santiago F. Valderrama, the brigadier general from Artillería [Artillería], conducted soybean cultural trials in Montilla (in Córdoba / Cordova province).

“To his cultivation and enthusiastic encouragement of the cultivation of this plant in Spain, we owe the photograph on the cover of this little instruction book. It shows the top of a mature soybean plant grown by him in Montilla. Two more generations of soybean plants were cultivated in the same locality.”

Illustrations (line drawings) show: (1) Leaves of the soybean and the common bean (*judía* = *Phaseolus vulgaris*) (p. 4). (2) Flowers of the soybean and the common bean. (3) A soybean stem, with 3 leaves and 2 pods; an opened soybean pod showing 3 seeds (p. 5). (4) An uprooted soybean plant, showing nodules on the roots, and abundant pods (p. 12). (5) Comparison of two soybean plants, with and without nodules. The one with nodules is larger and has many more and larger pods (p. 13).

Note: This is the earliest document seen (April 2015) concerning soybeans in Portugal, or the cultivation of soybeans in Portugal. This document contains the earliest date seen for soybeans in Portugal, or the cultivation of soybeans in Portugal (1880 at the botanical garden in Coimbra). The source of these soybeans is unknown. Address: Catedrático de Agricultura de Instituto-Escuela, Spain.

86. Bailey, Ethel Zoe. 1936-1980. *Soja hispida*—Foreign sources. Ithaca, New York: L.H. Bailey Hortorium. 2 cards. Unpublished.

• **Summary:** *Soja hispida* is an early scientific name for the soybean given by Konrad Moench in 1794; it was superseded / replaced by the current scientific name *Glycine max* (L.) Merrill in 1917.

These two hand-written index cards are in the Bailey Hortorium's index system of nursery catalogs and/or botanic garden seed lists developed by Ethel Zoe Bailey. In this index system, there are eleven major cards and eight minor cards related to the soybean. On each card are two-part coded entries referring to botanic gardens or nurseries.

Part 1 is the code for the name of the botanic garden, and part 2 is the last two letters of the earliest year in which the plant for that card appeared in this garden's catalog. For example “Gen. 36” refers to the 1936 catalog of the Botanical Garden in Geneva, Switzerland. [LR 1982] means that a list of seeds and plants (whether or not it contained soy) was “Last Received” from that source [Geneva] in 1982. There are 38 listings for *Soja hispida* from foreign sources. As of Nov. 1997 most of the catalogs and seed lists mentioned below are available in the Bailey Hortorium, located in Mann Library, Cornell University, Ithaca, New

York.

(1) Gen. 36—Conservatoire et Jardin Botaniques de la Ville Geneve, Case postale 60, CH. 1292 Chambes / Geneva, Switzerland, 1936 [LR 1981]. (2) Alger 36—Jardin Botanique, Université d'Alger, Algiers, Algeria, 1936 [LR 1956]. (3) Stain. 37—Jul. Stainer, Wiener-Neustadt, Austria, 1937 [LR 1967]. (4) Wien 1937—Botanischer Garten der Universität Wien, Rennweg 14, Wien III, Austria, 1937 [LR 1976]. (5) Co. 39—Hortus Botanicus Conimbricensis, Coimbra, Portugal, 1939 [LR 1982].

(6) Tez. 48—Tezier Freres, Valence sur Rhone, France, 1948 [LR 1948]. (7) Zem. 48—Federal Institute for Plant Breeding and Plant Introduction, Zemun, Yugoslavia, 1948 [LR 1948; called Semlin in German; as of 1997 located in the Vojvodina autonomous region of Serbia in northern Yugoslavia]. (8) Ans. 54—Arturo Ansaloni, Bologna, Italy, 1954 [LR 1963]. (9) Wars. 54—Hortus Botanicus Universitatis Varsaviensis, Warsaw, Poland, 1954 [LR 1981]. (10) Rabat 56—Institut National de la Recherche Agronomique, B.P. 415, Rabat, Morocco, 1956 [LR 1971; Formerly: 99 Avenue de Temara].

(11) Dijon 57—Hortus Botanicus Divionensis, Jardin Botanique, 1 Avenue Albert-Premier, 21000 Dijon, France, 1957 [LR 1981]. (12) Fi. 57—Hortus Botanicus Florentinus, Via Lamarmora n. 4, Firenze [Florence], Italy, 1957 [LR 1981]. (13) Pavia 57—Hortus Botanicus Universitatis Papiensis (Ticinensis), Botanical Institute and Garden of the University, P.O. Box 165, Pavia, Italy, 1957 [LR 1974]. (14) Lyon 57—Jardin Botanique de la Ville de Lyon au Parc de la Tête-d'Or, Lyon, France, 1957 [LR 1973]. (15) Roma 58—Istituto e Orto Botanico, Università di Roma, Rome, Italy, 1958 [LR 1977].

(16) Liege 58—Jardin & Institut de Botanique de l'Université de Liege, 3 Rue Fusch, Liege, Belgium, 1958 [LR 1975]. (17) Monpl. 59—Jardin des Plantes, Université de Montpellier, Faubourg St. Jaumes, Montpellier, France, 1959 [LR 1978]. (18) Poznan 58—Hortus Botanicus Universitatis Posnaniensis, Dąbrowskiego 165, Poznan, Poland, 1958 [LR 1961]. (19) Caen. 59—Jardin Botanique de la Ville et de l'Université, 5 Place Blot, Caen (Calvados), France, 1959 [LR 1979]. (20) Kiev 61—Hortus Botanicus Centralis Academiae Scientiarum UCR, Via Timirjasevskaja 1, Kiev 14, Ukraine, USSR, 1961 [LR 1979].

(21) Rouen 63—Jardin Botanique de la Ville de Rouen, 7 Rue de Trianon, Rouen, France, 1963 [LR 1981]. (22) Komen. 62—Botanická Zahrada Univerzity Komenského, Bratislava, Czechoslovakia, 1962 [LR 1965; Bratislava has been the capital of Slovakia since 1992]. (23) Ferr. 62—Hortus Botanicus Ferrariensis, Istituto ed Orto Botanico dell'Università di Ferrara, Ferrara, Italy, 1962 [LR 1976]. (24) Nijm. 62—Hortus Botanicus Universitatis Noviomagensis, University of Nijmegen, Driehuizerweg 200, Nijmegen, Netherlands, 1962 [LR 1981]. (25) Ans. 63—See (8) Ans. 54 (Arturo Ansaloni, Bologna, Italy).



(26) Koln 64—Botanischer Garten und Arboretum der Stadt Koeln [Cologne], Ave. Botanischen Garten, 5000 Koeln 60, Germany, 1964 [LR 1981; Formerly at Amsterdammer Strasse 36]. (27) Saig 64—Hortus Botanicus Saigonensis, Saigon, Vietnam, 1964 [LR 1964]. (28) Kassel 64—Botanischer Garten der Stadt Kassel, Bosestrasse 15 (Park Schonfelf), Kassel, Germany, 1964 [LR 1965]. (29) Mort. 66—La Mortola (Giardino Botanico Hanbury), Ventimiglia 18036, Italy, 1966 [LR 1975]. (30) Padova 66—Istituto Botanico dell'Università, Via Orto Botanico 15, Padova [Padua], Italy, 1966 [LR 1980].

(31) Koln 67—See (26) Koln 64 (Koeln, Germany). (32) Nancy 63—Jardin Botanique de la Ville de Nancy, 100 Rue du Jardin Botanique, 54600 Villers-les-Nancy, Nancy, France, 1963 [LR 1981]. (33) St. A. 71—University Botanic Gardens, St. Andrews, Scotland, UK, 1971 [LR 1982]. (34) Howell 73—Major V.F. Howell, Fire Thorn, 6 Oxshott Way, Cobham, Surrey, England, UK, 1973 [LR 1983]. (35) Bord. 74—Hortus Botanicus Burdigalensis, Jardin Botanique de la Ville de Bordeaux, 33000 Bordeaux, France, 1974 [LR 1974].

(36) Graz 75—Botanischer Garten der Universitaet Graz, Holtei-Gasse 6, A-8010 Graz, Austria, 1975 [LR 1982]. (37) Nantes 77—Service des Plantations de la Ville de Nantes, Nantes, France, 1977 [LR 1977]. (38) M.F. 79—Hortus Botanicus Massiliensis, 48 Avenue Clot-Bey, Marseilles, France, 1979 [LR 1981]. (39) Urb. 80—Hortus Botanicus Universitatis Urbinatis, Via Bramante 28, Urbino, Italy, 1980 [LR 1981]. (40) Kosice 80—Botanicka zahrada University P.J. Safarika, Kosice, Slovakia, 1980 [LR 1981].

Eight cards, all listing only foreign (European) sources, contain the supposedly scientific names (listed here alphabetically) of the following subspecies or varieties of *Soja hispida*; none of these names, however, appear in the SoyaScan database (May 1997).

(1) *Soja hispida alba* (1 source; Fi. 57—Hortus Botanicus Florentinus, Via Lamarmora n. 4, Firenze [Florence], Italy, 1957). (2) *Soja hispida brunnea* (1 source; Tubin. 64—Botanischer Garten der Universitaet Tübingen, Tübingen, Germany 1964).

(3) *Soja hispida Dickmana* (1 source; Ferr. 60—Hortus Botanicus Ferrariensis, Istituto ed Orto Botanico dell'Università di Ferrara, Ferrara, Italy, 1960). (4) *Soja hispida japonica* (2 sources; (1) Deb. 39—Horto Botanico Universitatis Debreceniensis, Debrecen, Hungary, 1939; (2) Kosice 80—Botanicka zahrada University P.J. Safarika, Kosice, Slovakia, 1980).

(5) *Soja hispida lutea* (3 sources; (1) Heid. 36—Botanischer Garten der Universitaet, D-6900 Heidelberg, Germany, 1936; (2) Ferr. 61—Ferrara, Italy, 1961 (See above); (3) Tubin. 64—Tübingen, Germany, 1964 (See above)). (6) *Soja hispida nigra* (4 sources; (1) Heid. 36—Heidelberg, Germany, 1936 (See above); (2) Fi. 57—Firenze [Florence], Italy, 1957 (See above); (3) Ferr. 58—Ferrara, Italy, 1958 (See above); (4) Tubin. 64—Tübingen, Germany, 1964 (See

above)).

(7) *Soja hispida ochroleuca* (1 source; Deb. 39—Debrecen, Hungary, 1939 (See above)). (8) *Soja hispida vilnensis* (2 sources; (1) Wars. 58—Hortus Botanicus Universitatis Varsaviensis, Warsaw, Poland, 1958; (2) Ferr. 60—Ferrara, Italy, 1960 (See above)). Address: L.H. Bailey Hortorium, 462 Mann Library, Cornell Univ., Ithaca, New York 14853-4301. Phone: 607-255-7981. Fax: 607-255-7979.

87. Institut International d'Agriculture (International Institute of Agriculture). 1936. Le soja dans le monde [The soybean in various countries of the world]. [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. Cultivation of soy (*soja*; p. 4): 1. Botanical description, selection, classification of the varieties. 2. Cultivation properly said. 3. Enemies and illnesses.

4. Cultivation 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* or *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 cultivation 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 cultivation 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 cultivation is not known to be practiced in the following countries or colonies: Antigua, Barbados, British Honduras (renamed Belize in about 1975), Trinidad and Tobago.

Note 5. The name "Georges Ray" is mentioned in this book on an unnumbered page. Address: Rome, Italy.

88. Descartes de Garcia Paula, Ruben. 1937. A soja como materia prima para industria [The soybean as a raw material for industry]. Rio de Janeiro, Brazil: Instituto Nacional de Tecnologia (Ministerio do Trabalho, Industria e Commercio). 21 p. 24 cm. [4 ref. Por; fre]

• **Summary:** Contents: Introduction. Names of the soybean in different languages. Table showing production of soybeans in leading countries: Manchuria, China, Japan and Korea, United States, Russia, Netherlands Indies. Chemical composition of soybeans in China and Japan, Russia, Hungary, England, and USA (tables {p. 9-11} showing chemical composition, based on research in USA and Brazil); for each variety is given the percentage composition of water, oil, protein (*proteinas*), carbohydrates, cellulose, and ash. Analyses of 7 soybean varieties (made in the USA by USDA): Austin, Ito San, Kingston, Mammoth, Guelph, Medium Yellow, Samarow. Analysis of 11 varieties grown in Sao Paulo, Brazil: Peking, Wilson Five, Minsoy, Dunfield, Mandarin, Haberlandt, Virginia, Habaro, Dixie, Mammoth Yellow. Analysis of 6 varieties grown in Parana (Aksarben, Edano, Hermann, Mammoth Yellow, Mammoth Brown).

Brief studies of the chief soybean products: oil (*oleo*), cake (*torta*), flour (*farinha de soja*), lecithin (*lecithina*), and casein (*caseina de soja*). List of potential industrial products. List of food products. French summary.

Highlights the importance of the soybean in the general economy and especially as a raw material for industry. The possibilities of the crop for Brazil are considered.

Note 1. This is the earliest Portuguese-language document seen (Sept. 2006) that mentions soy oil, which it calls *oleo*.

Note 2. This is the earliest Portuguese-language document seen (Aug. 2003) that uses the term *caseina de soja* or *proteinas* to refer to protein in connection with soybeans. Address: Rio de Janeiro, Brazil.

89. Rodrigo, P.A. 1938. Acclimatization of soybean in the Philippines. I. *Philippine J. of Agriculture* 9(3):223-52. July/Sept. Plus 6 plates on unnumbered pages at end. [13 ref]

• **Summary:** "Work on the acclimatization of the soybean, *Glycine max* M., was started by the then Bureau of Agriculture (now Bureau of Plant Industry) in 1911, and as early as 1915 by the College of Agriculture in Los Baños. From 1911 to 1932, about 100 varieties from various countries have been introduced and tested by the former institution. The present work, however, the results of which are being presented in this paper, was begun in May, 1935, and is still in progress."

When the Bureau of Plant Industry first launched its drive on crop diversification in about 1931, the soybean was chosen as one of the crops to study, in part because the Philippines imports over 500,000 pesos worth of soybeans and soy products each year. "The successful production of soybean in the Philippines would not only prove agriculturally beneficial, it would also bring a decided improvement in the diet of our people, the soybean being considered one of the 'most complete and natural foods known to the human race.'"

"The soybean is not really a new crop in the Philippines, although it is practically unknown to the farming public. Some even advance the theory that it is indigenous to the Philippines, but the more common belief is that it must have been introduced here during the early Spanish times, perhaps, by Chinese immigrants. This belief is strengthened by the lack of any wild species or form of soybean in the Islands and by the existence of only a single naturalized variety, the Ami, which is claimed to have been grown in the province of Batangas from time immemorial..."

"The data presented in this article include results obtained from cultures started in May, 1933 to June, 1937. All the tests were conducted in plot cultures at the Central Experiment Station, Malate, Manila."

The plates show different soybean varieties growing in the Philippines. The first five show soybean plants; the last shows soybean seeds, with their relative sizes and shapes.

The names of the varieties that produced these seeds are: American Black, Ami, Cayuga, Chinese, Dunfield, Furisode, Hakubi, Head Green, Illini, Kachin, Kingwa, Macoupin, Manchou, Manchuria, Manchuria Type 13-177, Mandarin, Mandell, Mamloxi, Mamredo, Midwest, Mis 2 Behrum, Miss 28 E.B. Str. 3910, Miss 33 Dixi, Nanking, Nanksoy, Otama-ao, Otama-ao Str. 2, Otama-ao Str. 3, Penagype, Scioto, Seaweed, Type 117, Type 65379, Yellow Biloxi Hybrid, Yellow Biloxi Small.

A French-language translation appeared in *Revue Internationale du Soja* 1(1):35-37 (1941). Address: Horticulture Section, Bureau of Plant Industry, Manila.

90. Abreu Velho, H. de L.; Gossweiler, John. 1938. A soja [The soybean]. Luanda, Angola: Imprensa Nacional. 48 p. (Conselho de defesa da producao e do comercio). [8 ref. Por]

• **Summary:** Cover title: Soja; o que os agricultores devem saber sobre a sua cultura (Soya: What farmers must know about its culture). In the section titled "Possibilities for soybean culture in Angola," it is noted: "Although on a relatively small scale, some soybean trials have been conducted in Angola. At the Experimental Station of Algodao, in Catete, some soybean trials were conducted in 1929 and 1930 with a yellow variety, with the intent of studying the crop for use in rotation with cotton and with maize (corn). The sowing went well and the germination was rapid and uniform, but none of the plants grew to a height of more than 30 cm (1 foot)."

At the experiment station of *Policultura Planáltica at Bié*, from 1928 to 1931, the soybean was one of the crops tested for use as a green manure. A summary of the results was given by the station's director in the *Boletim da Direcção dos Serviços de Agricultura e Comércio*, volume 4, numbers 12-15, 1931. A long extract from that Bulletin concerning the soybean is given, focusing on the year 1930.

Soybean trials have also been conducted at the Station for the Reproduction and Improvement of Seeds and Plants (*Estação de Reprodução e Melhoramento de Sementes e Plantas*) at Planalto de Malanje, since the beginning of 1935.

This publication also contains a long section on food uses of the soybean, including soy flour (*farinha de soja*), soy milk (*leite de soja*), tofu (*queijo de soja*; *queijo duro*), soy sauce (*Shoju*, *Soyu*, *Shoyu*, *tao yu*), and soy oil (*óleo de soja*). In Austria and America, and also in the Orient, soybean seeds are roasted, ground, and used as a substitute for coffee (*substituto de café*).

Note 1. This document contains the earliest date seen for soybeans in Angola, or the cultivation of soybeans in Angola (1928). One source of these soybeans was France.

Note 2. This is the earliest Portuguese-language document seen (Nov. 2012) that refers to soy coffee, which it calls *substituto de café* (a substitute for coffee).

Note 3. This is the earliest Portuguese-language document seen (Aug. 2013) that mentions soymilk, which



it calls *leite de soja*. As of Aug. 2013 *leite de soja* is the modern Portuguese term for soymilk.

Note 4. This is the earliest Portuguese-language document seen (April 2013) that uses the word *queijo de soja* or the word *queijo duro* refer to tofu.

Note 5. This is the earliest Portuguese-language document seen (Sept. 2006) that mentions soy oil, which it calls *óleo de soja*.

Note 6. This is the earliest Portuguese-language document seen (April 2012) that uses the word *Shoju* or the word *Soyu* or the word *Shoyu* or the term *tao yu* to refer to soy sauce. Address: Angola.

91. Blanco Juste, Francisco J. 1938. *La Soja: Vulgarización científica* [The soybean; Scientific popularization]. Madrid, Spain: Talleres Graficos Marsiega. 32 p. 18 cm. [Spa]\* Address: Spain.

92. Navarre Direccion de Agricultura y Ganaderia. 1938. *Lino, soja y lúpulo: Cultivos del porvenir* [Flax/linseed, soya and hops: Crops of the future]. Pamplona, Aramburu, Spain: Aditorial Aramburu. 28 p. Rev. ed. 1945. See p. 15-22. [Spa]\*

• **Summary:** Navarre is a province in Spain. Address: Navarre, Spain.

93. Hennefrund, Helen E. comp. 1939. *The peanut industry: A selected list of references on the economic aspects of the industry, 1920-1939. USDA Bureau of Agricultural Economics, Agricultural Economics Bibliography* No. 80. viii + 238 p. Nov. 28 cm. [641 ref]

• **Summary:** This bibliography was compiled under the direction of Mary G. Lacy, librarian at the Bureau of Agricultural Economics. Contents: Foreword, by Mary Lacy. Sources consulted. General. United States: General, Agricultural Adjustment Program, cost of production and labor requirements, grading and standardization, legislation, markets and marketing, mechanization, periodicals, Philippine Islands, statistics, storage, utilization (general, feed and its nutritive value, peanut butter, peanut oil).

Foreign countries: General, Algeria, Argentina, Australia, Belgium and Belgian Congo, Brazil, British Empire, British East Africa, British West Africa, Bulgaria, Canada, Ceylon, China, Colombia, Cuba, Denmark, Egypt, France, French West Africa (incl. Senegal, French Guinea), Germany, India, Indo-China, Italy, Japan and Manchuria, Malaya, Mexico, Morocco, Netherlands and Dutch East Indies, Palestine, Poland, Portugal and Colonies, Rhodesia, South Africa, Spain, Sudan, Sweden, Thailand (Siam), Tunis [Tunisia], Turkey, Union of Soviet Socialist Republics, Uruguay, West Indies (British), Yugoslavia.

Pages 1-145 contain 641 bibliographic references (partially annotated), arranged by subject as shown above. Pages 146-238 are indexes.

The Foreword notes: "This bibliography supersedes and brings up to date a typewritten list by Vajen E. Hitz issued in 1931 entitled 'The peanut industry: Selected references on the economic aspects of the industry... 1920 to date.' It contains references to books, pamphlets, and periodical articles relating to the economic aspects of the peanut industry in the United States and in foreign countries from 1920 through the first five months of 1939... Call numbers following the citations are those of the U.S. Department of Agriculture Library, unless otherwise noted. 'Libr. Congr.' preceding a call number indicates that the publication is in the Library of Congress." Address: USDA Bureau of Agricultural Economics.

94. Morse, W.J.; Cartter, J.L. 1939. *Soybeans: Culture and varieties. Farmers' Bulletin (USDA) No. 1520* (Revised ed.). 39 p. Nov. Revision of April 1927 edition, further revised in 1949.

• **Summary:** Contents: History. Description. Distribution and production. Climatic adaptations. Soil preferences, Varieties (classified by length of growing season into 7 groups, and divided within each group into "Seed, forage, green vegetable, and dry edible" types). Description of varieties (describes 125 varieties). Preparation of the seedbed. Fertilizers and lime. Inoculation. Time of seeding. Methods of seeding. Rate of seeding. Depth of seeding. Cultivation. Soybeans in rotations. Soybeans in mixtures. Soybeans drilled in small grains. Cost of production. Insect enemies of soybeans. Soybean diseases. Other enemies of soybeans.

"History: Ancient Chinese literature reveals that the soybean was extensively cultivated and highly valued as a food centuries before written records were kept. The first record of the plant is contained in a materia medica describing the plants of China, written by Emperor Sheng Nung in 2838 B.C. Methods of culture, varieties for different purposes, and numerous uses are repeatedly mentioned in later records, indicating the soybean to be of very ancient cultivation and perhaps one of the oldest crops grown by man. It was considered the most important cultivated legume and one of the five sacred grains essential to the existence of Chinese civilization. Soybean seed was sown yearly with great ceremony by the emperors of China, and poets through the ages have extolled the virtues of the plant in its services to humanity.

"The soybean was first made known to Europeans by Engelbert Kaempfer, a German botanist, who spent 2 years, 1691-92, in Japan. Seed sent by Chinese missionaries was planted as early as 1740 in botanic gardens in France..."

"Distribution and production: The soybean is grown to a greater extent in Manchuria than in any other country in the world. It occupies about 25 percent of the total cultivated area and is relied upon by the Manchurian farmer as a cash crop. China, Japan, and Chosen [Korea] are large producers and the soybean is cultivated more or less also

in the Philippines, Siam, Cochin China, Netherland India [later Indonesia], and India. In other parts of the world, particularly Germany, England, Soviet Union, France, Italy, Czechoslovakia, Rumania, Mexico, Argentina, Cuba, Canada, New South Wales, New Zealand, Algeria, Egypt, British East Africa, South Africa, and Spain, various degrees of success have been obtained.”

The section on diseases discusses the following: Purple spot of seeds, bacterial blight, bacterial pustule, mosaic, wilt, brown spot, sunburn or aphid injury, downy mildew, pod and stem blight, anthracnose, sclerotial stem rot, frog-eye spots, and *Pythium* root rot.

A table (p. 6-7) shows different varieties of soybeans recommended for four different uses (seed, forage, green vegetable, or dry edible), classified by the length of the growing season. Green vegetable—Very early (100 days or less): Agate, Sioux. Early (101 to 110 days): Bansei, Chusei, Goku, Kanro, Waseda. Medium early (111 to 120 days): Fuji, Hakote, Hiro, Hokkaido, Jogun, Kura, Osaya, Sato, Shiro, Sousei, Suru, Toku, Willomi. Medium (121 to 130 days): Chame, Funk Delicious, Imperial. Medium late (131 to 140 days): Aoda, Hahto, Higan, Rokusun. Late (141 to 160 days): Nanda.

Dry edible—Early (101 to 110 days): Bansei, Chusei, Goku, Kanro, Waseda. Medium early (111 to 120 days): Hokkaido, Jogun, Osaya, Sousei, Suru, Toku, Willomi. Medium (121 to 130 days): Funk Delicious, Imperial. Medium late (131 to 140 days): Easycook\*, Haberlandt\*, Higan, Rokusun, Tokyo\*. Late (141 to 160 days): Nanda. Note: All dry edible varieties except three (Easycook, Haberlandt, and Tokyo—which are followed by an asterisk (\*)) are also included in the green vegetable group. But many in the green vegetable group are not included in the dry edible group.

Detailed descriptions of the following 125 varieties are given (p. 7-17): Agate, A.K., Aksarben, Aoda, Arksoy, Avoyelles, Bansei, Barchet, Biloxi, Black Beauty (same as Ebony), Black Eyebrow, Cayuga, Chame, Charlee, Chernie, Chestnut, Chiquita, Chusei, Clemson, Columbia, Creole, Delnoshat, Delsta, Dixie, Dunfield, Early Green (same as Medium Green), Early Virginia Brown (same as Virginia), Early Wilson (same as Wilson), Early Wisconsin Black (same as Wisconsin Black), Early Yellow (same as Ito San), Easycook, Ebony, Elton, Fuji, Funk Delicious, George Washington, Georgian, Goku, Guelph (same as Medium Green), Habaro, Haberlandt, Hahto, Hakote, Harbinsoy, Hayseed, Herman, Higan, Hiro, Hokkaido, Hollybrook, Hongkong, Hoosier, Hurrelbrink, Illini, Ito San, Jogun, Kanro, Kingwa, Kura, Laredo, Large Brown (same as Mammoth Brown), Large Yellow (same as Mammoth Yellow), Late Yellow (same as Mammoth Yellow), Lexington, Macoupin, Mamloxi, Mammoth Brown, Mammoth Yellow, Mamredo, Manchu, Mandarin,

Mandell, Mansoy, Medium Early Green (same as Medium Green), Medium Early Yellow (same as Ito San), Medium Green, Medium Yellow (same as Midwest), Midwest, Minsoy, Missoy, Monetta, Morse, Mukden, Nanda, Nanking, Norredo, Northern Hollybrook (same as Midwest), Ogemaw, Old Dominion, Oloxi (formerly Coker’s Black Beauty), Osaya, Ootootan, Ozark, Palmetto, Pee Dee (Coker’s 31-15), Peking, Pine Dell Perfection, Pinpu, Richland, Rokusun, Sato, Scioto, Shiro, Sioux, Sooty, Sousei, Southern Green, Southern Prolific, Soysota, Suru, Tarheel Black, Toku, Tokyo, Virginia (selection {19186-D} from the Morse variety at Arlington Experiment Farm in 1907), Waseda, Wea, White Biloxi, Willomi, Wilson, Wilson-Five, Wisconsin Black, Woods’ Yellow, Yelredo (a nonshattering selection, Coker’s 319), Yokoten. Address: 1. Senior Agronomist; 2. Assoc. Agronomist, Div. of Forage Crops and Diseases; Both: USDA Bureau of Plant Industry, Washington, DC.

95. Floyd, Dolores Boisfeuillet. 1939? Stolen secrets of old Chinese soybean culture. Savannah, Georgia. 15 p. Undated. Unpublished manuscript.

• **Summary:** “Stolen secrets of old Chinese soybean culture and sago manufacture, which were brought to Colonial America, was a romantic episode of interest at the present day because of the co-incidence of the immense interest which soy and sago now occupy in the United States wealth, and the world events which are transpiring in that part of China from whence those commodities were introduced.

“An adventurous young Englishman, Samuel Bowen, in the employ of the British East India Company, brought the secreted knowledge of soy and sago out of old China to Savannah, Georgia, about 1764; and before the American Revolution the products of his experiments had entered the realms of American exports in regular listing through the Custom Office at the port of Savannah.

His knowledge of the secrets of soy and sago were obtained during the four years he was a prisoner of the emperor of China and his travels into 2,000 miles of the interior of that mysterious country. It was a period brimful of romance, and exciting pursuit after wealth; and the East India Company to which Bowen belonged was the most amazingly powerful trading concern that the world then had ever seen. That gigantic corporation of immense political power offered opportunity to the call of adventure that summoned young men to the Orient, with the object of acquiring wealth in the trade with the strange people of the magnetic East.

“The East India Company’s headquarters in China, where young Bowen was located in the 1750’s, was at Macao [Macau] on the coast of China at the mouth of the Canton River, near Hongkong and Canton—an area of China which today figures in the theater of the war of Japanese aggression to drive the whites out of Asia and seize control of that Oriental commerce which had grown through Macao, the oldest European outpost in the China trade.

“Oriental restrictions on the European trade with China in Bowen’s day, confined all such activity to the peninsula of Macao with only an annual seasonal appearance at the city of Canton. On a hillside of that peninsula overlooking a fine bay was the picturesque city of Macao with its multitudinous buildings quaintly combining Oriental and European features. Dominating the scene were the spreading buildings of the ‘factory’ of the East India Company, providing living quarters for its employees, counting offices for its finance, and storage for its wealth of goods. The bay itself was an integral part of the Macao scene with its array of Chinese junks in all manner of size and pattern, and the contrasting European East Indiamen, the spectacular great sailing ships used in the carrying trade between the Orient and Europe, and in which young Bowen voyaged between England and China.

“In the dull season at Macao between times of the restricted trading to Canton, employees of the East India Company indulged in all manner of dissipation [sic, dissipation] afforded by an 18th century far eastern seaport. But outstanding among those Europeans who kept their wits in that atmosphere were Samuel Bowen and another employee of the East India Company, James Flint, whose adventures together lasted even to their appearance at Savannah, the capital of the province of Georgia, in Colonial America. At Macao, however, in the dull season of the year 1759, Bowen and Flint, chaffing [sic, chafing] at in-action of commerce, and cursing the stupidity of Chinese obstruction, engaged themselves in an adventure contrary to restrictions imposed upon Europeans, and immediately ran afoul of Chinese law.

“The nature of Bowen’s adventure at Macao which brought him into trouble with Chinese officials is not disclosed in available records other than that he entered upon some form of risk to obtain information about matters Chinese. Therefore it remains a question whether it was some escapade, just for the fun of it, prompted by the monotony of idleness, or some serious movement to obtain matters about matters Chinese. In the light of subsequent knowledge of his inquisitive and practical character, it would seem that the latter supposition was the likely motive of that adventure which had as its outcome the discovery of the Chinese secret method of soybean culture and uses and manufacture of sago which, today, have made the United [States] a rival to China in those commercial products.

“Bowen’s offense seems to have been of serious import as deduced from official British documentary statement that it was “by order of the Emperor” that he was made prisoner. K’ien-lung [Ch’ien-lung] of the Manchu dynasty was emperor at that time, and was the ruler of China 1735-1795; and it was during his reign that commerce between Europe and Canton—the only Chinese port open to foreign trade—reached proportions, with the British holding a monopoly of the East India Company. That trade was

mostly in opium, tea, and silk, but was subject to many exactions and restrictions by K’ien-lung, and consequently Englishmen were often subjected to acts of gross injustice. Finally matters became so bad, that in 1793, the British sent an embassy to Peking to treat with that emperor, but no concessions were obtained. [Encyclopaedia Brit., 11th ed. article “China.”] Hence it may be seen that Bowen’s arrest had significant importance for him to have come to the direct notice of K’ien-lung.

“Bowen’s confinement in China as a prisoner lasted nearly four years, during which time, according to his own statements, he was ‘carried two thousand miles from place to place, through the interior parts thereof.’ [Georgia Gazette, Sept. 17, 1776, p. 2, cols. 1-2.] From Macao near Canton where Bowen was located, a distance of 2,000 miles into the interior of China would range as far westward as into the Himalayas and Tibet, Mongolia and the Gobi, and northerly beyond K’ien-lung’s capital, Peking, into Manchuria. Documents in ‘The Case of Samuel Bowen’ stated that the length of time and distance of his travel during his imprisonment in China ‘gave him both leisure and opportunity to consider the improvements and manner of living, of that wise and industrious People.’” Continued. Address: Savannah, Georgia.

96. Floyd, Dolores Boisfeuillet. 1939? Stolen secrets of old Chinese soybean culture (Continued—Document part II). Savannah, Georgia. 15 p. Undated. Unpublished manuscript.

• **Summary:** “Through that world of wonders, Bowen, an impressionable youth like Marco Polo, found himself an observing traveller through the mysterious kingdom of China. A further similarity between those two was that both had come to the personal attention of the Chinese emperors of their respective times, and both had traversed areas that had been veiled from European eyes, and they gave to the outside world the benefits of their knowledge of useful facts. It was four centuries before Bowen that Marco Polo travelled through the kingdom of Kublai Khan, emperor of China, who completed the last 600 miles of the Grand Canal which runs from Canton to Peking—the longest waterway constructed by man.’ That canal and Great Wall of China, also an outstanding engineering marvel, had already been completed when Marco Polo arrived [Manuel Komroff: ‘The Travels of Marco Polo.’ N.Y., Boni & Liveright, 1926. pp. xvi, xvii]; and, considering the distance of Bowen’s travels, it is not improbable that he, too, observed those marvels.

“Certainly Bowen must have been acquainted with the Grand Canal, because of the trade at certain periods allowed with Macao [Macau] and Canton—Canton, Marco Polo’s city of ‘Kan-gin’ [Thomas Wright, ed.: ‘The travels of Marco Polo, the Venetian. The translation of Marsden. Revised with a selection of his notes.’ London, George Bell & Sons, 1907, p. 343.] and which in Bowen’s time continued its characteristics as described by Marco Polo thus: ‘Through



the midst of it passes a river, a mile in breadth upon the banks of which, on either side, are extensive and handsome buildings. In front of these great numbers of ships are seen lying, having merchandise on board... Many vessels arrive at this port from India... The ships coming from India ascend the river as high up as the city, which abounds with every sort of provision, and has delightful gardens, producing exquisite fruits.' [Thomas Wright ed. *The travels of Marco Polo...* p. 343.]

"It would seem that from Canton Bowen was taken into the interior of China, because Canton is the outlet of the Basin of the Sikiang River which is the focus of the life of South China, and where other waterways join which make from there the easiest route to the Yangtze [Yangtze River, later Chang], etc., and one of the two great routes linking south with central and north China. [Encyclopaedia Britannica, 14th ed. article "Canton."]

"The life of the Chinese that he saw was junks and sampans busily plying the rivers transporting goods; burdens carried on men's backs; buckets and bundles balanced on carrying poles slung over men's shoulders; and humans transported on horseback, in sedan chairs carried by men, or in curtained, gaily painted, two wheeled horse drawn carts. China was in a thriving condition under the 'brilliant' reign of K'ien-lung [Ch'ien-lung, 1736-1795]; and the last of the great age of porcelain was at its height [Will Durant: 'The story of civilization. Our Oriental heritage.' p. 758]; but after all the luxuries of Chinese life, however, rested in the fertility of its soil, and the traditional skill of the Chinese raised their agriculture to the level of an art. Thus Bowen was an eye witness to the arts of old China, and by ingenious observation obtained some of the secrets of the Chinese.

"Bowen's training in the merchant service naturally made him observant with an eye and ear for risks and profits. Thus it was typical that he did not concern himself with the esthetic arts of old China, but with the matter of fact items closes to human needs; and in that respect he was an outstanding example of the admonition carved on the U.S. Post Office in Washington, D.C.: 'He who takes the wealth of the Indies with him brings back the wealth of the Indies.' [Get exact quotation.] To all these things, Bowen gave 'serious attention, and with a constant view of rendering his observations some time or other useful to his native country; the hopes of which was the greatest comfort he had under his misfortune [The case of Samuel Bowen]; and he particularly took notice of a kind of powder prepared for the use of travellers, both by land and sea, and 'which the Mandarins never travel without.' [Georgia Gazette, Sept. 17, 1776, p. 2, cols. 1-2.]

How Bowen secured the favor of K'ien-lung to release him is not known. Nevertheless, when he was released, he dared to secret off with him a few soy beans.

Note 1. This unpublished manuscript is in the collected papers of Marmaduke H. Floyd and Dolores B. Floyd, which

is collection No. 1308 at the Georgia Historical Society, Savannah, Georgia. This manuscript is in Box 48, folder #647 titled "Bowen and Flint." Dolores B. Floyd died in 1966. This undated manuscript may have been written during the 1940s, or perhaps as early as the late 1930s. Dolores B. Floyd died in 1966. This undated manuscript may have been written during the 1940s, or perhaps as early as the late 1930s. Mrs. Floyd was apparently the first person to discover that Samuel Bowen introduced the soybean to Georgia and North America in the 1760s. She gives the date of introduction as "about 1764." Unfortunately, she never published her findings. She also never mentions Henry Yonge, who first grew Bowen's soybeans in Georgia in 1765.

Note 2. This story was uncovered independently, and in more detail, by Prof. Theodore Hymowitz and Prof. J.R. Harlan and published in Dec. 1983 them as "Introduction of soybean to North America by Samuel Bowen in 1765" in *Economic Botany* 37(4):371-79. Address: Savannah, Georgia.

97. Soroa, José Maria de. 1941. *La soja. Su cultivo y aplicaciones*. Segunda edicion, corregida y aumentada [The soybean. Its cultivation and utilization. 2nd ed.]. Madrid, Spain: Ministerio de Agricultura. Seccion de Publicaciones, Prensa y Propaganda. 87 p. Undated. No index. 16 cm. First ed. was by Abadal and Soroa, 1932. [Spa]

• **Summary:** Contents: The soybean. Recent history. Some antecedents to the present trials conducted in Spain. Agronomic notes (incl. soybean varieties). Preparation of the soil. Utilization of soybeans. Food uses. Other applications of the seed. Industrial uses. Soybean oil. Use of the soybean plant as feed. Forage. Use of soybean in clinical analysis (urease). Appendix: Soybean production worldwide in 1925-1929 and 1933 (from IIA, Rome).

For some years the author has been dedicated to the economic propagation of this legume (*la soja*) in Spain. He has succeeded in calling attention to its merits, both with the first edition of this book (1932) and with subsequent work and demonstrations; a number of farmers have experimented with the crop. He was asked to do a new edition of this booklet by the Ministry of Agriculture's Department of Publications, Press, and Propaganda / Advertising, in order to synthesize some observations of recent years and to give an opinion on the possibilities and economic advantages of 'la soja' in Spain. The author reflects that the days of hunger in the 'red zone' are not far away (p. 5).

The Station of Cereal Culture (*Estación de Cerealicultura*) and the Institute of Agronomic Investigations (*Instituto de Investigaciones Agronómicas*) are already working on soybean cultivation. The author offers to the Superior Council of Scientific Investigations the subject of the use of soy in the diet, and how to perfect the soybean, lower its price, and employ its derivatives in as many technical fields as other countries already do. In effect, not

alone did Russia start giving maximum attention to the soybean (p. 7).

In southeast Spain, soybeans have been cultivated on the farms of Jerez de la Frontera by the author's esteemed teacher and the director of the Center D. Eduardo Noriega Abascal (p. 8). A graph on page 10 shows soybean imports and exports for 1934 for various countries.

Some antecedents to the present trials conducted in Spain: In 1917 the Spanish council in Shanghai, don Julio Palencia, sent to the Spanish Department of State a study on the cultivation of soybeans, proposing that trials be made to acclimatize the valuable legume to their country.

In Motril (a city in south central Spain on the Mediterranean) and then in the Southern Agricultural Station at Malaga (a town just to the west of Motril, also on the Mediterranean), soybeans started to be cultivated about 10 years ago (c. 1931) by the agronomic engineer D. Arsenio Rueda, in parcels of 5 ares = 0.5 ha, from which he obtained yields each of 60 litres (.78kg/liter), so 46.8 kg per 5 ares.

Both white and black varieties have given good results, but the white was better, and the seeds obtained have been divided among agriculturists...

In Spain, besides the trials cited above, for more than 25 years (since ca. 1916) the soybean has been cultivated with excitement thanks to the zeal and the interest, realized in patriotic labor on the farm in Jerez (southeast Spain), of the agronomical engineer Eduardo Noriega, and also of Mr. Oritz, comrade of the former. They shared yellow and black varieties with Valencian farmers; Valencia is on the Mediterranean. Cultivation has since been accomplished in the central Spanish region. There is also a record of the cultivation of soybeans in Lerida in the years 1925-26 by the doctor don Jose Abdal, an illustrious pharmacist.

The sowing was done with seeds procured from Japan of the variety soja hispida, yellow seeded, with the object of seeing if it would grow in this province. The seeds were soaked for 10 hours in water, then planted in a garden without more security or care than they would take with any other plant. They were sown at the end of April and most of the seeds germinated, reaching a height of 65 cm. They developed and flowered perfectly, and were completely developed by the end of August. This small trial can only demonstrate that the soybean will grow in irrigated terrain, on a warm site, and without much care (p. 12-14).

The agronomic engineer Jesus Andreu, 20 years ago, did tests on the culture of soy as a forage plant in the province of Pontevedra with good results. There is also news, if incomplete, of other successful tests in the provinces of Madrid and Toledo.

As a consequence of this news—and perhaps of the spreading of these and of the foreign trials, and of the experiences of the National Agronomic Institute—soybeans have been divided among individuals and farms for the last 10 years by the General Direction of Agriculture. And the

Institute of Cereal Culture has resumed trials with seeds of Japanese origin. The author's companions, don Felix Sancho Penasco and don Fernando Gaspar are studying a hundred varieties, and will determine the requirements of each variety in order to select the ones appropriate for each region (p. 15).

Note: No date is given in this book. However a bibliography in the Sept/Oct. issue of *Revue Internationale du Soya* gives the date as 1941. Address: Ingeniero Agronomo, Madrid, Spain.

98. Hortus Botanicus Conimbrigensis. 1941. Index seminum quae Hortus Botanicus Conimbrigensis pro mutua commutatione offert [List of seeds offered for exchange by the Botanical Garden at Coimbra, Portugal]. Coimbra, Portugal: Instituto Botanico da Universidade de Coimbra. 19 p. 21 cm. [Lat; fre]

• **Summary:** Plants are listed by family. Under the Leguminosae, plants are listed alphabetically by genus, including *Soja hispida* Moench. Address: Coimbra, Portugal.

99. Iwao, Seiichi. 1941. Nan'yô Nihonmachi no kenkyû [Study of Japanese settlements in the south]. Tokyo: Minami-Ajia Bunka Kenkyusho. [Jap]\*

• **Summary:** Antonio de Morga, a senior Spanish administrator, wrote an early ethnology of the Philippines in 1609. He arrived at his post in Manila in 1595 by an order of the king of Spain. He was the only person in the Philippines who had a doctorate except for persons concerned with the church. He was in repeated sharp disagreement regarding colonial rule until he left the Philippines in 1603. It is said that he wrote his book titled *Sucesos de las Islas Philipinas* in Mexico after he left the Philippines (See also Wikipedia at "Antonio de Morga").

Morga described the goods traded by the Philippines during his stay. He was especially interested in the trade by sailing ships between Nagasaki (Japan) and Luzon. They would arrive in Luzon each year in about March and at the end of October using the north wind. They returned to Japan in June and July using the southwest winds. One of the items imported from Japan were kegs or vats of miso (*miso-daru*). The word *miso* is still used in the Philippines today to refer to this fermented soyfood (Matsuyama 2003, p. 228-30).

100. Vander, Adrianus [pseudonym]. 1941. Cocina vegetariana racional y enseñanza de una alimentacion sana [Rational vegetarian cookery and teaching of a healthy diet]. Barcelona, Spain: Librería Sintet, etc. 167 + 2 p. Illust. 19 cm. [Spa]

• **Summary:** Part I is about the nutritional value and benefits of a vegetarian diet for the healthy and the ill. Part 2 contains 400 vegetarian recipes. Page 137 gives 2 recipes for "Puré de soja" (soy purée), which are basically the same as the recipe in the 1936 edition. Address: M.D.

101. Floyd, Dolores Boisfeuillet. 1941? Miscellaneous notes, including “Sea going terms to use,” and notes on six 3-by-5 cards. Savannah, Georgia. 4 p. Undated. Unpublished manuscript.

• **Summary:** Part I—Two pages of miscellaneous notes state: “Sea going terms to use and data for [Samuel] Bowen’s ship at Macao [Macau] leaving there bound for Deptford at London [England] and arriving there: on ship board at Macao, impatient to be off on the voyage home to England. a dead calm kept the ship rolling and wallowing.

“A strong wind, and then away, forging through boisterous seas in the homeward course. Keeping the wet from ship bread. Arrived at the haven at Deptford & settled into her berth there with sails furled.

“Bowen’s costume & cue & beard a la Chinois, struck a false note with his English hair, features & speech.

“down the companion away into the shelter of the cabin away from the wet of the sea swept deck. heavy squalls swept through the rigging.

“buffeted the qualls [sic] vibration from the quiver of masts, floor planking, deck planking, discharging cargo, ship’s hands on deck.”

Part II—Notes on 3 by 5 cards starting “New light on the introduction of soy beans into United States! 50 years before the captain of the New England clipper ship bought brought a small sack of soy beans from China, soy had been secreted from China and planted at Savannah, Georgia and became a regular article of export before Am. Rev. [the American Revolution].

“For introduction to Bowen’s secret, begin article with correcting idea about New England ship captain; & follow that statement with saying it all happened like this; picturing Bowen with his hand on treasures of soybeans in his pocket talking about it to [James] Flint, both on ship leaving harbor at Macao. Then cut back and tell about Bowen in China. Model idea suggested in article.

“Also hang, or ‘peg’, Bowen’s story on his practical knowledge of food on long sea voyages because of his first hand information from his travels by ship to China. Open his story on an East Indiaman ship leaving Macao & close with his leaving Savannah by ship.” Note: An East Indiaman is a large, fast sailing ship formerly running to the East Indies and back to Europe.

“Soy and sago—Stolen secrets of Old China Brought to English Colonial America.

“Greenwich where an experiment was made with stolen secrets of China.

“Soy entered the realms of American export before the American Revolution; regularly listed in Custom Office of Savannah.”

Note 1. This unpublished manuscript is in the collected papers of Marmaduke H. Floyd and Dolores B. Floyd, which is collection No. 1308 at the Georgia Historical Society, Savannah, Georgia. This manuscript is in Box 48, folder

#647 titled “Bowen and Flint.” Dolores B. Floyd died in 1966. This undated manuscript may have been written during the 1940s, or perhaps as early as the late 1930s.

Note 2. The author does not seem to realize that Bowen exported soy sauce, not soy beans, from Georgia to England. Address: Savannah, Georgia.

102. *Chicago Daily Tribune*. 1942. Java—Its a crowded corner of the rich Indies’ storehouse. Feb. 4. p. 6.

• **Summary:** Yesterday, Java was subjected to its first Japanese air raid. “It is the heart of the Netherlands East Indies, the most densely populated area in the world, and one of the richest in natural resources.” Its population, together with that of Madoera [Madura island, administered as part of East Java], is approximately 42 million.

Roughly 40-50% of the land on Java is cultivated—the remainder being mostly forests or mountains. The main crops are rice, rubber, sugar cane, cassava, millets, sweet potatoes, soy beans, kapok...

Includes a good historical overview of the European powers in Java; the Portuguese were the first to arrive.

103. Studewirt, E. 1942. La culture du Soya dans les pays d’Europe [The cultivation of soybeans in the countries of Europe]. *Revue Internationale du Soja* 2(10):105-109. March. [2 ref. Fre]

• **Summary:** Contents: Introduction. The nutritive value of soybean (according to the analyses of M. Zlataroff {1926} and M. Kaltscheva {1932} on soybeans cultivated in Bulgaria). Cultivation reinforced (I.G. Farben in Bulgaria, Romania, and the former Yugoslavia). The use of chemical fertilizers. A favorable and sale of the crop assured (by I.G. Farben).

Development of soybean cultivation in Europe (The first cultural trials with soybeans in Europe were conducted in 1934 in Romania, with the assistance of German industry, and on a surface of 1,400 hectares. In the autumn of the same year, in Bucharest, the Romanian Soybean Society {*Société du Soya Roumain S.S.R.*} was founded. In Bulgaria, in 1936 some 4,900 ha of soybeans were planted for the first time, giving a yield of 53,000 metric tons. In Yugoslavia, also, Germany had given the impulse. In 1935 the *Société Uljarica* was founded in Belgrade [today the capital and largest city of Serbia] for the cultivation of oilseeds).

The soybean harvests obtained from the three countries of Romania, Bulgaria, and Yugoslavia combined were:

1935: 11,600,000 metric tons

1938: 58,090,000 metric tons

1939: 90,595,000 metric tons

Spain, Italy and Austria also cultivated soybeans.

Thus, the cultivation of soybeans in Europe promises great success.

Note: But how about France?



104. Matagrín, A. 1942. Le Soya et les laines synthétiques: Lanital and glycinine et formulas complexes [The soybean and synthetic wool: Lanital, glycinin and complex formulas]. *Revue Internationale du Soja* 2(14):237-44. Sept/Oct. [19 ref. Fre]

• **Summary:** Note: Glycinin is a globulin found in the seeds of the soybean.

Contents: Introduction. 1. "Lanital" based on soy glycinin: Why should we make plant-based / vegetal casein for synthetic wool?, the technique for making Silkool, plant-based lanital. Perfection of synthetic wool and complex formulas. Conclusion.

Nylon is a family of synthetic fibers (a polymer) developed by DuPont and first made in Feb. 1935.

105. *Revue Internationale du Soja*. 1942. Le Soya à travers le monde [The soybean around the world]. 2(14):270-72. Sept/Oct. [Fre]

• **Summary:** Contents: The Balkans (Romania, Bulgaria, Hungary, Croatia). Egypt. Spain (The firm Sabater is constructing a new factory at Lérida [Lerida] which will produce annually 0.6 million kg of soy oil and sunflower seed oil). United States. Hungary. Manchuria.

106. Schiller, Clara. 1942. Conseils aux planteurs de Soya Espagnols [Advice to soybean planters in Spain]. *Revue Internationale du Soja* 2(14):237-44. Sept/Oct. [5 ref. Fre]

• **Summary:** Miss Clara Schiller was a scientific experimentalist for the I.G. Farben Co. We all know the important part of this remarkable industrial firm in the development of soybean cultivation in the Balkans.

A table shows the nutritional composition of five common legumes; the soybean contains much more protein and vegetable oil than the others. Soy flour is also richer in nutrients than wheat flour. Soy oil is relative rich in unsaturated fatty acids and lecithin. In Spain, shortly after the civil war (1936-1939), very advanced and extensive testing was done using numerous soybean varieties imported from the United States, Germany, Romania, and France. but it goes without saying that we are still very far from the results we need. So much remains to be done. We will only achieve these aims if the Spanish farmers with land suitable for growing soybeans (*soya*) agree to collaborate with us.

On page 240 is an outline map of Spain on which are eight zones. Zones 1, 2, and 6 are in the warm south. The suitability of each zone for soybean production is discussed in detail.

The writer then discusses: Choice of terrain. Nitrogen fixation and inoculation. Fertilizer. Planting: Time, depth, space between seeds in a row, space between rows, ways of cultivation, the harvest. Threshing. Enemies and diseases. The weevil (*Le charançon; la bruche*) is the main enemy of the soybean.

On page 245 is a list of Spanish-language publications

about soybeans. Address: Managing Engineer, Soybean Department in Madrid (*Ingeniero-Gerente du Département du Soya à Madrid*).

107. Saillenfest, Jean. 1942. La culture du Soya au Portugal [Cultivation of soybeans in Portugal]. *Revue Internationale du Soja* 2(15):284-85. Nov/Dec. [Fre]

• **Summary:** Last spring Portugal imported 5 metric tons of soybeans from the United States. These have been on order for a long time by the Portuguese government, The climate of Portugal is excellent for growing soybeans. A table lists the names of the varieties tested and the source of each (USA or Japan).

108. Saillenfest, Jean. 1943. La culture du Soya au Portugal [Cultivation of soybeans in Portugal]. *Revue Internationale des Produits Coloniaux et du Material Colonial* 18(192):18-19. Jan/Feb. [Fre]

• **Summary:** Last spring, we learned with interest, 5 tons of soybean seeds arrived in Portugal from the United States. These seeds have been on order for a long time by the government of Portugal and they were expected to be sold at cost and without any tariff to the farmers desires to cultivate them.

In effect the soil as well as the climatic conditions appear clearly to favor Portugal as a place of cultivation, especially in the southern province of Algarve and in the rich valleys of the Tage and Mondego rivers.

It should be noted, likewise, that Portugal lies between the 37 and 42 degrees north latitude, and that this corresponds rather exactly with the states of the USA which are the main producers of this seed. This remark becomes especially important when one realizes the sensitivity of soybeans to photoperiod.

And Portugal was able to import, this year, not only an early variety such as the Manchu,, but also the late varieties such as the Mammoth Yellow and the Improved Yellow. In France, the Mammoth Yellow variety, suited for short days, flowers only in the south of France and must be planted rather late.

The seeds imported this year to Portugal permit the cultivation of 100 ha in addition to the area already cultivated, a rather small amount to be sure.

This effort has been made possible thanks to the research of the National Agronomic Station at Sacavem, under the leadership of its eminent director Prof. A. Camara.

Situated about 12 kilometers to the northeast of Lisbon, Sacavem lies on the banks of the Tage river, within a fertile region.

The National Agronomic Station has obtained from Japan and the USA about 100 soybean varieties which have been cultivated in the experimental fields.

From among these varieties Prof. Camara has chosen about 30 which seem to be of greatest interest to Portugal

and which appear in the station's catalog for 1942. Here is the list with the number, name, and country of origin, sorted by number.

8345–Manchuria 13-17, USA.  
 8346–Dunfield, USA.  
 8347–Ito San, USA.  
 8348–Harbinsoy, USA.  
 8350–Peking, USA.  
 8351–Illini, USA.  
 8352–Mandarin, USA.  
 8353–Wis-Mandchu, USA.  
 8354–Rikuu 10, Japan.  
 8355–Akita, Japan.  
 8356–Rikuu 27, Japan.  
 8357–Tamatakuri, Japan.  
 8358–Sennari, Japan.  
 8359–Yogetsu, Japan.  
 8360–Sirassaya, Japan.  
 8361–Ou 1, Japan.  
 8363–Rikuu 3, Japan.  
 8364–Aoda, USA.  
 8364–Aoda, USA.  
 8369–Creole, USA.  
 8370–Dixie, USA.  
 8372–Georgian, USA.  
 8373–Haberlandt, USA.  
 8374–Hahto, USA.  
 8376–Hayseed, USA.  
 8379–Kura, USA.  
 8380–Laredo, USA.  
 8387–Mansoy, USA.  
 8389–Mukden, USA.  
 8391–Palmetto, USA.  
 8393–Rokusun, USA.  
 8394–Scioto, USA.  
 8395–Tokyo, USA.  
 8396–Virginia, USA.  
 8400–Large Seeded Tokio, USA.

The research undertaken at Sacavem has as its goal to study the adaptation of the soybean to the different regions of Portugal as well as the possibilities of its expansion.

The work of selection at the station was targeted particularly at obtaining early varieties which were also productive [high-yielding] and all matured at about the same time.

The results obtained during the first year of experiments indicate that the early varieties (less than 120 days) are those of greatest interest to Portuguese cultivators.

Among these varieties, the following American varieties are of special interest: Dunfield, Ito-San, Wis-Manchu, Manchuria 13-17, Peking, and Illini.

Among the medium-early varieties, those of greatest interest are Sennari, Scioto, Rikuu 29, and Yogetsu. Three of these come from Japan. All these varieties yield more 2,000

kg/ha. Address: France.

109. Rebelo Hespanha, Jaime. 1943. A soja: Cultura e utilizacao dos seus produtos [The soybean: Cultivation and use of its products]. Lisboa, Portugal: Livraria Rodrigues. 42 p. No index. [Por]

• **Summary:** Contents: Part I: Soybean culture. 1. Introduction: History and origin, botanical description, advantages of its cultivation for farmers. 2. Soybean culture: Climate, terrain, types of culture, seed and sowing, varieties and sub-varieties, seed characteristics, time of planting, manuring and fertilizing, precautions during cultivation, harvest. 3. Yields.

Part II: The products of soya and its utilization. 1. As human food: As a green vegetable (*como legume*), flour (*farinha*), milk (*leite*), cheese (*queijo-caseina* [tofu]), oil (*oleo*), the hulls (*bagaço*). 2. Feed for cattle. 3. Industrial products.

In Spanish the soybean is called “Soja, Soya, Haba, or Guisante de Japan.”

In the section on soybean culture, pages 10-11 state: “For 20 years [i.e. since 1923], the soybean has been cultivated in Ribatejo, with the only goal of providing feed for cattle. The soybean is now being cultivated technically in Alentejo, in Baixo-Minho, and in parts of Estremadura. [Note 1. Ribatejo, Alentejo, Estremadura, Baixa, and Minho are all provinces of Portugal, according to the U.S. Board of Geographic Names for Portugal, 1961.] The land in these areas is well suited for growing soybeans. The most admirable initiative for the cultivation of soybeans in Portugal was undertaken by the Malange [Malanje] Agricultural Station (in Angola), which obtained a yellow variety that had been given an excellent classification in Germany.

“Soybean cultivation in Angola could be extensively spread, even among European farmers. The growing period does not exceed 145 days, and the yield averages 700 kg of seeds [per hectare], bringing a price of \$25 (0.25 angolares) per kilogram. It would be good if the example given by the Malange Agricultural Station would spread to the [area around the] cities.”

Note 2 This is the second earliest document seen concerning soybeans in Portugal, or the cultivation of soybeans in Portugal. This document contains the second earliest date seen for soybeans in Portugal, or the cultivation of soybeans in Portugal (1923 in Ribatejo). The source of these soybeans is unknown. The author was born in 1891.

Note 3. This is the earliest Portuguese-language document seen (April 1913) that uses the term *queijo caseina* to refer to tofu. Address: Major do S.A.M., Portugal.

110. *Revue Internationale du Soya*. 1944. Le Soya à travers le monde [Soybeans around the world]. 3(22):27. Jan/Feb. [Fre]

• **Summary:** Contents: Spain. In 1943 the harvest of cereal grains and legumes was small, in part due to drought.

111. De Almeida, J. 1944. O fotoperiodismo na Soja hispida [The photoperiodism of Soja hispida]. *Moench. Agron. Lusitana* 3:183. [Por]\*

112. Union Nacional de Cooperativas del Campo. 1944. Instrucciones sobre el cultivo de la soja y sus aplicaciones. 2nd ed. [Instructions on the cultivation of the soybean and its applications. 2nd ed.]. Madrid. 16 p. [Spa]

• **Summary:** Pages 12-14 list industrial uses of soybeans, give a nutritional analysis of white and black soybeans (Soja blanca, Soja negra) done by the Central Agricultural Station (*Estación Agronómica Central*) using samples from Granada, and briefly describe several soyfoods, including soy flour, soymilk, and tofu (*queso de soja*). Thus section concludes: "Outdoing the known anecdote of Permantier, who offered Louis XVI a succulent feast in which all the dishes were made of potatoes, today one could make a menu that was more varied, rich and select in which the delicacies as well as the serving utensils would all be derived from soya." Address: Madric, Spain.

113. Lager, Mildred. 1945. The useful soybean: A plus factor in modern living. New York and London: McGraw-Hill Book Company, Inc. xii + 295 p. Illust. General index. Index of recipes. 22 cm.

• **Summary:** One of the most important and innovative books on soyfoods ever written. Contents: Preface. 1. Agriculture's Cinderella: America discovers the soybean, our wonder beans, soy as a food in the United States, soy in rehabilitation food programs, soybeans as an emergency crop, soybean terminology. 2. World-wide use of soybeans: A real antique, monarch of Manchuria, soybeans in mechanized warfare—Germany, soybeans in other countries (USSR, Italy, Spain, Belgium, Holland, Norway, Denmark, Sweden, Great Britain, Canada), soybeans in Lend-Lease and United States Agricultural Marketing Administration, Food for Greece, soybeans and the Mexican Indian, soybeans in Hawaii (Mr. C.G. Lennox). 3. Soybeans and industry: The versatile soy, uses of soybean in industry, soybean paint (from soy oil, incl. Duco finishing), soybean protein (used in making plywood, plastics, water paints, paper sizing, leather finishes, and insecticide sprays), Henry Ford and soybeans, soybean glue (I.F. Laucks and the firms he has licensed turn out some 30,000 tons of soybean glue annually), rubber substitute (Norepol), paper industry (Glidden), plastics, soy-cotton helmets, firefighting compounds, lecithin, fertilizers. 4. Nutritional nuggets: Food value of soybeans and soy products (vegetable or edible types of soybeans, protein, fat & carbohydrate, minerals, vitamins, lecithin, alkaline ash, economy, exaggerated claims), principal uses of soybeans and soy products (meat substitutes, meat enrichers, fortifying

foods with soy flour). 5. From soup to nuts: Green beans, dry beans, frozen beans, roasted soybeans, sprouted soybeans, the cow of China—soy milk, the meat without a bone—tofu or soy cheese, the little giant among protein foods—soy flour, soy grits, puffed grits, soy oil, miscellaneous soy products (soy butter [soynut butter, p. 99-100], sandwich spreads, malts, coffee substitutes, soy sauce, soy albumen—a new product, greatly improved during the past two years, is now used to "replace egg albumen in candy manufacture" [as in marshmallows]).

Note 1. This is the earliest English-language document seen (March 2001) that refers to tofu as 'the meat without a bone.' In 1938 Horvath called tofu 'the meat without the bones.' Note 2. This is the second earliest document seen (Aug. 2002) in which the soybean is called the "cow of China."

Note 3. This is the earliest English-language document seen (Aug. 2003) that uses the term "soy albumen" (or "soy albumens") to refer to isolated soy protein as a product.

6. The blazed trail: Introduction (history and pioneers), our tardy acceptance, food pioneers (health-food stores, Dr. W.D. Sansum of Santa Barbara and soy bread, allergy studies, vegetarians, Seventh-day Adventist food companies, meatlike products, Madison College of Tennessee, Loma Linda Food Co., the International Nutrition Laboratory and Dr. H.W. Miller, special dietary concerns and diabetic diets), establishing soybeans in the kitchen (The Edison Institute and Henry Ford, the USDA and the U.S. Bureau of Home Economics, the Agricultural Marketing Administration, U.S. railroads, the Soy Products Division of the Glidden Co., the Soy Flour Association). 7. The challenge of nutrition: The dangers of hidden hungers, nutrition and health, corrective nutrition, starch-restricted diets, meatless diets, allergy diets, bland diets, building diets, reducing diets, acidophilus culture, lecithin. 8. Our wonder crop: Jack and the beanstalk, early history, new varieties, aids to the industry (Regional Soybean Industrial Products Laboratory, American railroads, American Soybean Association, Fouts Brothers of Indiana, *Soybean Digest* and George Strayer in Hudson, Iowa, Soy Flour Association with Edward Kahl as first president, Soya Kitchen in Chicago (Illinois) opened in Jan. 1943, National Soybean Processors Assoc., National Farm Chemurgic Council), educational program, restrictive regulations. 9. Soybeans and the farmer: Varieties, sources of information, seeding and inoculating, harvesting, grading, soybean diseases, crop rotation, damaged beans. 10. Tomorrow: Acreage and production, soybeans on the farm, soybeans in nutrition, postwar industrial uses, future improvements. 11. A few suggestions for better living: Kitchen diplomacy, personal opinions, soybeans for everyone. Recipes: Green soybeans, dry soybeans, sprouted soybeans, roasted or toasted soybeans, meat-substitute dishes, soy-enriched meat dishes, soy noodles, macaroni, spaghetti, sauces and gravies, soups, salads, dressings, soy spreads, soy milk, tofu or soy



cheese, soy butter, soy cereals, soy desserts, soy candies, soy beverages, soy-flour recipes, bread and muffins, pancakes and waffles, soy gluten recipes, baking-powder biscuits, pastry, cookies and doughnuts, cakes.

Contains recipes for “Soy milk molasses shake (p. 238). Soy puddings. Soy ice cream (p. 250; “Soy milk may be used in place of regular milk in ice-cream recipes... adding whipped cream”). Soy fruit ice cream. Soy chocolate dessert (Eggless) (p. 250-51). Soy shake “(p. 254, made in a “liquefier or mixer”).

The story of Allied aid to Greece [p. 24-26] is one of the great mercy stories of World War II. Starting in March 1942, as many Greeks were starving, the first mercy ship sailed to Greece with food and medicine. Up to Nov. 1943, the United States through Lend-Lease sent 82 million pounds of food to Greece. A number of these foods (including soup powders, stew mixes, and spaghetti) were based on soy flour and grits, and specifically developed to suit Greek tastes.

Concerning Henry Ford (p. 35-38), his “first experiments were made in a laboratory in connection with the Edison Institute in 1930. In these experiments, several tons of wheat were used, also several thousand bushels of carrots; sunflower seeds, which have a high oil content; cabbages; onions; and cornstalks. It was not until December, 1931, after a long series of experiments with the soybean, that Mr. Ford and his chemists felt that they were at last approaching a solution to the problem of finding a basic farm material from which the ordinary farmer could develop a commercially profitable product.”

Note 4. This is the earliest published English-language document seen (Sept. 2013) that uses the term “Soy ice cream” (p. 250).

Note 5. This is the earliest document seen (July 2007, one of two) that uses the word “Cinderella” in connection with the soybean. The author, however, does not elaborate on this idea.

Note 6. This is the earliest English-language document seen (Nov. 2013) that contains the term “soy-flour”—however it is used as an adjective. Address: Southern California.

114. Navarre Direccion de Agricultura y Ganaderia. 1945. Lino, soja y lúpulo: Cultivos del porvenir [Flax/linseed, soya and hops: Crops of the future. Revised ed.]. Pamplona, Spain: Editorial Aramburu. 28 p. See p. 15-22. 1st edition 1938. [Spa]

• **Summary:** Contents of “La Soja” chapter: Introduction. Its importance worldwide. Interest in soya in Spain. Cultivation of soya: Type of plant, inoculation, rotations, preparation of the soil, fertilizer, sowing, care in culture, harvest and yields, final observations. Navarre is a province in Spain.

“Interest in soya in Spain—Twenty years ago the soybean was introduced to Spain rather timidly, with some trials being conducted by the Count (el Conde) of San Bernardo in Ecija (Sevilla), by Mr. Valderrama in Montilla (Córdoba),

by the engineer (Ingeniero) Mr. Noriega in Jerez (Cádiz), and Mr. Abril in Tortosa (Tarragona). And even though all of them obtained satisfactory results, the routine and static state of our farmers prevented the crop from developing beyond these mere trials.

“Nevertheless, the soybean contains qualities that would allow its introduction to our farmlands, and these qualities have been confirmed in recent years by the Duke of Terranova and the engineer Pascual de Quinto in Zaragoza, as well as by the Directorate of Agricultural Services of Navarra (Dirección de los Servicios agrícolas provinciales de Navarra), even though our region does not have the most favorable conditions for a plant originating in warm countries...

“It has been proven in the trials conducted in Navarra that the varieties Manchu and Dunfield grow successfully in the low mountainous zone. On the other hand, the Illini and Harbyns soy [Harbinsoy] varieties, which are later early varieties, do not ripen in that zone, though on its periphery they grow to perfection. There are hundreds of varieties of soybeans, and new ones are constantly added; from these we hope to find types that are better adapted to our climates.” Address: Navarre, Spain.

115. Floyd, Dolores Boisfeuillet. 1945? Notes for a play about the life of Samuel Bowen in 12 scenes. Savannah, Georgia. 2 p. Undated. Unpublished manuscript.

• **Summary:** Introduction: Erroneous idea about New England sea captain & his bag of beans as a curiosity. 50 years before that date soy was brought to Savh. [Savannah] not as a curiosity but objectively for cultivation for food value & as an article of commerce & export. The story of its introduction romantic, the Marco Polo-like adventure of its beginning.

Scene I—Macao [Macau]. English East India Company’s factory. Bowen’s arrival there from Canton after four years absence, dressed in faded worn Chinese clothing with hair and beard in Chinese style. Seeks his friend James Flint who is on board East Indiaman about to [depart] for England. Persuades Flint to accompany him from England to go to America to make fortune out of Chinese secrets he has discovered. Bowen obtains passage on same ship which is in Macao harbor waiting for a favorable wind to sail for England. Side notes: Mean no reflection on U.S. Dept. of Agriculture, but intention only to show how widespread (?) is unknown. Make the article take a slant that helps the advertisers in *Saturday Evening Post* who advertise goods made from soy & sago. Kidnapped Bowen. Show Bowen just released through efforts of company in the Indies with Chinese influence. Show Bowen with a fixed idea & as tenacious of it as a Frenchman with an *idée fixée*. Show him energetic, adventurous, inquisitive, indefatigable.

Scene II (cutback). On shipboard Bowen describes to Flint his travels in China. On long voyage wet bread

& mouldy med. [medicine] illustrate Bowen's idea for improvement.

Scene III. Arrival of East Indiaman at Deptford [on the River Thames near London] with Bowen & Flint on Board.

Scene IV. Bowen & Flint go to East India Company offices in London to get discharge from company's service in order to go to America on their own.

Scene V. Having learned from inquiries about botanists familiar with America, visit [Dr. John] Fothergill ? or [Peter] Collinson ? & are told about Savannah.

Scene VI–Savannah. Bowen having purchased Greenwich, is practical and acquires a wife to preside there, is even more practical in marrying daughter of British collector of customs at Savannah. That he became acquainted with customs collector natural course of events because of his interest in trade. Side notes: It would seem that Bowen was among the East India Company's servants who in addition to salary had made some profits on his own, & had acquired a small fortune.

Scene VII–Savannah: Bowen's plantation. Successful cultivation of soy. Starch making apparatus. Training Negro slaves. Acquires Macao island. Side notes: Tattnell neighbor plantation. Tattnell & China. Deptford plantation & Deptford England wharves of East India Company.

Scene VIII. Demonstration of his soy and sago to members of the Georgia legislature & their official recommendations to British government to give him a patent.

Scene IX–London: Royal Society. Bowen contacts his former patron Fothergill ? or Collinson, & their tests of his products bring medal from Royal Society & patent from King. His father's death. Side notes: Royal Gov't has just taken over Province & impetus is given to silk culture—a fact which brings Ga. [Georgia] to mind of the botanists- Georgia & Chinese silk.

Scene X–Savannah. Bowen's shipments of soy & sago & development of his industries. Side notes: Death (?) of [Count Casimir] Pulaski. Count d'Estang's (?) re-incarnation (?). Feeling of mice & men. Tattnell's grave.

Scene XI. Bowen's last voyage on eve of Revolution & his disappearance.

Scene XII. Bowen's heirs. Son named James Flint. Daughter married English doctor who acquired Greenwich & continued the sago starch making. The French traveller's comments. The secret recipe content divulged. Sago palms at Greenwich. Macao island. Bowen's untimely death. What must have developed (?). Side notes: Untimely death of Bowen. How his efforts might have naturally affected U.S. economics. Tattnell tomb. Macao Island. Conclusion.

Note 1. This unpublished manuscript is in the collected papers of Marmaduke H. Floyd and Dolores B. Floyd, which is collection No. 1308 at the Georgia Historical Society, Savannah, Georgia. This manuscript is in Box 48, folder #647 titled "Bowen and Flint." Dolores B. Floyd died in 1966. This undated manuscript may have been written during

the 1940s, or perhaps as early as the late 1930s.

Note 2. This story was uncovered independently, and in more detail, by Prof. Theodore Hymowitz and Prof. J.R. Harlan and published by in Dec. 1983 them as "Introduction of soybean to North America by Samuel Bowen in 1765" in *Economic Botany* 37(4):371-79. Address: Georgia.

116. Soroa, José Maria de. 1945? La soja. Su cultivo y aplicaciones. Segunda edicion, corregida y aumentada [The soybean. Its cultivation and utilization. 2nd ed.]. Madrid, Spain: Ministerio de Agricultura. Seccion de Publicaciones, Prensa y Propaganda. 87 p. Undated. No index. 16 cm. First ed. was by Abadal and Soroa, 1932. [Spa]

• **Summary:** Contents: The soybean. Recent history. Some antecedents to the present trials conducted in Spain. Agronomic notes (incl. soybean varieties). Preparation of the soil. Utilization of soybeans. Food uses. Other applications of the seed. Industrial uses. Soybean oil. Use of the soybean plant as feed. Forage. Use of soybean in clinical analysis (urease). Appendix: Soybean production worldwide in 1925-1929 and 1933 (from IIA, Rome).

For some years the author has been dedicated to the economic propagation of this legume (*la soja*) in Spain. He has succeeded in calling attention to its merits, both with the first edition of this book (1932) and with subsequent work and demonstrations; a number of farmers have experimented with the crop. He was asked to do a new edition of this booklet by the Ministry of Agriculture's Department of Publications, Press, and Propaganda / Advertising, in order to synthesize some observations of recent years and to give an opinion on the possibilities and economic advantages of 'la soja' in Spain. The author reflects that the days of hunger in the 'red zone' are not far away (p. 5).

The Station of Cereal Culture (*Estación de Cerealicultura*) and the Institute of Agronomic Investigations (*Instituto de Investigaciones Agronómicas*) are already working on soybean cultivation. The author offers to the Superior Council of Scientific Investigations the subject of the use of soy in the diet, and how to perfect the soybean, lower its price, and employ its derivatives in as many technical fields as other countries already do. In effect, not alone did Russia start giving maximum attention to the soybean (p. 7).

In southeast Spain, soybeans have been cultivated on the farms of Jerez de la Frontera by the author's esteemed teacher and the director of the Center D. Eduardo Noriega Abascal (p. 8). A graph on page 10 shows soybean imports and exports for 1934 for various countries.

Some antecedents to the present trials conducted in Spain: In 1917 the Spanish council in Shanghai, don Julio Palencia, sent to the Spanish Department of State a study on the cultivation of soybeans, proposing that trials be made to acclimatize the valuable legume to their country.

In Motril (a city in south central Spain on the

Mediterranean) and then in the Southern Agricultural Station at Malaga (a town just to the west of Motril, also on the Mediterranean), soybeans started to be cultivated about 10 years ago (c. 1931). by the agronomic engineer D. Arsenio Rueda, in parcels of 5 ares = 0.5 ha, from which he obtained yields each of 60 litres (.78kg/liter), so 46.8 kg per 5 ares.

Both white and black varieties have given good results, but the white was better, and the seeds obtained have been divided among agriculturists...

In Spain, besides the trials cited above, for more than 25 years (since ca. 1916) the soybean has been cultivated with excitement thanks to the zeal and the interest, realized in patriotic labor on the farm in Jerez (southeast Spain), of the agronomical engineer Eduardo Noriega, and also of Mr. Ortiz, comrade of the former. They shared yellow and black varieties with Valencian farmers; Valencia is on the Mediterranean. Cultivation has since been accomplished in the central Spanish region. There is also a record of the cultivation of soybeans in Lerida in the years 1925-26 by the doctor don Jose Abdal, an illustrious pharmacist.

The sowing was done with seeds procured from Japan of the variety soja hispida, yellow seeded, with the object of seeing if it would grow in this province. The seeds were soaked for 10 hours in water, then planted in a garden without more security or care than they would take with any other plant. They were sown at the end of April and most of the seeds germinated, reaching a height of 65 cm. They developed and flowered perfectly, and were completely developed by the end of August. This small trial can only demonstrate that the soybean will grow in irrigated terrain, on a warm site, and without much care (p. 12-14).

The agronomic engineer Jesus Andreu, 20 years ago, did tests on the culture of soy as a forage plant in the province of Pontevedra with good results. There is also news, if incomplete, of other successful tests in the provinces of Madrid and Toledo.

As a consequence of this news—and perhaps of the spreading of these and of the foreign trials, and of the experiences of the National Agronomic Institute—soybeans have been divided among individuals and farms for the last 10 years by the General Direction of Agriculture. And the Institute of Cereal Culture has resumed trials with seeds of Japanese origin. The author's companions, don Felix Sancho Penasco and don Fernando Gaspar are studying a hundred varieties, and will determine the requirements of each variety in order to select the ones appropriate for each region (p. 15). Address: Ingeniero Agronomo, Madrid, Spain.

117. *Soybean Digest*. 1946. Soybean oil to Spain and Italy. May. p. 24.

• **Summary:** “Five thousand metric tons of soybean oil have been allocated for export to Spain during the April-June quarter, in return for an equal amount of olive oil for export from Spain to the U.S., the Department of Agriculture has

announced.

“Arrangements have been made with the Italian government for a trade of 2,500 metric tons of soybean oil for olive oil on the same basis and during the same period, according to USDA.

“In order that the shipments might be made as early as possible, USDA announced that applications by private firms for export licenses to ship soybean oil to the above countries would not be received after April 25 and April 22 respectively.”

118. *Revue Internationale du Soja*. 1946. Le soja à travers le monde [The soybean around the world]. 5(31-32):141-44. Sept/Oct. [Fre]

• **Summary:** Discusses: Recipes for soy flour used by the German military (from *Soybean Digest*, Dec. 1941). The Useful Soybean, by Mildred Lager. An article in the *London Times* (23 April 1940) about how the soybean “has become vitally important to Germany from the food, economic, and military standpoints.” Use of soy in Italy under Mussolini and Spain under Franco. The Netherlands. The United States. Increasing yields of soy oil. Article from *Business Week*.

Terminology (In the USA the industry prefers to omit the word “bean” and to say simply “soy flour, soy grits, soy milk, soy oil, soy sprouts, etc.” However, when speaking of food uses, the Ministry of Agriculture prefers the term “soya” as in “soya flour, soy grits.” The Soy Flour Association in Chicago sometimes says “soy” and sometimes “soya.” However, in general, the use of the term “soya” in the USA is becoming more and more rare. When speaking of the plant or the crop, or use as feed, Americans use the word “soybean”—spelled as one word, e.g. “soybean growers” or “soybean processors”).

The *Groupement Interprofessionnel des Oléagineux métropolitains* has published its list of the new prices it is willing to pay as of Aug. 9. The highest price, 3,000 francs, is paid for black mustard, soybeans, and poppy seed (*oeillette*).

Conversions: Colza, navette, poppy seed, kale and cabbage seed yield, on average, 8 kg of oil per 100 kg of seed delivered. Sunflowerseed yield 6 kg of oil per 100 kg of seed delivered. Camelina (*Camelina sativa*), black or white mustard seed and soybeans yield 5 kg of oil per 100 kg of seed delivered. Wild mustard and safflower yield 4 kg of oil per 100 kg of seed delivered.

119. De la Borbolla y Alcala, J.M.R. 1946. Industrial usefulness of oleaginous seeds. *Ion (Madrid, Spain)* 6:415-22. \*

120. Floyd, Dolores Boisfeuillet. 1946? Notes about Samuel Bowen and proposed cemetery at “Greenwich” (in 2 columns). Savannah, Georgia. 2 p. Undated. Unpublished manuscript.



• **Summary:** Recently in public notice for a cemetery was a colonial plantation where a great agricultural experiment was accomplished by the owner from old Chinese secrets which he learned while a prisoner of the great emperor K'en-chung [Note: Ch'ien-lung, reigned 1736-1795, during the Ch'ing dynasty.]

Samuel Bowen colonial owner. As young Englishman. In Orient in employ of East India Company in 1750's. East India Company's headquarters in China-Macao [Macau]. Oriental restrictions on the European trade. Political conditions in China: Reign of Emperor K'en-Chung. Curiosity of young Bowen got him in trouble? His friend James Flint with him in China. Arrest of Bowen & Flint. Carried 2,000 miles in interior of China—a radius of where they could have been taken. Length of time a prisoner. What Bowen saw the Mandarins use. Guarded his secrets.

Bowen releases, hurries back to London. His inquiries in London, contact with botanists. Learns (?) about Georgia. Comes to Colony of Georgia. His brother here already. Lands granted them by Satilla (?). Samuel Buys (?) Land from Grey Elliott. Was it named Greenwich before? Did Bowen give it this name? Macao Island. Also bought plantation at Half Moon and on Pipe Maker's Creek.

Samuel Bowen marries daughter of Customs Collector & settles down at Greenwich to raise family and experiment with his secrets from China. Success at once with experiments.

Official endorsement of his work by Gov. Legislature & Merchants. Armed with letter to Franklin ? goes to London & obtains King's patent.

His success in London. Dr. Fothergill and others experiment & endorse. Royal Society honors. Presented to the King. Receives medal, patent & contracts.

Returns to Georgia. Thanks Assembly and obtains (?) his notice of patent & recipe in newspapers. First shipment. Voyages to & from Ga. Whole shipload sago, soy, benny, peanuts. Death of Samuel Bowen. Death of his wife.

The Revolution. Lynch (?) operations (?) there, Burial of Pulaski [Count Casimir Pulaski fought with the Loyalists in the American Revolution. Some think he was buried at Greenwich; others think he died in 1801 and was buried at sea]. Sale of Greenwich. Subsequent owners. Dr. [Samuel] Beecroft inherits secret receipt [sic, recipe] for sago and manufactures it. La Rachipencuillods (?) account. Inventory of Beecroft Estate. Account of sago in *Southern Agriculturist*.

Beecroft's heirs. Subsequent owners of Greenwich. Cemetery project.

Note 1. This unpublished manuscript is in the collected papers of Marmaduke H. Floyd and Dolores B. Floyd, which is collection No. 1308 at the Georgia Historical Society, Savannah, Georgia. This manuscript is in Box 48, folder #647 titled "Bowen and Flint." Dolores B. Floyd died in 1966. This undated manuscript may have been written during

the 1940s, or perhaps as early as the late 1930s.

Note 2. This story was uncovered independently, and in more detail, by Prof. Theodore Hymowitz and Prof. J.R. Harlan and published by in Dec. 1983 them as "Introduction of soybean to North America by Samuel Bowen in 1765" in *Economic Botany* 37(4):371-79. Address: Savannah, Georgia.

121. Floyd, Dolores Boisfeuillet. 1946? A saga of sago and soy. Savannah, Georgia. 15 p. Undated. Unpublished manuscript.

• **Summary:** These are handwritten notes, in outline form, for an article about the life of Samuel Bowen in 15 scenes. In notes written shortly before these, Mr. Floyd had suggested to himself: "Make the article take a slant that helps the advertisers in *Saturday Evening Post* who advertise goods made from soy & sago."

Introduction: 1. Erroneous idea prevailing about New England sea captain and his bag of beans as a curiosity, in 1804. 2. About 40 years before that date soy had been brought to this country, not as idle curiosity but objectively for cultivation for food value. 3. During the whole decade before the American Revolution was an article of regular export annually through the port of Savannah in the British province [not colony] of Georgia. 4. Not, as a reflection on U.S. Dept. of Agriculture, but cited only to show how generally unknown are the facts. 5. Romance of its introduction & the Marco Polo-like travels that brought about its introduction into this country.

Scene I—Macao [Macau]. 1. English East India Company ship in harbor with Bowen on board. Year 1763. 2. Reverse of adventure stories introducing hero on an East Indiaman outward bound from England on adventure. Bowen, a young man in the employ of the East India Company, is homeward bound after an astounding adventure in the depths of China where no Englishman had ever been before, and where he came upon knowledge of certain Chinese secrets of inestimable value. 3. Describe Bowen's view from the ship of the harbor. a. Contrast size structure of the East Indiaman with Chinese junks engaged in the China trade. b. The crescent [sic, crescent] shaped prada (?). c. The factories of the merchants with the hills of the peninsula rising above the town. The buildings of the town quaint combination of Oriental and European features. d. Beyond the town the barrier wall of China. All of this familiar ground to him he was seeing now for the last time for he was being forever banished by imperial decree of the Manchu emperor Chi'en Lung. (Note: Ch'ien-lung, reigned 1736-1795, a long and very influential reign during the Ch'ing dynasty {early 1600s to 1911}, when China was controlled by the Manchus, who came from Manchuria). 4. Relate Bowen's recent emergence through the great gate of that wall into Macao, describing the unique dress and haircut in which he appeared upon his arrival there at the English factory, after 4 years

imprisonment, unrecognized, and asking for James Flint. Learns that Flint, also banished, has departed from China, and that he too must leave at once on the East Indiaman in the harbor which is on the point of sailing. 5. Here on shipboard, outfitted in European dress by friendly persons at the English factory in Macao. Winds & tide right, sails set & ropes adjusted, the East Indiaman getting under way to sea. Laden with cargo of produce of China, mainly bales of silk; & from the hold come wafts of aromatic goods; teas, crude camphor, rhubarb and the like. 6. Bowen as an employee of the East India Company, was conversant with details of the China trade, had been allowed personal trade during the years of his service, and his gains totaled a worthwhile sum. However, even though the China trade was now closed to further profit, his spirit was buoyant over the old Chinese secrets he was carrying away and his expectation of the greater wealth that they would eventually bring to him.

Scene II (cutback)–Bowen's adventure with Flint in China. 1. It was directly due to the absolution of the powerful Chinese emperor Ch'ien Lung that Bowen became another Marco Polo in China and obtained these old Asiatic secrets which he was now carrying away to the New World. 2. From Macao four years before Bowen had sailed with James Flint on an official mission to the northern port of Tien Tsin [Tientsin, pinyin: Tianjin] to present to the emperor a petition from the Court of the East India Company. The outcome became the mid-century (??) historic 'incident' in the relations of the East India Company's China trade. It created a political farore [sic, furor] throughout the length of China, involving officials from the emperor down to minor office holders, and brought tragedy to the East India Company's employees at Macao, and especially to Bowen and Flint. 3. James Flint, who he was: a. nationality. b. his youth in China. c. his travels in India etc. d. his position in 1759 with Company. e. his character evidenced by trust placed in him to go on errand to emperor. 4. Year 1759. Arrival of Bowen & Flint at Tien Tsin [Tientsin / Tianjin]: a. encounter with port authorities. b. Flint threatens to go to foot of great wall. c. port authority names price for his bribe. d. Bowen consents because of necessity: (1) having come this far, (2) need of relief from merchants oppression at Canton, (3) need for plea to open other ports. e. Explanation of conditions at Canton and its relation to Macao. 5. Bowen & Flint taken to custom house at Tien Tsin & its Joss House [Note: a Chinese temple or shrine]. a. visits of important officials. b. hospitality of Chinese. c. Week's delay for emperor's answer. d. Soldiers kept (?) away. e. Flint notified of land trip to be taken. f. Flint sends order to captain of ship before he sets out overland. g. Ch'ien Lung, who he was & his works. 6. Bowen & Flint's travel from Peking to Canton. a. route by Canal, river, & roads: (1) Tien Tsin by grand canal to Nanking. From Nanking by river Yangtze Kiang [Chang] to either: (a) about Kiukiang [Jiujiang] where the tributary Kan River [Gan] could be followed southward, & from there overland through

the Mei-ling Pass, to the valley of the Pei-ho River, & by that river into Canton, or (b) to Hankow [Han-k'ou / Hankou] where tributary Siang [Xiang] could be followed, & from it overland through Cheling Pass, through the Nanling, to valley of Pei-kiang, the river Pei-kiang [Pei / Bei river] into Canton. This more probable because it is the 'easiest route' through the Nang-ling [Nan Ling or Nan Shan, a mountain system in southern China roughly separating Guangdong province and Guangxi Zhuangzu from Hunan and Guizhou provinces]. Address: Savannah, Georgia.

122. Floyd, Dolores Boisseuillet. 1946? A saga of sago and soy (Continued–Document Part II). Savannah, Georgia. 15 p. Undated. Unpublished manuscript.

• **Summary:** Continued: Scene III (cutback)–Bowen on board East Indiaman en route home to England: 1. Perils of voyage (the route, length of time, bad food & attendant disentry [dysentery] or flux). 2. The wet and mouldy bread & meat illustrate Bowen's idea for alleviating this condition, & spurs him on in his eagerness to develop his scheme. 3. Bowen in advance of his age. It was in days before vitamins were known. 4. Food values of soy & sago as balanced rations.

Scene IV–Deptford. 1. Arrival of the East Indiaman at dockyard where East India Company maintaining its wharves for unloading cargoes of the China trade. 2. Bowen setting out for London.

Scene V–London: 1. Bowen at East India Company's House (Location of House, description of House, uses of the house). 2. Bowen gets release from company's employ in order to follow his scheme for soy & sago. 3. Settles his accounts with company: (a) How employees of company had salary, perquisites & private trade. Often to extent where they could buy ships of their own for investment & charter them to the company, (b) Bowen's idea was to put his investment into soy & sago, and they would bring wealth, (c). Consults Dr. Fothergill about agricultural site in British American colonies. Decision about Georgia reached by: (1) Comparison of latitude of China, (2) Consultation of Samuel Bowen senior's map & who he was, (3) Silk culture flourishing in Georgia, (4) Recent treaty with Spain a safety to commerce.

Scene VI–Savannah. 1. Arrival of Bowen accompanied by his brother William, a fat purse, and supply of soybeans and plant from which to produce sago. 2. Customs officers at Port of Savannah naturally his first contact upon arrival by ship; & Bowen had much knowledge of the customs offers. [officers?]. 3. Personal intimacy develops with customs collector. 4. Practical and energetic Bowen promptly invests part of his small fortune acquired [from] the China trade of the East India Company in purchase of a plantation and six negro slaves; and acquires as his father-in-law the Collector of the Port of Savannah. 5. Bowen's marriage & its advantage (a) Name of his wife and date of marriage, (b)

who his father in law was (biographical), etc., (c) father in law in position to expedite matters in Bowen's export of soy & sago, (d) father in law as part of official force at Savannah, was a recommendation for recognition of Bowen in the community, (e) Bowen gets commission of lieutenant in militia, (f) Bowen thus a member of port collector's family, settled as a planter with his background of experience in British commerce brought him to the forefront as a person of consequence at his outset at Savannah. 6. The port of Savannah, in which Bowen was to contribute an epochal phase of American commerce, was also capital of the Province of Georgia. The crown officers and other leading men in public office there followed the more gainful pursuits as planter-merchants, and into their acquaintance Bowen was readily introduced. They promptly took cognizance of the value to the port that would be derived from his scheme for the production and exportation of soy and sago.

Scene VII–Greenwich: 1. Bowen's plantation where historic experiment was made. 2. Its location in relation to Savannah. 3. Date & other details of its purchase. 4. Description of site. 5. Co-incidence of neighboring plantation being named Deptford, & other Tattnall & the Tattnall incidence [incident] in China. 6. Origin of name Greenwich for plantation?

Scene VIII–Macao: 1. Bowen adds island to his land holdings at Greenwich & names it Macao. 2. What fancied resemblance had it for him to place of that name in China?

Scene IX–Coastal Georgia: 1. Bowen & brother William apply for lands far down coast. Bowen's other land transactions.

Scene X–Greenwich plantation: 1. The experiment with soy & sago. 2. The planting. 3. Erecting starch making apparatus and oil pressing machine. 4. First harvest of soy beans and plant for sago making. 5. Son born, named James Flint Bowen. 6. Slaves trained in: (a) pressing oil from soy beans, (b) making starch from sago, & by-products: tapioca & vermicelli.

Scene XI–Savannah: 1 Bowen exhibits his produce of soy and sago before Sir James Wright, governor, other officials, and merchants. 2. Their public endorsement of his experiment: (a) Wright's sworn testimony, (b) sworn testimony & signature of merchants, (c) who some of those merchants were. 3. Official legislative recommendations of him to the Lords of Trade & Plantations to secure a patent for him for his process: (a) the legislative document.

Scene XII–Bowen sails from Savannah for England: (a) Triumphant with his soy & sago, (b) official documents from Georgia, (c) Father-in-law speeds him on errand.

Scene XIII–London. 1. Arrives to obtain King's patent. 2. Bowen introduced to Lord–by Grey Elliott. 3. Bowen contacts Fothergill. 4. Experiments of Society of Arts with Bowen's sago. 5. Society's endorsement. 6. Medal from Society. 7. Granted patent. 8. Presented to king & receives award from king's privy purse. 9. Awarded contracts to

supply navy & merchant ships.

Scene XIV–Sails for home: 1. Loss of father while in England. 2. Who his father was & his work as having bearing on Georgia & perhaps maps of China?

Scene XV–Savannah–Triumphant return. 1. Father in law's pride over success of son in law. 2. Bowen thanks Georgia assembly & others. 3. Newspaper account of patent. 4. First shipment of soy & sago. 5. So after all, it was due to the Chinese emperor Ch'ien Lung [Ch'ien-lung].

Note 1. This unpublished manuscript is in the collected papers of Marmaduke H. Floyd and Dolores B. Floyd, which is collection No. 1308 at the Georgia Historical Society, Savannah, Georgia. This manuscript is Box 48, folder #647 titled "Bowen and Flint." Dolores B. Floyd died in 1966. This undated manuscript may have been written during the 1940s, or perhaps as early as the late 1930s. Mrs. Floyd was apparently the first person to discover that Samuel Bowen introduced the soybean to Georgia and North America in the 1760s. She gives the date of introduction as "about 1764." Unfortunately, she never published her findings. She also never mentions Henry Yonge, who first grew Bowen's soybeans in Georgia in 1765.

Note 2. This story was uncovered independently, and in more detail, by Prof. Theodore Hymowitz and Prof. J.R. Harlan and published in Dec. 1983 them as "Introduction of soybean to North America by Samuel Bowen in 1765" in *Economic Botany* 37(4):371-79.

Talk with Prof. Ted Hymowitz. 1999. Sept. 18. He looked at all issues of the *Saturday Evening Post* from July 1935 to March 1953; this article was never published in that magazine. The name of the property adjacent to Greenwich was Bonaventure, not Deptford; both properties are now cemeteries. The two ports near London (London, on the river Thames, is not a port) where the British East India Company ships docked are Downs and Cowes (pronounced KO-wass), not Deptford. In 1765 in Georgia there were 12 parishes, not counties. The Bowen who made maps was Emmanuel Bowen, and he had a son who followed him in the map-making business. Neither of them was related to Samuel Bowen. Tattnall is the name of an old Georgia family; they were there before Samuel Bowen. Ted has never heard of the Tattnall incident in connection with China. Address: Savannah, Georgia.

123. Gaspar, F. 1947. Cultivo de la soja [Cultivation of soybean]. *Agricultura (Madrid, Spain)* 16(180):201. April. [Spa]

• **Summary:** Gives instructions for cultivating the Early Yellow variety of soybean in Spain. In southern Spain, planting time is April, when the frosts are over. The furrows should face the south so that the new plants have protection from the north wind. Rows should be spaced 40 cm apart, and holes in each row should be 25 cm apart. Place 2 seeds in each hole to a depth of 3 cm and cover with earth



without pressing. Two irrigations are generally sufficient; no irrigation must be done after flowering. Soybeans can be used for human food, and they are also ground into flour and mixed with other products for feeding livestock. Address: Ingeniero agrónomo.

124. Brillmayer, Franz A. 1947. Geschichte der Einfuehrung der Soja in Deutschland [History of the introduction of the soybean to Germany (Document part)]. In: F.A. Brillmayer. 1947. Die Kultur der Soja in Oesterreich. Vienna: Scholle-Verlag. 97 p. See p. 18-20. [Ger]

• **Summary:** Climatically, Germany is not well suited for growing soybeans. After World War I, the Germans imported ever larger amounts of soybeans from Manchuria to use for oil. The defatted soybean meal (*Extraktionsschrot*) was used as a high protein livestock feed. Under these circumstances the value of the soybean was full appreciated and cultural trials were started.

One of the first soybean breeders was the seed wholesaling firm of August Bitterhoff Sohn in Berlin, which introduced both yellow seeded soybeans for use as food and tall-growing types with black seeds for fodder and hay. By 1925 the Bitterhoff catalog contained cooking instructions for soybeans as well as exact instructions for cultivating soybeans.

Entirely in secret was the work of Prof. Dr. G. Riede, Director of the Institute for Crop Cultivation and Plant Breeding (*Pflanzenbau und Pflanzenzüchtung*) at the University of Bonn. After many years of efforts in secret, he introduced his new varieties and only after he met with success did he start to publish his results. His work is the source of the Diekmann cultivars, especially the green-yellow types.

Soon after the end of World War I, in about 1922, the agricultural experiment station at Rastatt / Baden got involved with soybean breeding and introduced the Rastaetter Black (*Rastätter Schwarze*). Dr. Heinz in Halle had better success. Various other people and institutions got involved, such as W. Holzweissig in Westerrade (Holstein). At the Kaiser Wilhelm Institute in Muenchenberg / Mark various researchers crossed soybeans (according to Dr. Rudolf).

At about this time Dr. Lene Mueller (today Mrs. Herb-Mueller) made several world trips to study soybeans and became quite famous. When she visited Brillmayer in 1927-28, she had just returned from being shipwrecked; she was rescued from the sea off of Java. She worked in her experimental nurseries (*Versuchsgärten*) in Mannheim, later went to Russian and then to the Balkans. From her work we can trace the "L.M." (Lene Müller) varieties of the Reich soybean breeding program in Giessen on the Lahn [river].

For some years the Austrian soybeans Platt Yellow Giant were grown in Germany—as in 1932. In 1935 A. Diekmann at Heimbürg in Harz began soybean breeding and took over

the breeding material of Dr. G. Riede in Bonn. He produced a number of good varieties.

The organization of soybean growing in Germany was carried out by the Division of Soybean Culture of the Corn Growing Society (*Maisanbaugesellschaft*) in Berlin and the price supported through subventions from industry. In spite of this, the soybean area in Germany never reached more than 300 hectares; the yields were too low.

Nevertheless the importance of the soybean was understood and it was realized that despite the low yields it made sense to grow soybeans when one considered how much valuable protein they produced per unit area. So in order to move forward in developing early maturing, good yielding varieties, the Reich's Food Ministry intervened, since through the agency of the state the goal could be achieved faster than through private initiative. This is about 1935 the Reich Soybean Breeding Program (*Reichssojajüchtung*) was established and affiliated with the Institute for Crop Production and Plant Breeding at the Ludwigs University in Giessen. Prof. G. Sessous became the director and was later succeeded by state director of breeding O. Richter. The basis upon which they proceeded and built were the cross-bred hybrids (*Kreuzungshybriden*) of Mrs. Dr. Herb-Mueller, the so-called LM-line. The cross between two populations of the soybean Small Yellow Hungarian split up into so many varieties that the breeding nursery at Giessen near Bad Nauheim looked like a variegated chessboard. Several hundred varieties were at hand, all different. My variety Giessen 108 came from this cross.

A female student of Prof. Sessous, Ms. Ing. Kläere Schiller, investigated many physiological problems, then years later "introduced" the soybean to Spain.

"The Radicin Institute, W. Holzweissig in Westerrade, Holstein, made excellent inoculant and studied it.

"The present situation will surely force Germany to continue work on soybeans despite unfavorable climatic conditions; it can secure carbohydrates from potatoes, but lacks oil / fat and protein, which the soybean can deliver most efficiently even when yields are low.

Note: There is no mention of Germany's massive imports of soybeans from the Balkans. Address: Braunsdorf—Vienna, Austria.

125. Rodrigo, P.A. 1947. Soybean culture in the Philippines. *Philippine J. of Agriculture* 13(1):1-22 + 5 plates. Third quarter. Summarized in Soybean Digest, May 1948, p. 41. [14 ref. Eng]

• **Summary:** Contents: Introduction. Description and history. Climatic and soil requirements. Varieties. Propagation. Preparation of the soil. Fertilizers and lime. Inoculation. Planting. Care of the crop. Harvesting and production: For day, for seed. Cost of production. Uses of soybeans. Diseases. "In the big cities in the Islands, many of the soybean products like soy sauce or toyo, tokua, tajuri

[fermented tofu], tojo [soymilk curds], miso, etc. are becoming more popularly used by the Filipinos, and will be more so as their nutritive values become more fully realized. Already, in some sections of the country where soybean is being grown, the seed is used either as a green or as a dry vegetable. The dried bean is roasted and is eaten offhand or is used in adulterating coffee, and the bean in the dough stage is boiled and eaten like peanut” (p. 2).

Note 1. This is the earliest English-language document seen (Oct. 2011) that uses the word *tajuri* to refer to fermented tofu.

Table 1 shows annual imports (in kg) of soybeans and soybean products into the Philippines from 1929 to 1940, including dried beans, soy sauces, soybean meal, tausi (fermented black soybeans, salted), paste (miso), and total. By far the leading import (by weight) from 1929 to 1937 was dried soybeans. In 1929 some 4,574,497 kg were imported. This figure rose gradually (with ups and downs) to a peak of 5,660,575 kg in 1937, then fell sharply to only 237,666 kg in 1940. Soybean sauces were the No. 2 import, starting with 606,231 kg in 1929, rising to a peak of 1,441,563 kg in 1932, then remaining above 1,000,000 for most years thereafter. Imports of soybean meal started in 1935 with 660,699 kg; they reached a peak 1,023,303 in 1936 (the next year), then remained near 1,000,000 thereafter. Tausi was first imported in 1940, the amount being 151,571 kg.

Table 2 shows the value of these items (in pesos). In 1940 the imports of greatest value were soy sauces (120,346 pesos), soybean meal (50,682), and tausi (20,280).

“In the Philippines, while the plant has been under cultivation since the Spanish regime [1571-1898], it has not gained much headway due mainly to the lack of a variety suitable for commercial planting, and perhaps due to want of interest among farmers” (p. 4-5). The Philippine Bureau of Plant Industry has, to date, introduced more than 200 soybean varieties to the Philippines from the USA, China, Japan, Hawaii, Java, and India, but it presently recommends only a few varieties for commercial planting. These include Ami, which has long been cultivated there and is well adapted to the varied soil and climatic conditions.

Based on the results of a number of years’ trials in different regions of the Islands, the following varieties have been found to be productive: Yellow Biloxi Hybrid (introduced from Hawaii in 1936), Mis 28 E.B. Str. 3910 (introduced from India in 1937), Mis 33 Dixi (introduced from India in 1937), Head Green (introduced from the USA in 1935), and American Black. All of these varieties are good for May and June planting, and all but Yellow Biloxi Hybrid are good for September to December planting (dry season).

“In the Philippines, the green but fully developed pods are harvested, and the seed is cooked and eaten in practically the same way as lima bean or patani... In Lipa, Batangas, soybean in the dough stage is boiled in the pod and sold and eaten offhand” like peanuts. The more common soy products

made in the Philippines are soy sauce or *toyo*, tokua [tofu], tausi [fermented black soybeans], and miso. “Soybean milk is being manufactured by the Bureau of Plant Industry in a limited scale and a big modern firm has started putting soybean milk and other products in the local markets” (p. 15-16).

Note 2. This is the earliest English-language document seen (Nov. 2011) that uses the word *tausi* to refer to fermented black soybeans. Address: Chief, Horticulture Research Section, Bureau of Plant Industry.

126. Barbos, I. 1949. Alguns aspectos do problema das fertilizações orgânicas dos solos planálticos [Some aspects of the problem of organic fertilizers on plateau soils]. *Agronomia Angolana* 2:45-57. [Por; eng]\*

• **Summary:** The plateau soils in southern Angola lack organic matter. A comparison was made between green manuring, dunging, and artificial manuring. Four crops, including soybeans and lupins, were used for green manure. The author concludes that green manuring should be practiced only where it is difficult to obtain the necessary quantity of animal manure for the cultivated area.

127. Portugal: New U.S. domestic soybean variety. 1949?

• **Summary:** Sources: Bernard, R.L.; Cremeens, C.R. 1970. “Evaluation of maturity group 00 to IV named varieties of the U.S.D.A. soybean collection.” Urbana, Illinois: United States Regional Soybean Laboratory. iii + 31 p. Dec. RSLM 244. (A revision of RSLM 205, 1960). See p. 12-13. “Variety: Portugal. Prior designation: --. Source: Unknown (obtained from USDA, Beltsville, Md.) Year named or released: by 1949. Developer or sponsor, year selected: Unknown.”

Bernard, R.L.; Juvik, G.A.; Nelson, R.L. 1987. “USDA soybean germplasm collection inventory.” Vol. 1. INTSOY Series No. 30. p. 16-17. Portugal is in the USDA Germplasm Collection. Maturity group: 18. Year named or released: by 1949. Developer or sponsor: Unknown. Literature: 18. Source and other information: Unknown origin, possibly from Portugal. Received at Urbana from the USDA, Beltsville, Maryland, in 1949. Prior designation: None.

Note from Dr. Richard Bernard, Univ. of Illinois. 1999. Sept. 9. The seeds of Burrell are a little large (22 gm per 100 seeds) for grain-type soybeans, and Burwell is black—so use written sources to decide whether it is a vegetable type or not. Address: USA.

128. *Field Crop Abstracts*. 1950. Portugal: Seed. April. p. 125 (Abst. #0682). [1 ref]

• **Summary:** Seed of the following crop plants is offered as 1950 exchange material by Estação Agronómica Nacional, Sacavém, Portugal. One of the plants is the soybean (*Glycine soja*, 46 varieties).

129. Côrte-Real, A. de O.T. 1950. Influência da duração relativa do dia e da noite no crescimento e desenvolvimento de algumas variedades de *Soja hispida* Moench [Influence of the relative length of day and night on the growth and development of some varieties of *Soja hispida* Moench]. *Revista Agronomica (Lisboa, Portugal)* 31:126-52. [26 ref. Por]\*

• **Summary:** Soybean varieties react differently to short photoperiods. This reaction depends not only on the time at which the treatments are given, but also on the state of maturity of the plants. Short photoperiods induced premature flowering, depending on the stage of development of the plant at the beginning of the treatment and on the precocity / earliness of the variety. Plant behavior was noticeably affected during the treatments, the plant height and the length to breadth ratio of the leaves being affected. The number of pods and seeds and their weight were also affected, these being strongly correlated with the precocity of the variety. The weight of plants is greatly influenced by treatment with short photoperiods after an already large vegetative development.

130. Hedrick, U.P. 1950. A history of horticulture in America to 1860. New York: Oxford University Press. xiii + 551 p. Illust. Index. 24 cm. [213\* ref]

• **Summary:** Concerning the soybean, page 90 notes that Benjamin Franklin, who had corresponded with John Bartram, sent him various seeds in 1769. In 1770 Franklin sent him some “some Chinese Garavances, with Father Navaretta’s [Navarrete’s] account of the universal use of the cheese made of them, in China.”

Hedrick then observes: “‘Garavance’ is a Spanish name for the chick pea [or garbanzo bean], but it is doubtful if the Chinese had the chick pea, *Cicer arietinum*, from Spain; however, it is well known that they long have made a sort of cheese out of the soybean, *Glycine Max*. Can it be that Benjamin Franklin introduced the soybean, now of so great value, in America?”

Also contains information on the following: Johnny Appleseed (born Jonathan Chapman in 1774 in Leominster, Massachusetts; p. 310-11), John Bartram (1699-1777, Darby, Kingsessing, and Philadelphia, Pennsylvania; see index), William Bartram (son of John Bartram, 1739-1823, Pennsylvania; see index), Samuel W. Cole (Chelsea, Massachusetts; 247, 489), Peter Collinson (1694-1760, FRS, gardener and botanist of England, p. 85-89, 112, 153), Henry Leavett Ellsworth (1791-1858, 1st U.S. Commissioner of Patents, started seed distribution; p. 254, 371), Andrew H. Ernst of Ohio (1796-1860, German-born nurseryman and pomologist, who conceived the plan of the Spring Grove Cemetery in Cincinnati, p. 314), John Fothergill (1712-1780, English physician and botanist, patron of William Bartram; p. 91), Benjamin Franklin (1706-1790; p. 81-83, 86, 90, 117, 149, 468, 472, 499, 511).

131. Manas y Cruz, M.; Rozul, Juan B. 1952. Plant production and exploration. In: 1952. A Half Century of Philippine Agriculture. Manila, Philippines: Liwayway Publishing. xix + 463 p. See p. 154-69, especially p. 157-58. Published for the Bureau of Agriculture Golden Jubilee Committee by Graphic House. [18\* ref. Eng]

• **Summary:** “Only a few species of our cultivated plants are indigenous to this country... Plant introduction work in the Philippines was started as far back as the Spanish regime... Between 1521 and 1815 approximately 200 species of economic plants of American origin were introduced into the Philippines.” Plant introduction became a major project of the Bureau of Agriculture after it was established in 1902. Its first chief, F. Lamson-Scribner, laid the basic foundation for the introduction and exploration work.

Direct introduction of hybrid strains, such as soybeans, has saved much time compared to “the development of native varieties by the processes of selection and hybridization. For instance, it must have taken its American breeders from 7 to 12 crop seasons to produce the hybrid strain of soybean, Mis 28 EB strain 3910. When tested here for 2 or 3 crop seasons, it proved to be a very suitable variety of soybean for commercial growing in the Philippines.”

The section titled “Vegetable Crops” notes: “In general, the introduction of vegetable crops has been very successful. Practically all the vegetable crops grown commercially here [including soybeans]... are the products of plant introduction work... Of the soybean, *Glycine max*, we are now commercially growing introduced varieties and strains both suitable for the rainy and dry season culture. Of over a hundred varieties and strains introduced from China, Japan, U.S., Hawaii and India, only few have been selected as the most adapted to certain regions of the islands. The most successful introductions recommended for commercial planting are: Mis 33 Dixi, Head Green and Mis 28 EB Strain 3910, all adapted to rainy and dry season cultures, and Yellow Biloxi hybrid, only adapted to rainy season culture. They gave yields of from 15 to 25 cavans of seeds per hectare” Note: 1 cavan, a unit of weight in the Philippines = 44 kg or 50 kg. Thus, 15 to 25 cavans/ha = 0.66 to 1.25 tonnes/ha.

“Unfortunately, our detailed Plant Introduction records of the past years were practically all destroyed or lost during the last World War operations, so it has been quite difficult to reconstruct them from memory or from whatever literature the authors were able to ransack within the short time available.”

On page 398 is an ad for Cenvoco Vegetable Lard, made by the Central Vegetable Oil Manufacturing Co. of Manila. This shortening was probably made from coconut oil rather than soy oil.

Note 1. This is the earliest English-language document seen (Feb. 2008) that uses the term “Vegetable Lard” to refer



to vegetable shortening.

Note 2. This book was written by men of the Philippine Bureau of Agriculture and its successors, the Bureau of Plant Industry, the Bureau of Animal Industry, and the Fiber Inspection Service. Address: Bureau of Plant Industry.

132. Merino, Gonzalo. 1952. Introduction. In: 1952. A Half Century of Philippine Agriculture. Manila, Philippines: Liwayway Publishing. xix + 463 p. See p. ix-xix + 8 unnumbered pages of photos of directors of the Bureau of Agriculture, the Bureau of Plant Industry, and the Bureau of Animal Industry.

• **Summary:** Gives a good history and overview of agriculture in the Philippines, and of the Bureau of Agriculture, the Bureau of Plant Industry, and the Bureau of Animal Industry. Contents: Introduction. Exit the Spaniard, enter the American (The archipelago was visited by Portuguese navigator Magellan in 1521. The Spanish founded Manila in 1571. Spain ceded the islands to America for \$20 million in 1898 after the Spanish-American War. The Bureau of Agriculture was founded by Americans in 1902). The Commonwealth years (from 1935). Agriculture under the Japanese (who occupied the country during World War II). Postwar agriculture. Our agriculture in terms of pesos (soybeans are listed as one of 20 major field crops [not including fruits] worth a total of more than 200 million pesos in 1938). Farmers have changed for the better. Youth and agricultural education. Other government agricultural services. The farmer and today's world. Address: Director of Plant Industry.

133. Ruiz, Hipólito. 1952. Relación histórica del viaje, que hizo a los Reynos del Perú y Chile el botánico don ... en el año de 1777 hasta el de 1778, en cuya época regresó a Madrid. Segunda edición, enmendada y completada en todo lo que le faltaba, según la copia definitiva, inédita, del Manuscrito de D. Hipólito, hallada y copiada en el Departamento Botánico (Historia Natural) del Museo Británico, por el Dr. Jaime Jaramillo-Arango [Historical account of the voyage, which was made to the Kingdoms of Peru and Chile by the botanist Hipólito Ruiz in the year 1777, until 1778, at which time he returned to Madrid. 2 vols. 2nd ed., by Dr. Jaime Jaramillo-Arango]. Madrid, Spain: Real Academia de Ciencias Exactas, Físicas y Naturales de Madrid. xlv + 526 p. See vol. 1, p. 201. Illust. Talleres Gráficos de Cándido Bermejo. [1 ref. Spa]

• **Summary:** Hipólito Ruiz, the illustrious botanist from Spain, traveled to Peru in 1777-78. Volume I of this work is the text, and volume II is maps and indexes. Chapter 31, titled "Description of the village of Sayan," states (p. 201) that he found in Huamalíes [a province in the department of Huanuco in central Peru], cultivated, a plant whose name at that time was *Dolichos soja* Linn. However, there are question marks before and after the words "soja

Linn" indicating (apparently) that Ruiz was unsure of the identification of this plant species. Three other plants mentioned on p. 201 have similar pairs of question marks, indicating uncertainty, in their scientific names.

Note 1. If the soybean were, in fact, growing in Peru in 1777-78, this document would contain the earliest date seen for the soybean in Latin America or the equinoctial regions.

Note 2. *Merriam-Webster's Collegiate Dictionary* (1998) defines equinoctial (pronounced EE-kwu-nok-shul, and first used in 1545) as "relating to the regions or climate on or near the equator." Address: Spain.

134. Lo, K.S. 1953. The story of soybean milk. *Far Eastern Economic Review*. Oct. 29. p. 568-69.

• **Summary:** In 1936 the author, a resident of Hong Kong, happened to be in Shanghai, where he read a newspaper article about a talk given by a Dr. Webb [actually by Julian Arnold; see letter from K.S. Lo, 3 Nov. 1989] on the nutritional value of the soybean. He was very impressed. A year later, the invasion of China by Japan brought a steady flow of refugees into Hong Kong, and with them problems of food supply and malnutrition. Lo recalled the article he had read about soybeans and began to think about the idea of making soybean milk to be sold to the working classes at the lowest possible price. He took his idea to Hong Kong's new director of Medical Services, Dr. P.S. Selwyn-Clarke, who was known for his progressive ideas, his untiring energy for work, and his concern for the poor. "He at once offered me his moral support were I to embark on this scheme. It was through his personal encouragement and moral support that eventually I was able to bring it to fruition. He was also later to become my strongest supporter and advocate of soybean milk. A modest factory was built at Causeway Bay and it was opened for business in March, 1949 [actually 7 March 1940]. The equipment used was simple and crude and the method adopted for the making of this milk was modeled after the dairy industry. On the day of its opening, I can still remember that the total business done was 9 bottles sold."

"After two years of hard struggle, we were beginning to make some headway in our sales. At this point the Pacific War intervened and brought our activities to a stop. The factory was occupied by the Japanese, and what little equipment we had in it was lost. After the war was over we tried to restart it, and once again Dr. Selwyn-Clarke came to our rescue."

"Much to our surprise, the post-war public took to soybean milk without being coaxed. All of a sudden it became very popular, especially among the working classes." A larger and more modern factory was built at Aberdeen, and completed in 1950. After this a product that did not require refrigeration was developed; sales increased ten-fold. "Today we are able to produce from 3000-5000 cases (24 bottles each) of soybean milk a day; distributed over the territories of Hongkong, Kowloon, New Territories and Macao with a

fleet of 18 trucks.”

The company has “succeeded in producing a nutritious and wholesome food and putting it within the reach of the masses.” The price has been kept down to 20 cents (H.K.) per bottle. The soybean milk is also extremely high in vitamin B, and because of the large amount consumed by the public daily, this has a beneficial nutritional effect. The company is now also working actively with UNICEF [United Nations International Children’s Emergency Fund] in promoting similar projects in Asia. “Already we know for certain that a factory similar to ours has been put up in Djakarta by the Indonesian Government in conjunction with UNICEF.”

“We are, however, not resting on our laurels. Our technicians have been busy experimenting on condensed soybean milk, which we hope to put on the market sometime next year. Then we will move onto soybean milk powder, and other forms of soya food products.”

Note 1. This is the earliest document seen (April 2004) that describes UNICEF’s awareness of the attractions of Vitasoy as a high protein soy beverage for use in developing countries, and joint efforts by UNICEF and Vitasoy to promote similar products in Asia. Note 2. When Vitasoy was launched in March 1940, it was fortified with vitamins, calcium, and cod liver oil. Now, in 1953, it appears not to be fortified at all.

135. Almeda, Alberto Fontana. 1954. [Condensed milk of corrected composition]. *Spanish Patent* 217,451. Jan. 12. (Chem. Abst. 50:3673fg). [Spa]\*

• **Summary:** Soybean and other oils are emulsified in skim milk by an agitation process which forms globules of similar size to those of cream in milk. Sugar is then added and the mixture is condensed before hermetic packaging. Cholesterol is thus eliminated.

136. Valignano, Alessandro. 1954. Sumario de las cosas de Japón (1583). Adiciones del Sumario de Japón (1592). Editados por José Luis Alvarez-Taladriz [Summary of the things of Japan (1583). Additions to the Summary of Japan (1592), edited by José Luis Alvarez-Taladriz]. Tokyo, Japan: Sophia University. xix + 205 p. + 346 p. 26 cm. Series: Monumenta Nipponica Monograph No. 9. [230 ref. Spa]

• **Summary:** This book consists of two separate books by Valignano bound as one; each is paginated separately. In the 1st book, on page 93, the author mentions that he bought the necessary provisions, rice, miso, dried fish, etc. Footnote 240 gives a long definition of *misso* (sic, miso) in Italian from *Saverio Orientale*, by Bernardino Ginnaro (1641, Naples).

An appendix near the end of the 2nd book (published in 1592; see p. 317-330) begins with a Treatise on how they own land and calculate rents in Japan. It starts (p. 318) with a reference to “Principio [1601-1603], c. 6.” In a long footnote on p. 320, he states: “To measure rice, wheat, barley, *Goma*

[sesame seeds, used to make oil], *Mame* (see below), *Abura* (vegetable oil), *Saque* [saké], etc. they use certain measures such as the shaku, go, sho, to, koku, etc.” Looking in more detail at the entry for “*Mame*,” after the word, we read (in square brackets), the Chinese character for “bean” followed by the Portuguese words ‘Feijoes, ou graos de Iapao’ ib. [VJP 150],...” This means that the word “*Mame*” means beans or Japanese beans. They are described in the VJP which, according to the abbreviations section at the front of this book (p. xix) means “Vocabulario de la Lingoa de Iapam. [Nagasaki, 1603-1604]. This is the famous first dictionary of Japanese in a European language, Portuguese, compiled by the Jesuit mission in Japan, and published by the Jesuits in Nagasaki in 1603-04. If we look on page 150 of that dictionary, we do indeed see: “*Mame*. Feijoes, ou graos de Iapao.”

Note 1. Today, the word Japanese “*mame*” has two meanings: (1) Beans [generically, all types]. (2) A soybean. When the word *mame* is the first part of a compound word, it usually refers specifically to the soybean: *mameabura* is soybean oil—more commonly called *daizu abura*; *mamekasu* is soybean meal—more widely called *daizu kasu*; *mamemaki* is the ceremonial scattering of roasted soybeans at Setsubun. Therefore: It cannot be stated clearly that the soybean is mentioned in this book, or that the concept of a soybean, apart from beans in general, was clear to the author. However given this context of how foods are measured, we think it is more likely that he was referring to beans in general than to one particular type of beans. If he wanted to refer specifically to soybeans, they are clearly mentioned as *Daizzu* in the VJP dictionary which he cites! *Daizzu* [Daizu, the Japanese word for soybeans] are defined as: “*Mame*. Graos, ou feijoes de Iapao.”

Note 2. *Principio* is an abbreviation (see p. xvii) that refers to a book titled *Libro Primero del principio y progreso de la Religion christiana en Jappon...* by Padre Alexandro Valignano of the Company of Jesus, 1601. Manuscript in the British Museum.

About the author: On p. 2-3 we read: The padre Alessandro Valignano (ca. 1539-1606) of the Society of Jesus [Jesuit] visited Japan three times, 1579-1582 (during the rule of Oda Nobunaga, who died in 1582), 1590-1592 (during the rule of Toyotomi Hideyoshi, who died in 1598), and 1598-1603 (during the rule of Tokugawa Ieyasu, who died in 1616). The fruit of his first trip was the *Sumario*, published in 1583, of his second trip was the *Adiciones del Sumario*, published in 1592, and of his third trip was the *Apologia de la Compañia de Jesús de Japón y de la China* (1598) and the *Principio y progreso de la religión cristiana en Japón*.

His three visits correspond to three very important periods in Japanese history, in the transition from decentralized feudalism to centralized feudalism or from feudal anarchy to feudal order: the period of Azuchi

(Nobunaga), of Momoyama (Hideyoshi), and of Tokugawa (Ieyasu). His writings capture magnificently the history of these 3 periods.

Because he is a Christian and a Jesuit father (Roman Catholic), his main interest is in religious affairs in Japan.

Brief biography: Valignano was an Italian missionary. 1566—He entered the Society of Jesus. 1574—Traveled to Portuguese India. In Asia, he helped to develop missionary work in Goa, Macau, and especially Japan, where he supported the mission with a share of the silk trade, developed a native clergy, and saw Christianity grow to some 300,000 adherents.

137. Rattray, A.G.H. 1956. Agricultural Experiment Station, Salisbury (Southern Rhodesia). Annual report of experiments, season 1954-1955. *Rhodesia Agricultural Journal* 53(1):86-101. Jan/Feb. See p. 95-96.

• **Summary:** The section on “Soya beans” (p. 95-96) notes that at a spacing of 30 by 3 inches, the variety Hernon 147 again gave the highest seed yield with 10.76 bags per acre [1 bag = 200 lb]; this is the 6th consecutive season that Hernon 147 has been the highest yielder. Variety N212 was introduced from Natal, South Africa. Varieties whose names start with the letter “C” were introduced from Angola.

“The trial was planted on land following maize and received 10 tons of kraal [corral] compost and 100 lb. of rock phosphate to the acre.”

Also discusses: Velvet beans, sunn hemp, ground-nuts, and cowpeas. Address: B.A. (Cantab.) [Salisbury, Rhodesia].

138. Fibran, S.A. 1956. [Hardening of artificial bodies made from collagen and other proteins]. *Spanish Patent* 227,766. April 14. (Chem. Abst. 51:4764b). [Spa]\*

• **Summary:** Tubes, sheets, threads, etc., having high resistance and elasticity, are prepared by treatment of soy protein, etc., with formaldehyde, acetaldehyde, higher aldehydes, or their mixtures with hardening catalysts.

139. Strayer, George M. 1956. Europe: Multi-million dollar market. But it will take a strong program of sales and service to hold it. *Soybean Digest*. Aug. p. 18, 33.

• **Summary:** In southern Europe, extremely cold weather during the past two years has sharply cut olive production and killed some olive trees. Spain and Italy, both olive growing countries, are now importing soybean and cottonseed oil in large quantities. In both countries there is interest in importing whole soybeans to be crushed locally. Italy already has modern facilities adapted to crushing soybeans. Spain has only one such plant.

Austria also offers a market for some quantities of edible oils. “Unlike the Mediterranean countries, Austria uses lard and solid fats along with liquid oils.” Austria has crushing facilities for oilseeds which are now used only on domestic rapeseed and sunflower seed, then stand idle most of the

year.

In northern Europe the market is much different. Rapeseed is the most important oilseed crop. Most countries (Germany, Netherlands, Denmark, Sweden, Norway, Belgium, France, and England) have large oilseed crushing industries. Our major problem is still that of low soybean quality. “Every buyer readily acknowledges that the change in Federal Grade Standards on Sept. 1, 1955, brought considerable improvement.” But the major problem of foreign material still exists. We must sell buyers the product they want.

A photo shows a ship unloading soybeans in Hamburg, Germany. Floating elevators lift beans from the ship’s hold and deposit them in river lighters.

140. *Soybean Digest*. 1956. European export program the first undertaking of Soybean Council! Sept. p. 26-27.

• **Summary:** At the top of the first page are two letters under the heading: “Endorsements for Soybean Council from USDA.” These are: “Copies of actual letters [with signature on letterhead] received [in mid-August 1956] from True D. Morse, Acting Secretary of Agriculture, and Marvin L. McLain, Assistant Secretary, by Howard L. Roach, president of the Council.”

The article begins: “A huge export market development program in European countries to be implemented with over one-half million dollars in P.L. 480 and soybean industry funds will be the first undertaking of the new Soybean Council of America.

“The Council is an industrywide organization formed this past summer for the purpose of research, education and promotion of the nation’s soybean crop.

“An agreement between the U.S. Department of Agriculture’s Foreign Agricultural Service and the Council to implement the program was approved by the Council’s board of directors and signed by the officers. It was submitted to and signed by FAS Aug. 22. The program will be similar to the soybean market development program already in effect in Japan under the sponsorship of the American Soybean Association and Japanese trade groups.

“The European export program will include Italy, Spain, Germany, Austria, France, Finland and possibly other countries. It will in general follow the recommendations of Geo. M. Strayer, executive director of the Council, to USDA on his recent return from Europe. Strayer, who saw possible unwieldy surpluses developing from the 1956 and 1957 soybean crops, believes there is a potential increase of 60 to 70% in European markets for soybeans and soybean products over a period of years.

“A European office will be set up, and the Soybean Council will carry out projects in research, market analysis, sales promotion and related trading activities for soybeans, soybean oil and other soybean products in the above named European countries.



"The program will be financed by:

"\$500,000 in foreign countries made available by FAS.

"\$25,000 advanced by the Soybean Council.

"Funds advanced by European trade groups.

"The program is thus a massive attack by the Council on the threat of soybean surpluses during the next 2 crop years.

"The overall program of the Council, of which the European export project is a first step, will be financed by voluntary contributions from soybean producers at the point of sale. The operation will be simple. The collection of 10¢ per 100 bushels (\$1.50 per carlot of 1,500 bushels) will be made by the buyer at the time of purchase. And soybean processing plants will deduct \$1.50 per carlot on soybeans coming into their plants. The proceeds will be turned over to the Soybean Council of America. That is all there is to it.

"The checkoff will begin with the 1956-crop movement as originally planned.

"First report on the Council was made by its officers during the American Soybean Association convention at Urbana.

"Said President Howard L. Roach: 'The question has been asked, "Why aren't the grain men represented on the Council?"'

"'We had to make a start somewhere. For the producer and processor associations to set up the Council seemed to be the most practical method of getting it started. That was what was done. Grain handlers will be brought into the Council as soon as they wish, and as soon as they have representation able to speak for them as a group.'"

"On the cover: In the lower left-hand picture on the front cover Treasurer Albert Dimond, Secretary R.G. Houghtlin and President Howard L. Roach give their first report on the Soybean Council of America at the ASA convention."

A photo shows: "Board of Directors of the Soybean Council of America. Left to right, R.G. Houghtlin, secretary, Chicago, Illinois; Geo. M. Strayer, executive director, Hudson, Iowa; Scott Cramer, Chicago; Dwight Dannen, St. Joseph, Missouri; Albert Dimond, treasurer, Lovington, Illinois; Dave Wing, vice president, Mechanicsburg, Ohio; Chester B. Biddle, Remington, Indiana; Howard L. Roach, president, Plainfield, Iowa; Jake Hartz, Jr., Stuttgart, Arkansas; John W. Evans, Montevideo, Minnesota; Wayne Lichty, assistant executive director, Hudson, Iowa; Ralph G. Golseth, Danville, Illinois; and John Sawyer, London, Ohio."

141. *Soybean Digest*. 1957. [Soybean] Council leaders to Japan, Europe. Feb. p. 5.

• **Summary:** George M. Strayer, the Council's executive director, left Hudson, Iowa, for Japan on Feb. 1 to "review the progress of the soybean market project that has been carried on by the Japanese-American Soybean Institute... over the past year. And he will negotiate with Japanese trade groups and governmental agencies for continuation of the project for another 2 years."

"Howard L. Roach, Council president, will probably leave for Spain and Italy in February to set up central agencies for soybean market development projects in those countries. Roach will complete negotiations with three Spanish oilseed trade groups for their cooperation in the project." He will work with similar groups in Italy. The three purposes of the Spanish market development project are given. "The Soybean Council will supply a trained oil technician to work with Spanish and Italian government officials, trade people and consumer groups in solving problems connected with the use of U.S. soybean oil in Italian and Spanish foods."

142. *Soybean Digest*. 1957. Soybean market programs under way in Spain, Italy. March. p. 20-21.



**ROACH will activate market projects in Spain and Italy.**

• **Summary:** The long subtitle reads: "Population is increasing and living standards are rising but the hand-produced olive crop is shrinking in these two countries. A mixed feed industry is in its infancy. Here is an opportunity for the U.S. soybean industry to develop permanent markets for its products."

"Howard L. Roach, president of the Soybean Council of

America, Inc., left Plainfield, Iowa, on Feb. 26 for Spain and Italy. There he will complete arrangements begun last fall for soybean market development projects which it is hoped will result in greatly expanded markets for U.S. soybean products in those two countries. He was accompanied by Mrs. Roach.

"Roach has gone abroad to finish negotiations with Spanish trade groups, and with the Italian Association of Oil Industry, Fats, Soap and Related Products, and the Italian National Association of Producers of Livestock Feeds for their cooperation in the projects.

"Ground work for the two projects was completed by Roach while in Europe last fall. He plans to open offices for the market development work in Madrid and Rome in the next few months.

"Before the Council president enplaned, the project agreement for Spain between the Council and the Foreign Agricultural Service of the U.S. Department of Agriculture was signed. The agreements provide for the expenditure of approximately \$120,000 for market promotional work in each country within the period of a year. Of this amount, \$70,000 in each case will come from governmental P.L. 480 funds, and about \$50,000 from the Council and Spanish and Italian trade groups.

"Prospects seem good for a permanently broader market for U.S. soybean oil in Spain and Italy, and also for a growing market for U.S. soybean oil meal.

"Both countries are longtime heavy consumers of olive oil, which their people produce and which they have a taste for. But recent heavy freezes have damaged the olive groves in both countries and olive oil production is down. Olive trees are also subject to recurrent drouths and production is cyclical.

"At the same time the populations of both Spain and Italy are on the increase and the demand for fats and oils is expanding, so it is felt that both countries will of necessity continue to import vegetable oils in increasing quantities. The imported oil can just as well be U.S. soybean oil if we can learn to adapt it to Italian and Spanish usage.

"Since the average per capita consumption of all fats and oils in Spain and Italy is well below the levels of most European countries, it is possible that well-executed promotional programs might greatly increase Spanish and Italian oil consumption.

"Also, olives are produced by hand labor and the cost of production is high. As the wage level rises in the two countries—it is happening in Spain now—olive oil will become less and less competitive price-wise with U. S. soybean oil.

"The mixed formula feed industry in Italy is relatively new and in early stages of development. As the industry develops increasing interest in the usage of U.S. soybean oil meal is expected.

"The Soybean Council will participate in trade fairs at Bari, Palermo and Verona, Italy; Cologne, Germany; and Barcelona, Spain. At these fairs, the place of American

soybean oil meal in livestock feeding will be emphasized.

"J.W. Hayward, director of nutrition, Archer-Daniels-Midland Co., Minneapolis, Minnesota, is representing the Council, as a livestock nutritionist at the Verona Trade Fair March 10-19. Activities to be carried on by the Council and cooperating trade groups in Spain and Italy under the marketing project will include:

"1—Market research and analysis to determine per capita consumption of fats and oils in Spain and Italy and possible markets for soybean oil and soybean oil meal.

"2—Study of government regulations and policies pertaining to purchase and sale of soybean products.

"3—Educational work with trade groups and consumers.

"4—Services of a skilled American oil technician for the vegetable oil industries, consumer groups and others in Spain and Italy in connection with packaging, utilization and merchandising problems.

"5—Promotional programs at the consumer level to explain advantages and limitations of bland vegetable oils including soybean oil, and promotional work to increase per capita consumption of fats and oils.

"6—Assistance in developing livestock feed formulas that will include soybean oil meal as the basic protein ingredient.

"7—Assistance in formulation of programs to raise the nutritional levels of the Spanish and Italian peoples, with special emphasis on soybean products.

8—Visits to the United States of leaders of the Spanish and Italian oilseed industries for tours of inspection of facilities for production, handling, processing and refining of soybean oil as well as the manufacture of livestock feeds.

"Roach will arrange for selected Spanish and Italian oilseed industry leaders to visit the United States to observe our methods and to acquaint them with industry people here.

"The Council aims to have similar marketing projects under way in Austria, Greece and Germany in cooperation with Foreign Agricultural Service before the end of the year.

"Mr. and Mrs. Roach expect to be abroad a little over a month."

A portrait photo shows Howard Roach wearing a bow tie.

143. *Vegan (The) (England)*. 1957. Plantmilk News. 10(4):15-16. Spring. [1 ref]

• **Summary:** Plantmilk tests. In the Western hemisphere at least three, possibly more, companies produce plantmilk commercially. One in Spain bases its product upon almonds, the other two (in America) use soya as a base. One of the American companies has recently made a gift to the Society of a small supply of various types of its plantmilk. Some are for general purposes and some for infant feeding, and both types are available either as a powder or a liquid. The gift was made so that we could test their qualities. For domestic purposes they have been found to be satisfactory. An advantage which they possess over plantmilks produced



in England some years ago is that they may be successfully heated and brought to the boil. They are excellent for use in making white coffee, and entirely satisfactory for use in tea. For successful use in tea, the powder variety needs thorough emulsification, and for this an electric mixer is desirable. We understand that the manufacturers are considering processing the powder variety to make it instantly soluble. The liquid varieties require no preparation, except for the double-strength variety, which merely needs mixing with an amount of water equal to the amount of milk in the sealed tin. These plantmilks have also been tested for other domestic uses, and have been found to be satisfactory for making rice puddings, custard and blancmange. On the question of nutritional qualities, one sample of liquid plantmilk has been assayed and found to contain the amount of vitamin B-12 which was claimed. Further tests will be necessary to establish uniformity of the vitamin B-12 content throughout a series of samples, also the stability of the vitamin under different storage conditions. The question of assimilation of the vitamin in the liquid plantmilk, from the intestinal tract, will, of course, have to be settled before the plantmilk can be accepted as being equivalent to animal milk in this respect.

“Production. A British company was refused a license to import American plantmilk on the grounds of dollar policy. Since then, the company has given consideration to the question of plantmilk production on an experimental scale in this country. The board of directors has now decided not to proceed with this proposal, and the position so far as the Society is concerned is now therefore an open one. It will be necessary for the committee to consider what action the Society should now take to further its object, and a meeting will be called in the near future. Meanwhile, the Society has been going into the question of the special type of soya bean used as a plantmilk base, and again we are indebted to the American company for valuable advice. It should be stated that this company has no pecuniary interests at stake, but its directors are in agreement with the principles that led to the formation of the Society. It may be possible to arrange for experiments to be made in this country in growing some of the suitable types of bean. The proprietor of a small site in France, north-east of Paris, states that during the war [World War II] he successfully grew one type of soya bean on the site.

“From ‘Plantmilk News,’ No. 1, February 1957.

The Plantmilk Society is an organisation to promote the manufacture and sale for human consumption of a satisfactory non-animal alternative to dairy milk. General Secretary: 39 Willow Crescent, Uxbridge, Middlesex”

[England].

144. Deveza, Manuel Carneiro. 1957. Mais uma cultura para Moçambique [One more crop for Mozambique]. *Gazeta do Agricultor (Mozambique)* 9(96):140-42. May. [Por]

• **Summary:** This crop is the soybean. Trials conducted at the Embeluzi Experiment Station (*Estacao Experimental do Umbeluzi*) showed that soybeans yield from 1,800 to 2,400 kg/ha. Some 19 varieties were found to be good for forage, including Jubiltan 65, 67, and 77, Improved, Canadian, Charles, Laredo, Palmetto, Seminole, etc. Most soybeans have a long vegetative cycle, longer than 130 days. Some 13 varieties were found to give the best yields: Nigra, Seminole, Creole, Biloxi, Maxum, Palmetto, Avoyelles, Ootootan, etc. Details on cultivation and inoculation are given.

Note: This is the 2nd earliest document seen (Aug. 2009) concerning soybeans in Mozambique, or the cultivation of soybeans in Mozambique. Address: Eng. Agrónomo, Da Estacao Experimental do Umbeluzi.

145. *Soybean Digest*. 1957. Soybean Council opens offices in Madrid and Rome. Appoint general director for Europe. July. p. 6.



• **Summary:** “Opening of the office at Madrid, Spain, of the Soybean Council of America, Inc., has been announced by Howard L. Roach, Council president. The office is in the Edificio Espana, mail address Grupo 5, Planta 18, Despacho 3.

“President Roach, who has been in Spain and Italy where he activated the U.S. soybean market development projects in those two countries, returned home early in June. He announced that the Council’s general office for Europe



will soon be opened in Rome. It will be headed by Dr. Fred R. Marti, who has been appointed general director for Europe, effective Sept. 15.

"A former farm operator and manager and a graduate of Ohio State University and the University of Florida, Dr. Marti has been assistant agricultural attache with the Foreign Agricultural Service at Madrid since May 1955. He is a former employee of the U.S. Department of Agriculture and a government agricultural economist.

"As announced in June, Don Javier de Salas has been appointed director general for the Council for Spain. He will be in charge of the Madrid office.

"Educated in agriculture, Mr. de Salas has been employed by the U.S. Embassy doing liaison work with Spanish government officials, particularly in the agricultural field. He has been adviser to the Spanish Minister of Agriculture in setting up the new Spanish extension service.

"Mr. de Salas is a contributor to agricultural magazines in Spain and has a 15-minute radio program on agriculture over a Madrid station.

"President Roach also announced that Miss Audrey M. Capes has been named administrative assistant to Dr. Marti at Rome. A native of Scotland, she was recently an administrative assistant in the U.S. Embassy in Madrid. She has been bilingual secretary at the British-American Hospital and the South African Legation in Madrid."

A photo shows Howard Roach and the European team he has assembled. The caption reads: "Personnel for Europe with Soybean Council president in the newly opened Madrid office in Edificio Espana. Left to right, Edward M. James, technical consultant for the Council at the Barcelona Trade Fair; D. Javier de Salas, director general for Spain; Fred R. Marti, general director for Europe; President Howard L. Roach; and Audrey M. Capes, administrative assistant to the general director for Europe at Rome."

146. Gimeno Villacampa, M. 1957. Estabilización de los aceites refinados de soja, oliva y algodón con ácido cítrico [Stabilizing refined soybean, olive, and cottonseed oils with citric acid]. *Grasas y Aceites* 8(4):162-65. July/Aug. [10 ref. Spa]

• **Summary:** Reviews the use of citric and its degradation products as antioxidants for oils. Address: De la Empresa "EBRO", Compañia de Azucres y Alcoholes, A.A.

147. Roach, Howard L. 1957. Soybean Council of America, its aims and its achievements. *Soybean Digest*. Sept. p. 26-27.

• **Summary:** "The aims of the Soybean Council of America are to bring together growers, handlers, processors and manufacturers, with common interests in soybeans or soybean products, in order that the soybean crop may continue to expand under free economy.

"Now let us look at what has just been said, 'To bring



together growers, handlers, processors and manufacturers.' I am glad to report that this has been partially accomplished. The growers, the processors, many manufacturers and many handlers are now giving wholehearted support to the Soybean Council of America.

"There are some, of course, who have not yet been told the story and others who would rather wait and see how successful this operation will be before pledging their support, but every mail brings new individuals, companies and organizations pledging support to the Soybean Council of America.

"Next, when we say 'continue to expand,' we do not know in just what proportion this expansion will continue. Certainly the expansion in the last 25 years has been phenomenal but so too have been phenomenal the many and varied uses found for soybean products.

"With the growing population of the world and of our own United States, it is anybody's guess as to what the soybean business will be 25 years from today.

"Third, let us look at the last part of the statement of aims of the Soybean Council of America under a free economy. Soybeans have won their place in the agricultural economy today, not through the incentive of high support prices, but rather through an active merchandising or marketing program. In order to keep expanding we must keep moving our annual soybean crop into consumptive channels, both home and abroad, and always remember that crops are grown to be consumed, not to be stored.

"The Soybean Council of America is embarked on two programs, one having to do with domestic economy at home, and the other with the exportation of soybeans and soybean products to overseas markets.

"Active programs: First, I would like to speak of some of the programs now underway within our own country. The research committee of the Soybean Council is watching carefully and giving support to research that may provide the answer to the great saturated and unsaturated oil controversy that has been given so much publicity. Coordinating of research already being encouraged by the American Soybean Association, the National Soybean Processors Association and private companies among our various land grant

colleges and with the U.S. Department of Agriculture and private research institutions, is going forward. Studies are being made as to additional avenues of research that seem desirable, and ways and means of having same instituted are being investigated by the research committee of the Soybean Council.

"Your merchandising committee has been most active. Last winter, Ed M. James, oil consultant, was hired to make studies for the Council of all aspects of the soybean oil industry. His services were made available to the users of soybean oil, both at home and abroad. Food packers such as the sardine people, the tuna fish packers and others have been contacted, offering the services of Mr. James when needed. Many manufacturers of livestock feeds have been contacted and the merchandising committee is considering the advisability of engaging the services of a nutritionist to be of service to this segment of the industry.

"Your committee has also contacted manufacturers of soy food products and is serving as a liaison committee between inquiries originating by the American public for certain soy products.

"The industrial field has not been forgotten. Contact has been made with the National Paint, Varnish and Lacquer Association and many other industrial users of soybean products.

"In other words, the merchandising committee is looking to every avenue where the future of soybean products can be expanded.

"Your education committee has been instrumental in telling the story about the Soybean Council to the various members and to the public. They are also compiling a library of reference material for use both at home and abroad as well as a morgue of pictures that will be available to those people desiring to use pictures of soybeans and their various uses. Only the lack of sufficient staff curtails the activity of the education committee.

"Less than a year ago, the Soybean Council of America wrote a contract with Foreign Agricultural Service to do market development work in certain areas of the world, principally Western Europe. I would now like to report on some of the developments of the Soybean Council's activities in overseas places.

"Your president made a survey of Spain, Italy and the United Kingdom in December of 1956 and while in these places made plans for further market development activity. Returning to Europe in February of this year, I spent much time in contacting business organizations and government officials in Spain. An office was opened in Madrid and placed under the supervision of Mr. Javier de Salas, a Spanish national who has been working in the past for the American Embassy. Mr. de Salas is advisor to the newly formed extension director for agriculture and is an author, writing articles for one of the leading Spanish agricultural magazines.

"Your president has become well acquainted with Mr. Navarro, head of the olive oil syndicate, and a working arrangement has been perfected between the Soybean Council of America and the olive oil syndicate. Parenthetically, I would like to state that the olive oil syndicate is probably the most powerful of all Spanish agricultural organizations, being semi-official as far as government is concerned.

"Dr. Fred R. Marti, who was assistant agricultural attache for Spain, was hired by the Council to head the office for Europe which is located in Rome.

"Miss Audrey M. Capes was engaged as administrative assistant and the Rome office is now functioning under the direction of Miss Capes.

"Plans were made for a display of American soy products with the emphasis on soybean oil at the Fair in Barcelona which was held June 1 to 20.

"Ed James, oil consultant, arrived in Spain in the month of May and your president and Mr. James spent some time in field trips and interviewing various oil refiners in Spain.

"Barcelona Fair: At the Barcelona Fair, arrangements were made with four Spanish companies that were engaged in the business of making potato chips, to make potato chips, frying same in pure soybean oil. These potato chips were given away at the Fair to all visitors and were received with great enthusiasm.

"After the Fair, request was made by companies producing potato chips, for permission to use soybean oil exclusively in the manufacture of potato chips in the future. The Council also provided soybean oil as the medium for cooking fried chicken at the exhibit sponsored by the poultry people.

"Many important contacts were made at the Barcelona Fair, with important business concerns that can use and will use quantities of soybean oil.

"Also contact was made with many people and companies interested in importing and using soybean meal as a source of protein for livestock and poultry feeds.

"Your president attended an Agricultural Fair at Verona, Italy on March 10 to March 19. Dr. James W. Hayward of Archer-Daniels-Midland Co., was also present to serve as nutritional advisor at this Fair. Many important contacts were made at the Verona Fair that can lead to extremely good markets for soybean meal.

"The Council also cooperated with Foreign Agricultural Service in a Fair at Palermo, Sicily, May 24 to June 10. Dr. K.N. Wright of the A.E. Staley Co., was the nutritionist furnished by the industry through the Soybean Council to the Palermo Fair. Dr. Wright succeeded in making additional important contacts in south Italy.

"The Soybean Council is participating in an Agricultural Fair at Salonika, Greece, beginning Sept. 1 and running through Sept. 12. Dr. Edward L. Stevenson of the University of Arkansas will represent the Council at the Salonika Fair

and serve as nutritionist there.

“A Fine Foods Fair will take place in Cologne, Germany, Sept. 28 to Oct. 6. Your president has agreed with Foreign Agricultural Service to be present at this Fair to represent soybean interests there. Much time and effort has been spent in planning for this Fair and materials are now aboard ship and on the way to Germany.

“I want to take this opportunity to thank all industry people for the splendid cooperation given the Soybean Council as requests have been made for services and materials in carrying out the Fair operations this past year. The Council had but to ask and everyone pitched in to see that all road blocks were cleared and it indeed has been a pleasure for your president to work with such a group of cooperative people.

“I could go into great detail regarding ramifications of the activities as plans are being laid and dreams realized both domestically and in Europe. This report to you today is like trying to make a report on a horse race that has not yet reached the quarter post. I learned a long time ago that you can’t spit in the ocean and create a tidal wave but I do sincerely believe that the program of the Soybean Council is sound and will have a great effect on the marketing of soybeans and soybean products. It can do one more thing. It can serve as a pattern for other commodity groups to come to the realization that crops are produced to be consumed, not stored.

“Surely we have an ambitious pro- gram. Given a staff and time, we can make good on the old saying, ‘The impossible takes just a little longer.’”

A portrait photo shows Howard Roach. Address: President, Soybean Council of America, Plainfield, Iowa.

148. Arespacochaga y Felipe, Juan de. 1957. Outlook for U.S. soybean oil in Spain. *Soybean Digest*. Dec. p. 17-18.

• **Summary:** The author, general manager of FOISA, one of 5 Spanish trade groups cooperating with the Soybean Council, favors trading some of Spain’s expensive olive oil for cheaper U.S. soybean oil, and believes both countries will benefit. Address: General Manager, Factorias Oleícolas Industriales, Madrid, Spain.

149. Deveza, Manuel Carneiro. 1957. Elementos sobre as possibilidades culturais da soja [Elements on the possibilities of cultivating soybeans (in Mozambique) (Leaflet)]. Umbeluzi: Estacao Agraria do Sul. 2 p. Typewritten. [Por]\*

150. Léon, C.A. de. 1957. La soja [The soybean]. *Agricultura, Madrid* 26(299):130-32. [Spa]\*

• **Summary:** Discusses growing soybeans in Spain. Of several varieties which are grown successfully under irrigation, Capital and Harosoy yielded (in Aug. 1956) more than 5,500 kg/ha of seed. To be economically viable, soybeans grown in Spain as a second crop should yield on

average 2,500 to 3,500 kg/ha of seed.

151. *Monthly Bulletin of Agricultural Economics & Statistics (FAO)*. 1958. Trade: Table 9—Soybeans and oil: Trade by quarters, 1953-57. 7(1):28. Jan.

• **Summary:** This full-page table is divided horizontally into exporting countries and importing countries, for the years 1953 to 1957. Of the exporting countries—In Europe: Belgium-Luxembourg, Netherlands, and the United Kingdom all export oil (O).

In the Americas: Canada exports soybeans (SB). United States is a huge exporter of oil and soybeans. Brazil exports soybeans.

In Asia: Hong Kong exports soybeans and Japan exports soybean oil

Importing countries—In Europe: Austria O. Belgium-Luxembourg SB & O. Denmark SB. France SB & O. Germany, Western SB & O. Greece O. Italy SB & O. Netherlands B & O. Norway SB, Spain O. United Kingdom DB. Total SB & Oil. The Americas: Canada SB. Cuba O. Netherlands Antilles O. Asia: China (Taiwan) SB. Hong Kong SB & O. Israel SB. Japan SB. Malaya-Singapore SB. Africa: Morocco (former French zone) O. World total SB, O, Oil equivalent.

Note: This is the earliest document seen (Oct. 2014) concerning soybeans in Luxembourg. This document contains the earliest date seen for soybeans in Luxembourg (1953), when Belgium-Luxembourg exported 5,800 metric tons of soybeans (and 100 metric tons of soybean oil. Also in 1953 Belgium Luxembourg exported 900 metric tons of soybean oil).

152. *USDA Plant Inventory*. 1958. Plant material introduced January 1 to December 31, 1953 (Nos. 204341 to 212042). No. 161. 299 p. April.

• **Summary:** Soybean introductions: *Glycine max* (L.) Merrill. Fabaceae.

204651-204653 (p. 17). “From Germany. Seeds presented Plant Breeding Institute, Weihenstephan bei Freising. Received Jan. 13, 1953.” Varieties: Dieckmann’s Heimkraft. Von Burklin-Wolf’s Wachenheimer. Strengs Weihenstephaner Schwarze.

205083-205092 (p. 32). “From Israel. Seeds presented by the Ministry of Agriculture and Development, Agricultural Research Station, Rehovoth. Received Feb. 2, 1953.” Names of varieties [all having Japanese names]: Akasaya, Ginshiro, I-Higo-Wase, Kumusume-Sai-I-go, Naruto-Hadaka, Norin-I-go, Norin-II-go, Sango-Waso, Shiro-Daizu, Shirohana-Sai-I-go.

205384 (p. 45). “From Pakistan. Seeds presented by the American Embassy, Karachi. Received Feb. 16, 1953.”

205899-205915 (p. 63). “From Thailand. Seeds presented by the American Embassy, Bangkok. Received March 10, 1953. Varieties: Laheng. Lobpuri. Ma Kam Lung



A. Ma Kam Lung B. Ma Kam Lung C. Mae Rim. Mae Tang. Ringgit No. 317. San Patong Tung Farbut. Sri Samrong. Sumbing No. 452. Taklee. Tung Tam. USA-ARD-A. No. 27. No. 29. No. 520.

206258 (p. 75). "From the Philippines. Seeds presented by H.K. Hayes, University of the Philippines, Laguna. Received March 23, 1953." Variety: Headgreen.

207643 and 207644 (p. 123). "From the Philippines Islands. Seeds presented by Ivan H. Miles, Manila. Received April 16, 1953. Varieties: No. 1. No. 2.

207654 (p. 124). "From the Philippines Islands. Seeds presented by the Director of Plant Industry, Bureau of Plant Industry, Manila. Received April 17, 1953. Varieties: Bilomi No. 3.

20823 and 20824. "From Colombia. Seeds presented by the Universidad Nacional, Palmira. Received May 5, 1953. Varieties: Aksarben, Java.

208429-208440 (p. 156-57). "From Nepal. Seeds collected by G.V. Bowers and Goran Knutsson, TCA, Kathmandu. Received May 12, 1953." Descriptions of varieties: Black from Kathmandu Valley, Black from Marysyandi Khola, Brown from Thonje, Chocolate brown early variety from Kathmandu Valley, Chocolate brown late variety from Kathmandu Valley, White late variety from Kathmandu Valley, Mixed from Nalma (2), From Pokhara (4=No. 9-12). 208781-208789 (p. 168). "From Japan. Seeds presented by the Hyogo Agricultural College, Sasayawa. Received May 22, 1953. Varieties: Akazaya. Gin-Daizu. Kaikon-Mame. Kiyozu. Kosa-Mame. Tamanishiki. Tanbba-kuro-daizu. Tookichi. Zyuninyoshi.

209331-209340 (p. 191). "From Japan. Seeds presented to Tomio Nakane, Sapporo, Hokkaido. Received June 16, 1953." No. 1 through No. 10.

209831-209839 (p. 210). "From India. Seeds presented by G.V. Bowers, American Embassy, New Delhi. Received May 12, 1953." Selections made at the Bureau of Plant Industry, Soils, and Agricultural Engineering, Beltsville, Maryland, gave seeds that were brown, green, yellow, and black.

209908 (p. 213). "From the Union of South Africa. Seeds presented by A. A. Pitout, Nylstroom, Transvaal. Received Aug. 12, 1953." Variety has no name.

209940 (p. 214). "From India. Seeds presented by Krafft Freiherr v. Crailsheim, Jr., Amerang, Bavaria, Germany. Received Aug. 1953." One variety, unnamed. "Grown at Darjeeling, Bengal."

210016-210027 (p. 218). "From India. Seeds collected by Walter N. Koelz, Agricultural Explorer, Bureau of Plant Industry, Soils, and Agricultural Engineering, Beltsville, Maryland. Received Aug. 26, 1953. From Kolasib, North Lushai Hills, Assam." Variety No. 210022 is local No. 11808.

210162-210164 (p. 224). From Burma. Seeds collected by Ishom Deshotels, American Embassy, Rangoon. Received

Sept. 15, 1953." No. 1, No. 2, No. 3.

210178-210181 (p. 224). "From Taiwan. Seeds presented by Chia Huang, Ithaca, New York. Received Sept. 18, 1953." Two varieties: Seedcoat black. Seedcoat yellow.

210348-210353 (p. 229). "From Mozambique. Seeds presented by Reparticao Tecnica de Agricultura, Lorenzo Marques. Received Oct. 7, 1953." Names of varieties: Dr. Sander's Soja, Jubiltan 65, Jubiltan 67, Jubiltan 77, Mammoth Yellow, Potchefstroom 184. Note: This entry shows that soybeans were in Mozambique by 7 Oct. 1953. They were probably being cultivated in Mozambique by that time, but we cannot be sure. Address: Washington, DC.

153. *Soybean Digest*. 1958. The news in brief: The crop, markets and other items of note. May. p. 9-10.

• **Summary:** Contents: New market programs for Spain, Italy. Outlook for Japan trade muddled ("A total of 265,000 metric tons of Chinese beans has been contracted [by Japanese buyers] as of April 15"). Soybean planting just started. Railroads ask for lower rates. Margarine bill passes House (H.R. 912 would "permit the serving of margarine to U.S. Navy personnel, but with the amendment that it can be served only when surplus stocks of butter from Commodity Credit Corp. are not available").

154. Almeda, Alberto Fontana. 1958. [Improved milk]. *Spanish Patent* 243,371. July 30. (Chem. Abst. 54:11327g). [Spa]\*

• **Summary:** To make this "filled milk" product, a concentrated emulsion of mixtures of soybean oil and other oils is added to nonfat milk, and the fat mixture is fortified with vitamin A. No soymilk is used in the product.

155. Almeda, Alberto Fontana. 1958. [Emulsion of vegetable fats]. *Spanish Patent* 239,270. Aug. 9. (Chem. Abst. 54:11520d). [Spa]\*

• **Summary:** Soybean oil is the main oil used in this aqueous emulsion of vegetable oils.

156. De Salas, Javier. 1958. Future for soy products in Spain. *Soybean Digest*. Sept. p. 50-51.

• **Summary:** "I am going to talk about the work that the Soybean Council has done in Spain up to now, our projects and the outlook for the future of soybean oil and other products in my country.

"First of all when our office in Spain was established, a little more than a year ago, we had to face a problem of good public relations, as the people in the olive oil business were almost, I think it can be called, suspicious of our activities.

"Since the beginning we have stressed the absolute need of cooperation between us and we have been successful in convincing them that more imports of soybean oil would not damage their interests but would help them. For instance more imports of oil into Spain allows the Spanish

government to give more facilities for the export of olive oil which of course represents a better price for the Spanish refiner and producer. Thanks to our effort it can presently be said that the phase of misunderstanding has now passed and the best proof of this assertion is that an agreement of cooperation between the Spanish Olive Oil Syndicate and the Soybean Council of America has been signed.

"Agreements have also been signed with the most important mixed feed manufacturers in Spain and with the poultry cooperatives.

"Specific projects are on the way in both oil and meal; the visit to this convention of representatives of our cooperators is one of them. An oil refiners' training school will be held this fall and a nutrition seminar on the advantage of protein feeding will be held next month. A bulletin on nutrition has been printed by the Council and our Spanish cooperators.

"Market research has been carried out by our office so we will be able to give advice to all of you who may come to Spain. In the oil field more and more groups are interested in using soybean oil. The paint manufacturers and the margarine manufacturers have officially requested the Spanish government during the last few months to have soybean oil allotted to them for manufacturing.

"Now I am going to talk very briefly of the most interesting and, I may add, more time-consuming part of our work. I believe that the offices of the Soybean Council are also the foreign service for the world of soy. We try to help Spanish and U.S. businessmen in this field. This work is progressing nicely and the relations started through our efforts begin to bear fruit." Address: Director for Spain, Soybean Council of America, Inc., Madrid.

157. James, Edward M. 1958. Markets for soybean oil in Spain and Turkey. *Soybean Digest*. Sept. p. 36-38.

• **Summary:** "Spain and Turkey will continue to be good markets for U.S. soybean oil, depending on the continuation of P.L. 480." Address: Technical Consultant, Soybean Council of America, Inc.

158. Roach, Howard L. 1958. Program of the Soybean Council of America: Export market development activities of the Council now include European and Asiatic continents, Central and South America. *Soybean Digest*. Sept. p. 28-29.

• **Summary:** The Soybean Council of America, born in 1956, is financed by voluntary contributions of 1/10¢ per bushel on soybeans grown in the United States; one half of this amount or 1/20¢ per bushel to be contributed by the processing industry, and the growers share, 1/20¢, to be collected by the handlers from the growers. "Over 80% of the processing industry is now voluntarily contributing 1/20¢ per bushel to finance the Council..."

"The activities of the Council are controlled by a board composed of growers, processors, and handlers, this board

carefully allocating a budget of \$130,000 during the current year."

The Council, which is working to create new markets, has established an overseas office in Rome, Italy, for the direction of our European activities. "Under the supervision of the European office is an office for Italy and an office for Spain. These offices are possible through cooperation with the USDA's Foreign Agricultural Service, and part of their costs are paid for through the use of counterpart funds generated through the sale of commodities under Public Law 480."

The Council presently has a technical representative, accompanied by a representative from the Foreign Agricultural Service, U.S. Department of Agriculture, making a survey of market possibilities in the Caribbean area, starting at Bermuda, and going through the Bahamas, Greater Antilles, Lesser Antilles, Leeward Islands and Windward Islands.

"In September another technical representative will visit Chili, Peru, Equador, and Colombia to survey the possibility of increased markets in that area for soybeans and soybean products."

A portrait photo shows Howard Roach.

Note: This is the earliest document seen (March 2001) concerning the activities of the American Soybean Association in Latin America, in the Caribbean, or in South America. Address: President, Soybean Council of America, Plainfield, Iowa.

159. Rose, Florence. 1958. Plan international nutrition conference: Propose a working conference of officials from interested countries to tackle world nutrition problems. Soybeans can play a big part. *Soybean Digest*. Sept. p. 74-76.

• **Summary:** This is the text of a speech made by Florence Rose of MFM at the American Soybean Association's 38th annual meeting (On Aug. 20). Her actual mimeographed speech was titled "Soybeans Lead Bread-Through the World's Hunger Fronts."

During the past 12 years, the Meals for Millions Foundation, Inc. has sent over 54 million of these "3¢ meals based on soy grits to over 100 countries around the world.

ASA's 38th annual convention in Memphis, Tennessee, was the site of the second stage of the Multi-Purpose Food (MPF) idea "which is to assist other countries to produce their own counterpart Multi-Purpose Food, from their own resources." Today, in India, there is a MPF that utilizes peanuts as the protein source. "The Minister of Agriculture of India became president of our Indian Meals for Millions Association formed in 1955 to make the Indian people aware of this new approach to their age-old problem. Prime Minister Nehru authorized funds for the initial pilot plant now operating at the Central Food Technological Research Institute at Mysore." MFM has aided the take-off of the pilot plant by purchasing over 100,000 pounds of the Indian

product—in addition to the 10 million meals of soy-based MPF shipped to India prior to 1956.

“The great United Nations agency, UNICEF, is prepared to assist the government of India in setting up large-scale production, after certain preliminaries are completed.” A “grant of \$25,000 has been made to our nongovernmental Indian affiliate to help it popularize and publicize the existence of this new food.”

There is also a soy-based Multi-Purpose Food in Brazil now. In the Philippines and Japan Meals for Millions is working to develop local production of MPF. In Japan, in “cooperation with Mr. Shizuka Hayashi and your Japanese-American Soybean Institute, we hope there will soon be a Japanese MPF utilizing American soybeans as the protein base.”

With its small budget and staff, MFM began looking for a short-cut that might cut the time between a good idea and concrete action.

“Trial balloon: This is the background that led us to send up a trial balloon in the May issue [article, p. 20-22] of the Soybean Digest proposing the idea of an International Conference to which would be invited principally officials on the ministerial levels from interested countries...”

Recently Florence Rose and Ernest Chamberlain (MFM secretary) presented the idea at the recent World Health Organization (WHO) assembly that met in Minneapolis, Minnesota, from May 22 to June 24. They personally discussed the conference with the ministers of health or their deputies from 27 of the 85 countries represented. “All expressed enthusiasm in participating in such a conference if the means could be developed to bring them to the conference location.” Such a conference might be sponsored by the California Institute of Technology or one of the United Nations agencies such as WHO, FAO, and/or UNICEF. Best of all would be the American Soybean Association. Specific commitments to initiate MFM programs were given by ministers from Ceylon, Indonesia, and Liberia.

“Yesterday, Dwayne Andreas of Honeyamead Products Co. gave us an inspiring example of what interest can mean, by offering Meals for Millions a [rail] carload of soy grits, a gift that will help provide an additional half-million meals of soybased MPF that can tremendously accelerate our programs in Japan and Spain and Italy.” Address: Executive Secretary, MFM Foundation, Inc. [Los Angeles, California].

160. Puerta, R.J.; Alonso, M.E. Amelia. 1958. Experiencias con variedades de soja (1956-7) [Trials with soybean varieties (1956-7)]. *Anales. Instituto Nacional de Investigaciones Agronomicas* 7(3):539-709. [Spa]\*

• **Summary:** The results are given from many trials conducted in various regions of Spain to study the adaptation of soybean varieties. From the average yields of 26 fields in 1956-57, it is concluded that, provided the environment is suitable, preference should be given to the varieties Harosoy

(average yield 1,688 kg/ha), Clark (1,639 kg/ha), Hawkeye (1,457 kg/ha), and Lincoln (1,312 kg/ha). Also discusses the planting dates for different regions of Spain, and oil and protein contents of the seed of several varieties in Spain and the USA. Address: Cent. Cerealicult., Madrid.

161. Soroa y Pineda, José Ma de. 1958. La soja: Cultivo, aprovechamientos, industrias [The soybean: Cultivation, exploitation, industries /commerce]. Madrid: Dossat [Reyes]. 56 p. Illust. (color). 22 cm. [Spa]\*  
Address: Spain.

162. Deveza, Manuel Carneiro. 1958. A soja: Sua importância e possibilidades culturais [The soybean: Its importance and possibilities for cultivation (in Mozambique)]. *Publicacoes. Serie B: Divulgacao (Mozambique)* No. 10. 21 + [2] p. [9 ref. Por]

• **Summary:** Contents: Introduction. Trials observing the vegetative behavior of soybeans. Spacing trials. Trials concerning time of planting. Comparative production trials. Trials for fertilizers and soil amendments. Trials inoculating soybeans with specific bacteria. Laboratory study to determine the oil and protein content. Cultural instructions: Climate. Terrain and soils. Preparation of the land for planting. Planting. Varieties suitable for planting (and their proper spacing). Weeding and thinning the plants. Irrigation. Harvesting. Threshing.

The author conducted soybean experiments at the Umbeluzi Experimental Station for four years (1954-1957), starting in Jan. 1954. The first seeds were planted on 12 Jan. 1954. The varieties tested during the first 3 years were Potchefstroom 184, and Mammoth. During late 1956 and early 1957, Acadian and Seminole were tested. The highest yield obtained during these 4 years were 1,465 kg/ha from Acadian, planted on 9 Nov. 1956. Note 1. The source of these soybeans was probably South Africa, and maybe also the United States.

Note 2. Umbeluzi is probably in southern Mozambique near Swaziland, since the Umbeluzi (or Umbelosi) River, about 120 miles long, flows eastward through Swaziland and southern Mozambique, into Delagoa Bay, near Maputo. Address: Eng. Agrónomo, Da Estacao Experimental do Umbeluzi, Mozambique.

163. Ferrándiz, Vincente L. 1958. Armonías alimenticias: La buena combinación de los alimentos [Nutritious harmonies: The good combination of foods]. San Celoni, Spain: Bilbeny. 80 p. Portraits. Illust. 23 cm. [Spa]\*  
Address: Barcelona, Spain.

164. Deveza, Manuel Carneiro. 1958? Relatórios de experimentação de 1953/54, 1954/55, 1955/56, 1956/57 e 1957/58 [Written reports on experiments [with crops] in 1953/54, 1954/55, 1955/56, 1956/57 and 1957/58]. [Por]\*



165. De Salas, Javier. 1959. U.S. soybean oil gains in Spain. *Soybean Digest*. April. p. 27.

• **Summary:** “When the Soybean Council opened an office in Madrid not quite 2 years ago, the attitude of the Spanish people and the olive oil interests toward soybean oil was frankly distrustful. The man on the street firmly believed that the reason for the imports of soybean oil into Spain was that huge amounts of olive oil were exported to the United States. The phrase, ‘Our liquid gold is taken to America,’ was used freely by everybody. Some intriguers even used it for political reasons as a sample of the mismanagement of the Spanish economy by the government.

“The real reason for the imports was entirely different. Spain through increased per capita consumption and increased population had passed from having a surplus of oil to being in a deficit position so soybean oil had come to fill the gap between production and consumption.

“Now let’s study briefly how the situation has improved through the permanent and friendly contact that the Soybean Council has had with Spanish interests.

“Through the seminars held by the Council in cooperation with various Spanish trade groups and the continuous press and radio campaigns, more and more people are finding out the real reason for the import of soybean oil. The Spanish government has allowed soybean oil to be sold as such and the Spanish housewife is learning that good quality soybean oil is entirely suitable for cooking purposes.

“The suspicion of the refiners has been dispelled. Dr. Edward M. James, technical consultant of the Soybean Council, has helped the Spanish refiners through his advice on the best methods of refining soybean oil. As time passes, we have more and more people on our side who are convinced that:

“1—Soybean oil does not compete with olive oil but rather imports of soybean oil will allow Spain to export more olive oil to increase our foreign currency earnings.

“2—U.S. Public Law 480 is understanding and allows the purchasing country to decide the stage of processing of all goods bought.

“3—Soybean oil can substitute if properly refined for any other edible oil. Good quality soybean oil is much better than poor quality olive oil.”

A photo shows: “Reception at Madrid office of the Soybean Council. Mr. Navarro, chief of the Spanish Oil Syndicate (left), and De Salas.” Address: Director for Spain, Soybean Council of America, Madrid.

166. Haldeman, Robert C. 1959. Potential effects of St. Lawrence Seaway on costs of transporting grain. *Marketing Research Report (USDA Agricultural Marketing Service)* No. 319. 149 p. April. [80 ref]

• **Summary:** Contents: Summary. Introduction. Grain

production—Great Lakes—St. Lawrence waterway tributary area: Wheat, corn, barley, soybeans (p. 5), other grains. Characteristics of inland grain movements to interior and port destinations. Export grain movements: Wheat, corn, barley, soybeans and soybean oil, other grains. Potential export volume via the St. Lawrence Seaway. The Great Lakes—St. Lawrence waterway. Physical limitations of the waterway: Season of navigation, capacity of the Welland Canal, relationship of estimated traffic volume to capacity, capacity of the St. Lawrence Seaway locks, other physical limitations. Enabling legislation and seaway tolls: The Wiley-Dondero Act of May 13, 1954, The St. Lawrence Seaway Authority Act (of Canada), December 21, 1951. Grain handling expenses. Transportation costs and charges: motortrucks, railroads, inland waterways, Great Lakes, ocean transportation, liberty-type vessel, lake-ocean bulk carrier, comparative costs and charges. Summary of computed costs and charges on grain from interior points to foreign ports. Summary of computed costs and charges on grain to Atlantic Coast ports and tributary areas. Appendix.

Maps show: The Great Lakes and the St. Lawrence River and the Seaway (p. 2). An outline map of the United States with the areas where white wheat, hard red spring wheat, hard red winter wheat, and soft red winter wheat are grown (p. 4).

Illustrations show: A grain elevator truck dump, raised, with a truck in dumping position (p. 27).

Photos show: Grain flowing from the rear of a truck into a hopper-conveyor for movement into a grain elevator (p. 28). Automatic boxcar unloader with a boxcar being unloaded as it is gently oscillated; it can empty 5 cars per hour (p. 29). A Tennessee River tow, which is over 1,300 feet long and includes 21 bargeloads of grain. Pushed by a tugboat, the cargo totals 33,429 tons, or the equivalent of over 500 loaded railroad cars (p. 30). Unloading grain using floating pneumatic grain elevators, widely used at Antwerp and Rotterdam (p. 38).

Tables show: (1) Grain production (incl. soybeans) in selected states, average 1945-1954, 1955 and 1956 (p. 61). (14) Soybeans and soybean oil: U.S. exports by country of destination, averages 1945-49, 1945-54, 1950-54; annual 1955 and 1956. Figures are given for: North America—Canada, Cuba, Other, Total. South America—Chile, Other, Total. Europe—Austria, Belgium-Luxembourg, Denmark, Finland, France, West Germany, Greece, Iceland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, Yugoslavia, Other, Total. Asia—Japan, Taiwan (Formosa), Other, Total. Africa. Australia and Oceania. Other. Grand Total. Soybean oil is converted to bushels of soybeans. The exports are on a calendar year basis. The units are 1,000 bushels.

In 1945-49 U.S. exports of soybeans and soybean oil were largest to: West Germany (and Austria) 3,345. France 2,100. Italy 1,745. Japan 1,548. Grand total: 21,219.

In 1956 (preliminary) U.S. exports of soybeans and soybean oil were largest to: Spain 36,630. Japan 19,148. West Germany (and Austria) 12,524. Netherlands 11,311. Grand total: 131,226—a remarkable 6.2-fold increase over 1945-49. Address: Transportation Economist, Marketing Research Div., Agricultural Marketing Service, USDA, Washington, DC.

167. Martinez Moreno, J.M.; Vázquez Roncero, A.; Establier Torregrosa, R. 1959. Obtención de alcoholes grasos no saturados a alta presión. II. [Preparation of unsaturated fatty alcohols at high pressure. II.]. *Grasas y Aceites* 10(2):55-60. March/April. (Chem. Abst. 54:14727e). [13 ref. Spa] Address: Universidad de Sevilla. Cátedra de Química Técnica. Instituto de la Grasa y sus Derivados. Departamento Industrial, Sevilla.

168. Hedge, Porter M. 1959. Washington Digest: Seaway offers cheaper trade route abroad. *Soybean Digest*. May. p. 38, 40.

• **Summary:** “Soybeans will be able to move to Europe and the Mediterranean and Middle Eastern areas at rate 12¢ to more than 20¢ a bushel cheaper through the newly opened St. Lawrence Seaway.” “Minimum channel depth of 27 feet will be completed by midyear between Lake Ontario and Montreal [Quebec] and Lake Ontario and Lake Erie.”

Oil outlook. Big crush (Oil may be shipped late to Spain and Turkey. Argentina wants edible oil. “Nearly 140 million bushels have been put under price support through March 31... A substantial part of the crush of soybeans during the summer months will have to come from beans under loan, officials feel. CCC takes over soybeans on May 31. The announced sale price is the 1959 loan rate plus 5%”).

“Humphrey Bill: The food for peace program advocated by Senator Humphrey of Minnesota is now in bill form and introduced in the Senate. It provides for a 5-year program similar to P.L. 480 and would authorize the use of \$2 billion worth of surplus commodities a year. About \$1½ billion are now being used.”

“There is little chance of the Humphrey bill becoming law this year or next. USDA is opposed to a longtime program of the P.L. 480 type, but considers it useful as an emergency program.”

A portrait photo shows Porter M. Hedge. Address: Washington Correspondent for the Soybean Digest.

169. Establier Torregrosa, R.; Caravaca Barrosa, R. 1959. Obtención de jabones a presión [Preparation of soaps under pressure]. *Grasas y Aceites* 10(4):202-06. July/Aug. (Chem. Abst. 54:13695i). [7 ref. Spa]

• **Summary:** Soap was prepared from soybean oil. Address: Universidad de Sevilla. Cátedra de Química Técnica.

170. 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 article focuses on soya at Yangambi in the Belgian Congo. Content: Introduction. 1. Historical and worldwide distribution. 2. 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.

3. Selection: Classification of the soybean varieties, genetics, and selection. 4. The cultivation of soya.

5. Characteristics of forage and utilization: Green manure (*engrais vert*), pasture, green forage, silage, hay, grain. 6. 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.

7. A glance at soybean production. 8. 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. Tables: (1) Utilization of soybeans (full page, p. 922). (2) Alphabetical list of the soybean varieties introduced into Yangambi (p. 944-48). The table has two columns. (a) The names of the varieties listed alphabetically in French. (b) The country or U.S. state of origin, including Algeria, Australia, Borneo, Brazil, China (northern), Congo Republic (incl. Nioka), Cuba, Cyprus (*Chypre* in French), Dahomey, France, Iraq, Jamaica, Japan, Lithuania, Mauritius, Morocco (Rabat), Nigeria, Republic of the Congo (incl. Brazzaville), Rhodesia, Rwanda (Rubona), Spain, Tanganyika, Trinidad, USA (incl. Alabama, Arizona, Arkansas, Maryland). Address: Assistant à la Division des Plantes Vivrières de l'INÉAC, à Yangambi [Belgian Congo].

171. Madariaga, Juan G. de. 1959. The oil market in Spain in the new economic situation: A wide field is open to U.S. businessmen. *Soybean Digest*. Sept. p. 24.

• **Summary:**

“During the last few years Spain has been the main importer of soybean oil from the United States. The purchase of this oil has usually been carried out by the Supply Board which is the organization for controlling trade and distribution in the whole of Spain.

“These purchases were done under P.L. 480 because of the fact that, as everybody knows, Spain has been short in dollar currency.

“As at present Spain is undergoing new economic

measures adopted by the International Monetary Fund and OEEC, we are going to analyze the possible consequences of this new situation on the Spanish soybean oil market.

"The liberalization program published by the press and explained by the Spanish Minister of Commerce consists principally in the following points:

"1—Free trade.

"2—Reduction of custom duties for several goods.

"3—Encouragement of foreign investment.

"Free Trade: The measures taken by the Spanish government toward free trade are mainly represented by several lists of merchandise that are being published periodically. The merchandise included in those lists can enter the country without any direct restriction on behalf of the government. Up to now several oilseeds have been included in these lists, e.g.: flaxseed, castor-oil seed, hemp seed, poppy seed, and other oilseeds for industrial uses, and other oils such as copra, coconut and palm kernel.

"It is possible that the Spanish government may include soybeans in the forthcoming lists but up to now we haven't received any information to that effect.

"Other products such as soybean meal may be liberalized considering the enormous shortage of protein feed for livestock and poultry that Spain is undergoing.

"Soybean oil is in our opinion a commodity not very likely to be liberalized as the Spanish government will do its best to maintain its purchase under local currency.

"Lecithin could probably be liberalized taking into account the pressure of the chocolate manufacturers.

"Reduction of Custom Duties: The custom duties for some goods have been reduced; the list of the new tariffs is available at the Spanish office of the Soybean Council.

"Foreign Investments: A wide field of possibilities is now open to American businessmen in all of the Spanish industries and mainly in the soy bean industry.

"There is a strong tendency toward the import of soybeans instead of the soybean products already manufactured. Many Spanish businessmen come to our office concerning prospects for American capital investment in Spain.

"In the new regulations of foreign investments the Spanish government allows up to 50% to be owned by foreign hands and in exceptional cases even 75%. Here is a suggestion for the progressive American industry, here is a new way of opening a market through investment in such a good business as soybean products have proved to be in Spain."

A photo shows Mr. Madariaga speaking at a podium in front of a large map of the world, as ASA president John Sawyer (center) and the Council's director of Italian operations, Dominic Marcello, look on. Address: Asst. Director of Spanish Operations, Soybean Council of America, Inc., Madrid, Spain.

172. Strayer, George M. 1959. Marketing opportunities lie before us. *Soybean Digest*. Sept. p. 18-21.

• **Summary:** Last year U.S. soybean production topped the 500 million bushel mark for the first time in history. "For the first time in history we will export over 100 million bushels of soybeans as beans during the present crop year ending Sept. 30. That means that 1 bushel out of every 5 produced on the farms of American finds its way to plants in Japan, Germany, England, Israel and the other countries of the world. This year again we will export about one-fifth of our [soybean] oil production... The soybeans have all been sold for dollars, while some portions of the oil have been sold for dollars and the remainder for foreign currencies under Public Law 480.

"The U.S. soybean crop has truly become an international commodity"—thanks in large part to ASA [American Soybean Assoc.] market development programs in Japan, Spain, Italy, Israel, and Germany. The Japanese program is the biggest and most successful; a long description of its activities is given. In India, the Soybean Council exhibited at a trade fair in Madras. Also discusses problems with grading standards (broken soybean particles are now classified as foreign material) and ASA's need for more members (it now has only 7,000).

The entire soybean industry has been saddened by the death of W.J. Morse on July 30. "More than any other man in the United States he was responsible for soybeans as we know them today. He made the plant exploration trips that uncovered the thousands of varieties and strains of soybeans that were brought to the United States for trial purposes, and which supplied the germ plasm for all [sic, many] of today's varieties of soybeans. One of the first two honorary life members chosen by this Association, Bill Morse retired from his work in the U.S. Department of Agriculture just 10 years ago. His contributions to the present billion-dollar soybean industry can never be adequately appraised."

Thanks to the nine men (serving without pay) who have represented ASA on the board of directors of the Soybean Council of America.

"Thanks to Kent Pellet for his continued faithful allegiance to the editorship of the *Soybean Digest*, the *Blue Book* and *Late News*,..." Address: Executive Vice President and Secretary-Treasurer, American Soybean Assoc. [Hudson, Iowa].

173. Martinez Moreno, J.; Establier Torregrosa, R.; Vazquez Roncero, A. 1959. Influencia de la presión en la isomerización de los ácidos grasos poliinsaturados [Influence of pressure on the isomerization of polysaturated fatty acids]. *Grasas y Aceites* 10(6):279-82. Nov/Dec. (Chem. Abst. 55:1031h). [3 ref. Spa]

• **Summary:** Soy oil was one of the oils tested. A graph shows the alkaline isomerization of soy oil in terms of percentage total conjugation versus time at two temperatures



with and without nitrogen. Address: Universidad de Sevilla. Cátedra de Química Técnica. Instituto de la Grasa y sus Derivados. Departamento Industrial, Sevilla.

174. FAO (Food and Agricultural Organization of the United Nations), Plant Production. 1959. Tabulated information on tropical and subtropical grain legumes. Rome, Italy: FAO. xiv + 367 p. 28 x 21 cm.

• **Summary:** This publication was compiled from the replies of questionnaires submitted to agricultural stations, or other organizations, in tropical and subtropical countries. Information is given on morphology and habit, uses, yield, and quality of grain and/or forage. Among the many species considered are soybeans, peanuts, winged beans, and bambarra groundnuts (*Voandzeia subterranea*). An appendix gives the geographical location of the contributing stations and countries, together with data on local temperature, precipitation and soil type. This work is in English, only, but French and Spanish equivalents of the headings are given.

Page vii shows the various countries from which information on the cultivated soybean was collected. At least one page is devoted to the soybean in each of these countries, as follows: (1) Angola (p. 90). Local name: Soja Preta. Station submitting information: Estacao Agricola Central, Vila Salasar. Seed yield: 1,400 kg/ha. Uses: Green manure, human consumption, livestock feed, oil extraction. Angola #2 (p. 107). Station submitting: Estacao de Melhoramento de Plantas, Nova Lisboa for variety Medium Yellow. Seed yield: 500–2,500 kg/ha. Uses: Human consumption, livestock feed, oil extraction. (2) Belgian Congo (p. 91). Station submitting: I.N.E.A.C. Station, Gandajika. Seed yield: 260–850 kg/ha. Use: Human consumption. (3) Jamaica (p. 92). Station submitting: Department of Agriculture, Kingston. Seed yield: 1,080 kg/ha. Uses: Green manure, human consumption, livestock feed. (4) Puerto Rico (p. 93). Local names: Habichuela Soya, Haba Soya. Station submitting: U.S. Federal Agricultural Experiment Station, Mayaguez. Seed yield: 1,620–2,160 kg/ha. Uses: Green manure, human consumption, livestock feed, oil extraction.

(5) Southern Rhodesia (p. 94). Station submitting: Agricultural Experiment Station, Salisbury. Seed yield: 1,500 kg/ha. Uses: Human consumption, livestock feed. (6) Thailand (p. 95). Local names: Tua Luang, Tua Nao, Tua Mei Tai. Station submitting: Mehjo Agricultural Experiment Station, Mehjo. Seed yield: Not given. Uses: Human consumption, livestock feed, oil extraction. (7) Belgian Congo (p. 96–98, 100, 102, 104, 105, 108, 109, 112, 113). Local names: Soja. Stations submitting: I.N.E.A.C., Yangambi for varieties 37/S/38/345/666 (introduced from South Africa), Atootan (Otootan; introduced from Brazil), Jubitan 109 (introduced from Southern Rhodesia), Palmetto (introduced from Brazil), and Trinidad (introduced from Nigeria), I.N.E.A.C. Station, Nioka, Ituri for varieties Atootan SH. 030 and Herman SH. 02 (both introduced from

USA), INEAC Station, Bambesa for varieties E.35 and S.H.E. 43, I.N.E.A.C. Station, Keyberg, Elisabethville for variety K 92/6/2/2/1, I.N.E.A.C. Station, Mont Howa, Ituri for variety Mammoth, I.N.E.A.C. Station Rubona, Ruanda for variety Palmetto. Seed yields: 1,000–1,500 kg/ha (2 varieties at Yangambi), and 500 kg/ha at Nioka. Uses: Green manure, human consumption, livestock feed, oil extraction. (8) Australia (p. 99). Station submitting: Department of Agriculture and Stock, Brisbane, Queensland for variety Clemson Non-shatter. Source of crop: Introduced from the USA. Seed yield: Not given. Uses: Human consumption, livestock feed, oil extraction.

(9) Morocco (p. 101). Station submitting: Centre de Recherches Agronomiques for variety Gibson S.C. 335. Seed yield: 400–500 kg/ha. Uses: Green manure, human consumption, livestock feed, oil extraction. (10) Brazil (p. 103). Station submitting: Instituto Agronomico, Campinas, Sao Paulo. Variety name: I.A.455. Seed yield: 1,200–1,600 kg/ha. Uses: Erosion control, green manure, human consumption, livestock feed, oil extraction. (11) India (p. 110). Station submitting: Department of Agriculture, Nagpur, Madhya Pradesh for varieties S.B. 5 and S.B. 8. Seed yield: 1,486 and 1,172 kg/ha. Uses: Livestock feed. (12) Ceylon (p. 114). Station submitting: Agricultural Research Station, Maha Illuppallama for variety Yellow (introduced from India). Seed yield: 860–1,080 kg/ha. Uses: Green manure, livestock feed, oil extraction. Address: Rome, Italy.

175. León, Arturo de; Ráfols, Wifredo de. 1959. El ácido giberélico [Gibberellic acid]. *Anales. Instituto Nacional de Investigaciones Agronomicas (Madrid, Spain)* 8(4):807–45. [16 ref. Spa; eng]

• **Summary:** In glasshouse and field trials near Madrid, Spain, treatment of young plants of several species, including soybeans, wheat, and sunflower, with gibberellic acid resulted in general in greater vegetative growth, earlier flowering, and larger seeds than in the untreated controls. Address: Madrid, Spain.

176. Riepma, Siert F. 1960. Margarine in Western Europe. *USDA Foreign Agricultural Service*. FAS-M-80. 16 p. May. [14 ref]

• **Summary:** Contents: Foreword (This study was written in 1958. Western Europe is the largest market for U.S. vegetable oils). Invention and definition. Fats and oils ingredients. Consumption. Prices. Production and production operations. National margarine requirements. Comparison with U.S. practices. Outlook.

“The margarine industry of Western Europe is the world’s largest, and it is one of the most important users of fats and oils. Last year’s production totaled about 4 billion pounds of crude fats and oils. Most of this is vegetable oil, and nearly all of it has to be imported. Coconut and palm oils are the most widely used, although... peanut, soybean, and

cottonseed and cottonseed are well liked too.”

“Western Europe is margarine’s homeland. It was 90 years ago that the notable French chemist, Hippolyte Mège-Mouriez, completed his initial researches for a satisfactory spread that would serve the purposes of butter. What was needed was a food that would be readily available through a controllable production system, and at an economical price. For Europe had suffered an increasingly severe shortage of fats since the Napoleonic wars. The rapid expansion of population, the growth of industrial areas with their new large working classes, the advent of gradually rising standards of living based on machine technology, and, perhaps the disruption of older butter sources by wars and social changes all contributed to the shortage.

“It was the Emperor Louis Napoleon III who asked the new chemical science and technology to invent a new kind of “butter.” He did so by way of a competition authorized in 1869, and Mège-Mouriez won the award with his ‘oleomargarine’ product. French and English patents were issued in July of that year.

“One reason the inventor called his mixture ‘oleomargarine’—after the Greek word ‘margarites,’ meaning pearl-like—was that he believed its glistening appearance was due to what was then called margaric acid. The ‘oleo’ came from the Latin ‘oleum’ for the strained beef fat that was then the principal component.”

“As early as the 1870s, Europe could not provide enough fats and oils for the growing margarine industry.”

“The introduction after 1907 made all edible vegetable oils, and also whale oil, available for margarine on a much wider scale than before... By 1907 vegetable oils made up perhaps one-third of the total vegetable fat ingredients of margarine in Western Europe; in 1914 the ratio was around four-fifths. Coconut and palm kernel oils accounted for about two thirds of this, and came mostly from the colonies of European countries.”

Table 2 (p. 5) gives estimated per capita consumption of all food fats and of margarine in each country of Western Europe and in the USA in 1938, 1956, and 1957: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom. Countries with the highest per capita consumption of margarine in 1957 were: Norway (38.2 lb). Denmark (35.8 lb). Netherlands (34.0 lb). Sweden (29.0 lb). Note that all of these countries are located in northern Europe. Countries with the lowest per capita consumption of margarine in 1957 were: Italy (1.3 lb). Switzerland (3.1 lb). France (3.7 lb). Austria (6.7 lb). The USA was one of the lowest at 6.9 lb per capita in 1957.

Table 6 (p. 11) gives estimated margarine production by region and world total, selected years, 1900-1958. The regions are: Western Europe, United States, Eastern Europe, India (includes vanaspati, starting in 1956), other, and world. Address: Director, National Assoc. of Margarine Mfgs.,

Washington, DC.

177. Tiner, Hugh M. 1960. Meals for Millions: A 3-cent ‘lunch’ fights hunger and malnutrition. *Rotarian (The)* 96(5):51. May.

• **Summary:** Tells the story of Clifford Clinton, Meals for Millions, and MPF (Multi-Purpose Food). Describes how many different Rotary Clubs in the USA have sent MPF overseas for use in relief and rehabilitation projects in Costa Rica, Portugal, Greece, Korea, Mexico, Ceylon, Hong Kong, and India. “Last year \$247,000 poured into the Foundation’s headquarters on Seventh Street in Los Angeles and sent ‘meals’ on their way to the hungry.

“But the chief aim of the Foundation is to aid Governments in developing their own versions of MPF, using food products of their regions. An Indian version, based on peanuts, is already in production, and the building of nine plants has been authorized for this purpose. A soy-based MPF is being produced in Brazil. Research is going ahead in the Philippines to develop MPF-type food with fish and coconut meal, in Mexico with soy, in Iraq with sesame and dates, and in the South Pacific with coconuts. Independent, self-supporting Meals for Millions affiliates are active in Brazil, Burma, Ceylon, Formosa, Hawaii, India, Israel, Japan, Mexico, Pakistan, the Philippines, and Thailand, studying, interpreting, and expanding the program.” Address: Former president, George Pepperdine College; Past District Governor, Rotary International; Rotarian, San Diego, California.

178. *Soybean Digest*. 1960. Four soybean trucks now touring Spain. June. p. 23.

• **Summary:** Four USDA soybean trucks featuring soybeans and soybean products are now touring Spain. They have recently been at the most important fairs in Italy. In Spain the exhibit is a joint venture with the Spanish Extension Service, which supplies technical personnel and publications. Pamphlets on the advantages of soybean meal printed by the Spanish Ministry of Agriculture are distributed free to interested farmers. The office of the Soybean Council in Spain is also distributing a large number of copies of its magazine, *Nutricion*. The mobile exhibit plans to visit Santander and La Coruna (when General Franco is there). A photo shows a large statue of a steer that is part of the exhibit.

179. *Chemurgic Digest*. 1960. The global market for soybeans. Sept. p. 14-15.

• **Summary:** “A ready market for \$367 million worth of U.S. soybeans and soybean products is ours for the taking. That was the message that Howard L. Roach, president of the Soybean Council of America, Inc., delivered to officials of USDA’s Foreign Agricultural Service and others in the Department of Agriculture after his last trip abroad in behalf

of soy products markets... Mr. Roach presented a carefully documented report, country by country, following a 70-day trip covering 16,000 miles through Europe, the Mid-East, India and Pakistan. He left the United States Jan. 23 and returned April 4...

"The international marketing program is being developed under P.L. 480 on a 42-nation contract between FAS and the Council signed last January." In the report, Mr. Roach discussed the present and/or potential status of soybeans in Egypt, Greece, Israel, Lebanon, India, Pakistan, Iran, Turkey, Yugoslavia, Spain, Germany, Netherlands, Belgium, France, the United Kingdom, and Ireland. A photo shows Howard Roach and FAS administrator Max Myers.

Note: This is the earliest document seen (Sept. 2009) concerning the activities of the Soybean Council of America or the American Soybean Association in Africa or the Middle East, or (by country) in Egypt, Israel, Lebanon, or Iran.

180. De Salas, Javier. 1960. Spanish operations of the Soybean Council. *Soybean Digest*. Sept. p. 48.

• **Summary:** "Two years ago I had the pleasure of appearing for the first time before your convention to tell you of the plans for the future.

"It is indeed a satisfaction for me to appear again and to inform you that the plans presented to you last time have not been left for 'Manana' but have been surpassed in all respects.

"Let us start with our work on protein. The number of meetings organized by the Soybean Council in the last 2 years tells the story quite clearly.

"We have organized meetings at Valladolid, Burgos, Zaragoza, Canary Islands and Santander.

"The problem we encountered at the beginning for the organization of these meetings was the lack of a nationwide group with whom we could work. That has been turned to our advantage. At present the Soybean Council of America is the organization that, with the cooperation of local groups, gets this work done. I have received letters from the chief of the Livestock Syndicate in Spain congratulating the Council for the excellent work carried out.

"In the closing session of our last week of studies held in Santander, the director general of livestock said that these weeks of studies have helped considerably to bring about better nutrition of Spanish livestock. In fact, the main organization problem we are having now is to keep the meetings down to manageable size. The prestige of our weeks of studies is so firmly established that everybody wants to talk in them.

"Let us see what all these meetings have accomplished from the viewpoint of actual increases in soybean meal consumption in Spain. In 1957 Spain imported 1,500 tons of soybean meal. In 1959 the import was up to 18,000 tons, in 1960 it is up to 35,000 tons and in 1961 we expect the figure to reach about 60,000 tons.

"At the same time the Spanish government has recognized the value of soybean meal to such an extent that special pamphlets have been published by the Spanish extension service on the use of soybean meal in animal feeding.

"Let us talk now about the oil situation. At this point it is specially interesting to mention the good will created in Spain by the market development activities. I can assure you that when I started working for the Soybean Council even my family was convinced that I was trying to poison them.

"At present more and more people are becoming aware that soybean oil properly refined can substitute perfectly for olive oil. Even in the middle of the olive oil area there are people who ask for soybean oil instead of olive oil. A point of great importance is the fact that the Spanish government has published in a magazine edited by the supermarkets organization of the buying agency of the government an article defending soybean oil versus olive oil in such strong terms that I can tell you frankly that if during one of my absences from the office this article had been sent out by any of my staff there would have been trouble about it.

"About the imports of soybean oil, it has been definitely proved that Spain will be a consumer of these products for many years to come. The efforts of the Spanish government to encourage peanut and soybean cultivations in Spain have not been successful. Even in years like 1959 when everybody talked of a very large olive oil crop, it turned out that Spain had to import almost 200,000 tons of soybean oil.

"Taking into consideration all these factors, my firm belief is that Spain needs soybean oil, one year because it has a bad crop of olive oil, another year because Italy has a bad crop and, therefore, buys the olive oil from us.

"In closing, the most interesting accomplishment of the Soybean Council in Spain, in my opinion, is that soybean oil is slowly but surely being liked by more and more Spanish people. We are working now towards getting the Spanish government to allow soybean oil to be sold as such. This would allow the Spanish public to get used to a certain type of oil instead of what is happening now, where the various types available do not allow the consumer to form a liking for any standard type." Address: Director for Spain, Soybean Council of America, Madrid, Spain.

181. McVay, M.D. 1960. The need for soybean research. *Chemurgic Digest*. Sept. p. 4-6.

• **Summary:** "You know the soybean: its tremendous increase in production in the last 25 years; the huge growth in demand for its meal and oil. The soybean has been called the miracle crop, and rightly so. It has changed midwestern agriculture more than any other crop. Because of soybeans all Americans eat better for less cost."

"Up 12,000 per cent: Thus, in just 34 years, acreage increased 50 times, yield per acre was boosted 250 per cent, and production skyrocketed 12,000 per cent.



“Marketing obviously has kept pace. Processing and export demand have been equal to the farmer’s best. Or, put in proper order, I should say soybeans were grown because of processing and export demand.

“During the 1958-59 crop year we processed more than 400-million bushels of soybeans. This provided 9½-million tons of meal of which 9-million tons were used domestically—mostly for animal feeds—and 525,000 tons were exported. Those 400-million bushels also produced 4.3-billion pounds of oil—3.4-billion pounds for domestic consumption, 90 per cent for edible uses such as margarine, shortening and salad dressings; 10 per cent for industrial uses such as paint, varnish, alkyd resins and plastics. 900-million pounds were exported; the largest foreign customer was Spain who bought 450-million pounds.” Address: Cargill, Inc.

182. Strayer, George M. 1960. Commodity organizations that sell can find dollar markets overseas. *Chemurgic Digest*. Sept. p. 7-11.

• **Summary:** Today in the USA we have large surpluses of wheat, corn, cotton, rice and grain sorghums. “They are, in part, a result of the three great revolutions that have taken place in American agriculture in the 1900s: 1. Mechanization. 2. Hybridization. 3. Feeding efficiency.” “Our single greatest problem today is wheat.”

In 1946, just after World War II, the USA produced 180 million bushels of soybeans. “Many people thought we would drop back to 100 million bushels annual production.” But instead production has increased, until today it is now nearly 600 million bushels. “Almost 25 million acres have been removed from corn, oats, wheat, cotton and hay acreages and transferred to the soybean crop. Today the U.S. is the world’s largest net exporter of fats and oils and oilseeds. In 1940 we were the world’s largest importers. Where have the soybeans gone? Last year we exported 110 million bushels of soybeans—1 bushel out of every 5 produced.” The soybeans were “sold into markets which did not exist for use 12 years ago! Japan bought almost 50 million bushels. The European countries bought 45 million bushels. And every bushel was sold for *dollars and only dollars*.”

“Part of our increase is due to the breaking off of political relations between Japan and Red China, the traditional source of soybeans for Japan.”

Discusses how these large soybean exports were developed. Recently Spain imported 300,000 tons of U.S. soybean oil. Last year Italy purchased 80,000 tons of soybean oil meal.

“Last winter the Soybean Council of America signed a ‘global development agreement’ with the Foreign Agricultural Service [FAS]...” Representatives of the fats and oils division of the FAS work together with representatives of the Soybean Council to sell soybean oil overseas. But the real work, Strayer emphasizes, must be done by “the

commodity organizations representing the individual commodities... My point is this. No one else is personally interested in your markets except you!”

183. Castro Ramos, R. de; Nosti Vega, M. 1960.

Características relacionadas con la refinación de los aceites de soja importados [Problems related to the refining of imported soybean oils]. *Grasas y Aceites* 11(5):213-19. Sept/Oct. [4 ref. Spa]

Address: Instituto de la Grasa y sus Derivados.

Departamento de Química y Microbiología, Sevilla [Spain].

184. Theimer, Leo Daneck. 1960. [Thermosetting and thermoplastic plates, tubes, bars, and molding powder based on soybean flour or its proteins]. *Spanish Patent* 262,450. Nov. 18. (Chem. Abst. 56:11828a). Application filed 14 Nov. 1960. [Spa]\*

• **Summary:** Defatted soy protein is processed like casein to give thermoplastic compounds.

185. *Soybean Digest*. 1960. Spanish magazine carries soybean news. Nov. p. 23.

• **Summary:** “For some time the Spanish office of the Soybean Council of America has been successfully broadcasting a weekly program over the Madrid radio to popularize the uses of soybean oil and feed in that country. Recently, it has entered into an agreement with *Lípidos*, a Spanish bi-monthly journal devoted to fats and oils, whereby the magazine has undertaken to include soybean news and other relevant material as one of its regular and fixed features.

“Quoting the editor of *Lípidos*: ‘It is an indisputable fact that soybean oil is gaining markets everywhere for a reason that carries weight in the present-day world—its cheapness. And the Soybean Council of America, an organization which was founded 2½ years ago by the soybean producers and the soybean processors in the United States, has as its objective the spreading of the uses of the soybean all over the world. And it is not just a publicity entity, it is as much at the service of the consumer as of the producer.’”

186. Arnould, Francis. 1960. La vie et l’oeuvre du Dr. Berczeller et le soja alimentaire [The life and works of Dr. Berczeller and soyfoods (Continued—Document part II)]. *Revue d’Histoire de la Médecine Hébraïque* 13(4):153-68. Dec. [Fre]

• **Summary:** Continued from page 159. Soy flour has numerous practical advantages. Its adds stability and shelf life to breads. Containing very little water, it is lightweight and easy to transport. It is extremely versatile, for use in many foods and dishes. It also has special uses, in war provisions and relief foods for refugees. Because of its light weight and nutritional density, it was used as a foodstuff by German skydivers / parachutists.

III. The big questions and projects: Berczeller was interested in the problem of world protein shortages. Germany had long had a serious deficiency of protein and fat, which could be corrected by soy. Germany imported about 1 million tons of soybeans before the war, and these soybeans were largely treated by the Berczeller process—which was a triumph. Russia experienced grave famines in about 1926, as well as at other times. So Russia turned to the soybean and cultivated it on large expanses of land. Dr. Berczeller traveled to Russia in about 1927 to create a modern soya industry there. North Africa and black Africa suffer from undernutrition and protein malnutrition. Soybean cultivation and a soyfoods industry would offer a solution to the problems of the entire continent.

In 1936 the Maharaja of Baroda [Maharaja Sayajirao Gaekwad III] well understood India's protein problem and had a book published on soya by Indian physicians. But they ignored the decisive progress made by Berczeller, so they were not able to develop utilization of soya that was properly treated. Berczeller was thinking as early as 1932 that introducing the food use of soya to India would be the main human goal of his life.

Even before 1932 Dr. Berczeller saw—at an early date—the great question of world protein supply and undernutrition. He studied the problem of the balance of nutrition and food in Germany scientifically. In 1932, Dr. Berczeller met F. Arnould because he took interest in the general econometric studies done by F. Arnould; this became the basis of their relationship [thus F. Arnould seems to have been an economist]. Thus Dr. Berczeller was a pioneer or precursor of in the field of agricultural and food econometrics.

He was very interested in various international organizations. He foresaw the need for an organization or international laboratory for the study of nutrition and food. From 1932 he told us that he would like to donate his fortune—which was very large—to such an organization.

His ideas and goals were a perfect match with those of existing organizations, the International Institute of Agriculture (Rome) before 1939, and the Food and Agriculture Organization [FAO] after World War II. Particular circumstances—and perhaps even occult occurrences—impeded the development of his works under this normal framework. He was interested in new protein sources, such as yeasts, and in the synthesis of amino acids and even poly-peptides.

IV. The life of Dr. Berczeller. We knew only a part of Dr. Berczeller's life and work. We would like to gather documents, testimonies, opinions, even criticisms from the many people who knew him. Dr. Berczeller explained to us that the idea of studying soya came to him in 1912 after attending a soyfoods dinner at the Japanese embassy in Berlin. He had been indisposed with a headache. So the slight toxicity of seemed to him to be a question of great

importance. Already specializing in food questions, he had been an expert in the Austro-Hungarian government in this field during World War I (1914-1918). In about 1918-1920 he worked in the laboratory of Dr. Wasserman studying the proteins in blood. In 1921-22 he invented his process for treating soya. He was aided by the laboratories of the Skoda Foundation in Czechoslovakia.

In about 1924 Winston Churchill wrote a favorable article about food uses of soya in the London *Times*. A soyfoods dinner was given by the British Empire League in London; Winston Churchill attended.

In 1926 Dr. Berczeller went to Russia to organize a soya industry. He was considered to be named "Honorary General of the Red Army." He returned in 1930. In Germany his patents were used or exploited by Hansa Muehle of Hamburg, a huge milling enterprise. His products based on soya flour were sold by the Edel Soja Society in Berlin.

In England his soy flour was produced by the company named Soyolk in Rickmansworth near London. But a lawsuit (*procès*) opposed Soyolk to Dr. Berczeller. He later lost this lawsuit in about 1930.

A factory for making soy flour was also started in the Netherlands.

As early as 1929 Dr. Berczeller presented to the French government a proposal to introduce soy flour into human feeding. When we went to Quai d'Orsay [headquarters of the French government] in the company of Dr. Berczeller in 1932, we reminded our audience of our earlier proposal.

To discuss the introduction of soy flour in the food of large organizations, and of armies / militaries in particular, he went to see many important persons—Joseph Stalin, B. Mussolini, Miss Dorothy Thompson, secretary to President Franklin D. Roosevelt, etc. From 1929 to 1939 Dr. Berczeller travelled extensively in Europe to study on location the food of various countries: Romania, Bulgaria, Yugoslavia, Italy, Portugal, etc. He often traveled to Great Britain, where he studied the countries of the British Empire.

Dr. Berczeller in France: In 1932, when Dr. Berczeller asked us to present his work on soy in France, the agricultural situation in France was not favorable to the use of this progressive item, agriculture being then in the mist of a crisis of overproduction, with too much wheat, too much meat, too much milk, etc.

Those in charge were told to keep his ideas on file and reopen them when the next war broke out. This actually happened. In Oct. 1939 we asked CNRS, the National Center for Scientific Research, to invite Dr. Berczeller to come to France. He arrived in Paris via Geneva with an introduction from the secretary general of the League of Nations. We worked at Toulouse in 1939-40 on a program of soybean cultivation in southern France. During that time he stayed in Paris, at CNRS, working on introduction of soya into the army's food. But in June 1940 the defeat of France by Germany interrupted our work. Dr. Berczeller retreated to

Toulouse.

After the armistice, soy flour could have been able to render a great service to France for feeding children. Some of it could have been imported from the United States, but human and political considerations impeded the realization of this.

Dr. Berczeller departed for Marseilles. We lost track of him, but we re-established contact after the Liberation (spring 1945). We tried to import some soy flour from the USA to feed undernourished people returning from the German camps. But incredible blunders on the part of the State's relevant departments caused our efforts to run aground. Several 'Liberty Ships' loaded with soja beans arrived in France but the knowledge as to what to do with these products was not on hand. Finally, they were given to... hogs.

Dr. Berczeller encountered difficulties of all types in France after the Liberation. Ruined, unknown, poorly received, old and sick, he finally lost his equilibrium and was no longer able to conduct his complex affairs and delicate studies. He was hospitalized at the hospital Lariboisière, then sent to various psychiatric hospitals. In this unfortunate evolution, CNRS has taken a very heavy responsibility by its incomprehension and by the false information that it gave. One could write an entire book recounting these misadventures of Dr. Berczeller in the French scientific milieux.

In 1940 Dr. Berczeller, working with a Quaker group near Toulouse, studied the importation of a soy-based infant formula made in the USA. The Quakers later helped him greatly in trying to rectify injustices, but without success. In 1952 Prof. Veznar of Zurich, Switzerland, helped arrange for Dr. Berczeller to be placed in the *Maison de Santé Nationale de Saint-Maurice*. The chief medical officer of this establishment, Prof. H. Baruk, cared for him with the greatest devotion. But he was not able to stop the development of an old heart malady. Dr. Berczeller died at Saint-Maurice on 14 Nov. 1955.

187. Castro Ramos, R. de. 1960. La pérdida en neutralización y otras propiedades de los aceites de soja españoles [Neutralization loss and other properties of Spanish soybean oil]. *Grasas y Aceites* 11(6):248-55. Nov/Dec. [7 ref. Spa]  
Address: Instituto de la Grasa y sus Derivados. Departamento de Química y Microbiología, Sevilla [Spain].

188. Mendes Ferreira, A. 1960. Subsídios para o estudo de uma praga do feijão (*Zabrotes subfasciatus* Boh.–Coleoptera, Bruchidae) dos climas tropicais [Materials for the study of a pest of beans from tropical climates]. *Garcia de Orta (Portugal)* 8(3):559-81. [Por]\*

• **Summary:** Discusses *Zabrotes fasciatus*.

189. Doi, Tadao. ed. 1960. Nippo Jisho: Vocabulario da lingua de Iapam [Vocabulary of the language of Japan]. Tokyo: Iwanami Shoten. 822 p. 22 cm. [Por; Jap]

• **Summary:** This is facsimile edition of the original 1603 edition, the second earliest dictionary of the Japanese language compiled by Europeans.

Soy-related terms in this dictionary include: Abura ague [Abura-agé]. Aburidôfu. Amazaque [Amazake]. Cabe [Tofu]. Côji [Koji]. Daizzu [Daizu]. Dengacu [Dengaku]. Fanben [Hanben]. Icchô. Mame. Graos, ou feijoes de Iapao [Soybeans]. Miso [made with rice]. Misocoxi [Misokoshi, a miso strainer]. Misoya [A shop which sells miso]. Misoyaqijiru [Miso-yaki-jiru, a soup made with grilled miso and diced tofu]. Misôzzu [probably a soup seasoned with miso resembling Zosui]. Nattô. Nattôjiru. Tofu. Tofuya [A shop which makes and sells tofu]. Tamari. Vdondôfu [Udon-dôfu]. Xôyu [Shoyu, or soy sauce]. Yudôfu. Address: Nagasaki College of Japan.

190. Meals for Millions Foundation. 1960. Friendship Food for a Hungry World: Distribution summary. Los Angeles, California. 29 p. Undated. 28 cm.

• **Summary:** "The world-wide travels of the '3 cent meal' of Multi-Purpose Food, September 1946 to June, 1960 [13 years and 9 months]: 62 million meals [distributed] including 3,429 relief shipments to 127 countries through 210 cooperating agencies."

This 29 page typewritten booklet contains a complete listing of all the shipments of MPF over 14 years, from September 1946 through June 1960. However no dates are given for shipments to individual countries.

Contents: What is the Meals for Millions Foundation? Multi-Purpose Food (MPF): What it is, what it does. Index of countries. Distribution totals (Sept. 1946–June 1960). Acknowledgment.

The index of countries lists the "Country," the "American Agencies or Denominations Cooperating and/or Served," the "Number of Lbs." and the "Distributing and Recipient Agencies." Under each country is the number of shipments and the number of pounds shipped.

In the Index, the countries are listed alphabetically by region and within each region alphabetically by country, as follows (however in the body of the booklet they are listed alphabetically by country name). Countries receiving more than 50,000 lbs. (25 tons) will be noted: Africa: Angola, Belgian Congo (52,657 lb), Camerouns [Cameroon], Egypt, Eritrea, French Equatorial Africa, Ghana, Kenya, Liberia, Libya, Mauritius Is., Morocco, Mozambique, Nigeria, Republique du Congo [Congo-Brazzaville], Rhodesia, Sierra Leone, South Africa, Tanganyika, Tunisia, Uganda.

Asia–Near East: Iran, Iraq, Israel, Jordan, Lebanon (56,910 lb), Oman, Persian Gulf, Turkey.

Asia–Far East: Afghanistan, Borneo, Burma, Cambodia, Ceylon, China (358,957 lb; 1946–1951), Goa, Hong Kong



(238,760 lb), India (1,394,707 lb; 742 shipments. Note: Indian MPF became available in 1956, and shipments from the USA were discontinued; 558,072 lb of Indian MPF were made; 410 shipments), Indonesia, Japan (535,250 lb), Korea (1,254,225 lb; 489 shipments), Laos, Macao, Malaya, Nepal, Okinawa (20,616 lb), Pakistan (83,292 lb), Philippines (122,103 lb), Taiwan (46,089), Thailand, Vietnam.

Asia-Pacific Islands: American Samoa, Caroline Islands, Fiji Islands, Guadalcanal, Hawaii, Marshall Islands, New Hebrides.

Europe: Austria (82,159 lb), Belgium, Czechoslovakia, England, Finland, France (124,996 lb), Germany (206,185 lb), Greece, Hungary, Italy, Luxemburg [Luxembourg], Netherlands, Poland, Rumania, Spain, Switzerland, Trieste, Yugoslavia.

Europe-North Atlantic Islands: Cape Verde Islands, Madeira Island.

Latin and Central America: British Honduras, Canal Zone, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama.

South America: Bolivia, Brazil (198,581 lb), Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela.

Caribbean Area: Cuba, French West Indies, Haiti (110,231 lb), Jamaica, Puerto Rico, St. Lucia, Virgin Islands.

North America: Alaska and Aleutian Islands, Canada (51,836 lb), United States (146,635 lb; American Indian relief, Migrant relief, School lunch and institutional projects {Clifton's Golden Rule Cafeteria donated 12,500 lbs}, Miscellaneous).

Additional countries reached through overseas parcels only: Argentina, Cyprus, Denmark, Malta, New Zealand, Norway, Nyasaland, Pitcairn Island, Saudi Arabia, Scotland, Sudan, Sweden, Trinidad.

At the end of all the countries (p. 28) is a box titled "Total Relief Distribution": 3,249 shipments [or perhaps 3,429], 6,412,256 pounds [3,206 tons, or 229 tons a year average for 14 years], 51,298,048 "meals" of MPF. On the next page are the details of the "Distribution totals."

There is also a special acknowledgment at the back to the U.S. Navy and the U.S. Naval Air Reserves "for their cooperation in transporting approximately 200,000 lbs. of M.P.F. during 1959-1960. Operation Handclasp, a people-to-people project of the U.S. Navy, originating in San Diego, has carried shipments to the Far East and to South America. Planes of the U.S. Naval Air Reserves have carried emergency supplies of MPF to disaster areas, such as flood victims in Nagoya, Japan, and to earthquake victims in Agadir, Morocco."

Note: The countries receiving the most MPF by weight are (in descending order of amount) are: India, Korea, Japan, China, Germany, France, Philippines, and Haiti.

A photo shows the cover of the 29-page summary document. This photo and photocopy of the document were sent to Soyinfo Center by Chris Dodson of Freedom from

Hunger Foundation, Davis, California (Nov. 2010). Address: Los Angeles, California.

191. Soybean Council of America. comp. 1960. II Internationale Studienwoche fuer Tierernaehrung [Second International Animal Nutrition Conference]. Madrid, Spain: SCA. 515 p. Held 19-22 Oct. 1960 in Madrid. Co-sponsored by Instituto Nacional de Investigaciones Agronomicas. [10+ ref. Ger]

• **Summary:** The various papers presented at this conference by authors from many countries were divided into 6 sessions. Introductory speeches were given by the Soybean Council of America and the U.S. Feed Grain Council. Address: Spain.

192. *Soybean Digest*. 1961. Now can sell soybean oil straight in Spain. Jan. p. 16.

• **Summary:** "For the first time U.S. soybean oil can be sold directly to the Spanish people without combining with olive oil, it was announced at the 20th International Fair at Zaragoza, Spain. This should result in a marked increase of exports of U.S. soybean oil during the coming year.

"The Spanish government has required that imported vegetable oils be blended with home produced olive oil to protect Spanish industry and to make the resulting product more palatable since people were accustomed to the olive oil taste and not soybean oil. But many Spanish people have become acquainted with pure soybean oil through the Soybean Council's exhibits at the trade fairs.

"So the Spanish government is now permitting the sale of straight soybean oil because some consumers now prefer it, and it is cheaper than the blend with olive oil—20 pesetas to the litre for the straight soybean oil as compared with 21 pesetas for the blended product.

"Javier de Salas, Spanish director for the Council, says sales of U.S. soybean oil in Spain should reach 500 million pounds in 1960-61 under the new ruling, as compared with 446 million pounds this past year. In 1955, before the Council's export program began, sales of U.S. soybean oil to Spain were only 36 million pounds."

193. *Field Crop Abstracts*. 1961. Current agricultural research in Africa on annual field crops and grasslands. 14(1):1-7. Feb.

• **Summary:** According to replies to a questionnaire sent by *Field Crop Abstracts* to agricultural research institutes and experiment stations in Africa, soybeans are being tested in Angola (Chianga Plant Improvement Station, Humpata Agricultural Centre, Malange Agricultural Centre, Mariano Machado Central Station of Animal Husbandry), Gambia (Gambia Rice Farm), Ghana (Babile Agricultural Station), and Kenya (Eldoret Agricultural Experiment Station, Kakamega Experimental Station, Mwea Irrigation Research Station). Japanese kudzu and native kudzu is being tested in Liberia at the Central Agricultural Experiment Station

(Suakoko).

Includes a valuable list of all major agricultural experiment stations in these African countries.

194. Strayer, George M. 1961. Editor's desk: Market work pays off [in Spain]. *Soybean Digest*. March. p. 4.

• **Summary:** "Dramatic demonstration of the manner in which market development work on soybean products can be made to pay off is the recent purchase—all for dollars—of 50,000 metric tons of soybean oil by the Spanish government. American embassy officials in Spain, including our agricultural attache, have worked long and hard assisting the Spanish government to get itself in a better foreign exchange position. The work has paid off.

"During this period of time the Spanish people, along with their government, through sales of soybean oil under P.L. 480 and through the market development work carried on there by the Soybean Council, have learned that soybean oil is a high quality economic product.

"There were some dollar purchases of soybean oil by Spain last year, but this 50,000-ton order, placed with private business in the United States with no U.S. government funds involved, is real and concrete evidence of what happens when properly conducted market development work begins to pay off.

"To William Lodwick, U.S. agricultural attache in Spain, who has worked long and hard with the Spanish governmental representatives on this matter, we doff our hats!"

195. Fischer, R.W. 1961. Stimulating foreign markets for American-grown farm products. *Chemurgic Digest*. May. p. 5-10.

• **Summary:** Includes a discussion of (1) The origins of the Agricultural Market Development and Assistance Act, better known as Public Law 480; (2) Howard Roach and the origins of the sale of soybean oil to Spain.

A large portrait photo shows R.W. Fischer. Address: Asst. to the President, Soybean Council of America, Inc..

196. De Salas, Javier. 1961. Soy outlook is bright [in Spain]. *Soybean Digest*. June. p. 42-43.

• **Summary:** "The Soybean Council's operations grew substantially in Spain in 1960, not only from the standpoint of increased activities but in positive results as well."

"The Nutrition Magazine and the Oil Magazine, which are published by the Council in Spain, have gained wide acceptance and we have had to increase the circulation of both publications.

"The most important achievements are:

"1—The Spanish government has officially acknowledged, through the Ministry of Commerce, the existence of a soybean oil market separate from the traditional olive oil market.

"2—Authorization has been granted permitting pure soybean oil to be bottled and labeled and sold as such. The previous attitude of the government was that only olive oil could be sold as such.

"In view of the newly prevailing atmosphere, the Council has adopted more of a hard sales approach. The first project started under this new approach was the meeting held in Seville, in March, with the theme, 'Soybeans in Nutrition and Industry.'

"The meeting held in the center of the olive oil area was an experiment to test how this more direct approach would work out in Spain. We can now say the results have been outstanding.

"At this Seville meeting, Dale McMillen, president of Central Soya, Fort Wayne, Indiana, delivered a paper on, 'What Soybeans Products Have Meant in the Development of the U.S. Nutrition Industry.' The Comisaria, buying agency of the Spanish government, lent its two top technicians, Dr. Ramon Lenganan and Dr. Elias Palau, to deliver papers on the importance of soybean products.

"The opening speakers, Dr. Martinez Moreno and myself, emphasized the close cooperation between the soybean and olive interests. This attitude resulted in a nationwide coverage of the meetings and in assurance of continued and full support of the Council's activities by the Spanish trade groups.

"The Soybean Council had rather avoided activities in the olive oil belt in the past. But as a result of these meetings the Council reversed its policy and presented a stand at the Seville Trade Fair in April with considerable success.

"Also, the next week of studies on animal nutrition, the big event of the year organized by the Council in Spain, will be held in Seville in February 1962. This event annually draws about 600 attendants from all over Spain.

"We can now say that soybean products will be imported into Spain more and more in future years, for the following reasons:

"Soybean oil: The average annual deficit of Spanish edible oil production is about 150,000 tons per year. The attitude of the Spanish government and the Spanish trade groups toward soybean oil has improved to such an extent that more and more Spanish interests are doing our job for us—that is, defending soybean oil.

"Soybean meal: This product has been accepted as an essential ingredient by the Spanish mixed feed manufacturers. At the various meetings organized by the Council, official statements have been made jointly by the Spanish poultry cooperatives and the mixed feed manufacturers that soybean meal is a must for the development of the Spanish livestock and poultry industry.

"The Spanish government very recently decided to allow the direct purchase of soybean meal by consumers. It is expected that this decision will result in increased consumption due to the better prices obtained.

“A moderate estimate of the imports of soybean meal in Spain in the near future is 100,000 tons per year compared with no imports at the start of the Council’s operations, and 40,000 tons in 1960.

“Soy flour: The interest engendered by the experiments carried out by the Council with soy flour in bread and in the Spanish diet, will result in an increased demand for soy flour. We hope that the Spanish Army will request soy flour in the near future in order to improve the nutritive qualities of its rations.”

A large photo shows a billboard promoting olive oil. These have recently been placed “along Spanish roads by the Institute of Propaganda of Olive Products. The olive oil interests did not consider such publicity necessary until the introduction of soybean oil into Spain.” Address: Director for Spain, Soybean Council of America, Inc., Madrid.

197. Gutiérrez González-Quijano, R. 1961. Problemas en la conservación del aceite de soja [Problems in the storage of soybean oil]. *Grasas y Aceites* 12(4):190-98. July/Aug. [18 ref. Spa]

Address: Instituto de la Grasa y sus Derivados. Departamento de Química y Microbiología, Sevilla.

198. Scott, Walter M. 1961. Current status of soybean research under P.L. 480. *Soybean Digest*. Sept. p. 39-43.

• **Summary:** Contents: Introduction. Approved grants [for soybean research under P.L. 480 which is either under way or in the planning stage]: Finland, France, Israel, Italy, Poland, Spain, United Kingdom.

For each country is given: The title of the research project, name of the organization doing the research, the amount of the grant in the local currency and U.S. dollars, the month and year of approval.

A small portrait photo shows Walter M. Scott. Address: Asst. Director, Foreign Research and Technical Programs Div., ARS, USDA, Washington, DC.

199. Puerta, R.J.; Ruiz-Fornells, R.; Alonso, M. de E.A. 1961. [Serial-sowing trials with soyabean. Comparative varietal trials with soyabean]. *Anales. Instituto Nacional de Investigaciones Agronomicas (Spain)* 10(4):525-642. [Spa]\* Address: Centro Cerealicult. Madrid, Spain.

200. Chiu, Wen-Chiang Liang; van Duyne, Frances. 1961. Soybean curd: Preparation, calcium content, and palatability. Waterloo, Iowa: Soybean Council of America. 17 p. 21 cm. • **Summary:** “Reprinted from *Illinois Research*, Fall, 1961. published quarterly by the University of Illinois Agricultural Experiment Station,... Urbana, Illinois.”

Page 17 lists the offices and address of the Soybean Council of America, Inc. The home office is in Waterloo, Iowa. The main international office is in Rome, Italy. Other overseas offices are in Antwerp, Belgium; Bogota,

Colombia; Copenhagen, Denmark; Cairo, Egypt; Paris, France; Hamburg, Germany; New Delhi, India; Teheran, Iran; Jerusalem, Israel; Karachi, Pakistan; Lima, Peru; Madrid, Spain; Ankara, Turkey; London, United Kingdom.

Note: Why would the Soybean Council of America publish a booklet on soybean curd? Perhaps they thought it could become part of the American diet. Address: Univ. of Illinois, Urbana, Illinois.

201. Ruiz-Fornells, R. 1961. Soja, aspectos técnicos y económicos de su cultivo en España [Soya: Technical and economic aspects of its production in Spain]. Madrid, Ministerio de Agricultura. 16 p. (Hojas Divulgadoras, 21-61H). [Spa]\*

202. Soybean Council of America, Spanish Office. 1961? The role of soybeans and soybean products in the Spanish food supply. Madrid, Spain: AmSoy. 174 p. Undated. [23 ref. Eng]

• **Summary:** On the front page: “This publication is the result of the foreign market development activities of the Soybean Council of America, Inc. in cooperation with the Foreign Agricultural Service of the United States Department of Agriculture.”

In the center of the front cover is the new “AmSoy” logo of the Soybean Council of America, Inc.

Summary: The Spanish diet is short on animal protein and on fats; both need to be increased significantly.

Survey on the diet:

Protein furnished by Cereals

Protein furnished by Pulses

Summary on Vegetable Protein in the Spanish daily Diet

Protein furnished by Meat

Protein furnished by Eggs

Protein furnished by Milk

Protein furnished by Fish

Summary on Animal Protein in the Spanish daily Diet

Summing up the Protein Content of the Spanish daily

Diet

Problems of Spanish livestock:

Livestock Market Products

The Mixed Feed Industry

Postal addresses of mixed feed manufacturers

List of laboratories

Edible oils:

Production

Oil Trade

Exports

Imports

Purchasing procedures

Purchasing Organizations

Methods of Spanish Foreign Trade

Freights unloading and refining

Unloading Stations



Freight and Transportation

Refining

Oilseed:

Trade Imports, Exports

Crushing industry

Soybean cultivation in Spain

The role of soybeans in the Spanish food supply

Literature

Page 139: "In 1917 the Spanish Consul in Shanghai sent to the Spanish State Department a report on soybean cultivations in China, and proposed to start growing this plant in Spain.

"A few years later the Agricultural Stations of Jerez de la Frontera and Malaga (both in the South of Spain) began experimenting with this new crop in small plots of land. The soybeans grown were used only for animal feeding.

"In 1925 soybeans were grown in the Province of Lérida (Catalonia), but only on a small scale, most of the production being devoted to the preparation of special foods for diabetics. Some tentative cultivation was also started in the Province of Pontevedra, in the Northwest of Spain, where the climate is humid and mild.

"The School of Agricultural Engineers began experiments on soybean cultivation between 1930 and 1935; the crops obtained on small pieces of dry land were equivalent to a yield of 680 to 720 kgs. per hectare. Further experiments were interrupted in 1936, at the time of the Civil War.

"In view of the increasing shortage of olive-oil, the Government decided to encourage cultivation of oilseeds, soybeans among them. The Ministry of Agriculture published an order in the State Gazette of January 30th, 1957, regulating future cultivation of soybeans. This order stated that the Servicio Nacional del Trigo (National Wheat Service) would pay 8 pesetas per kilogram to any farmer selling his crop to the Service; at the same time, the National Wheat Service would provide fertilizers and grant credits to encourage soybean cultivation. Soybean cultivation, however, did not reach high production figures, as can be seen in table No. 91a." This table (p. 152) shows that soybean production in Spain increased from 250 tons in 1955 to 350 tons in 1960. Address: Spain.

203. De Salas, Javier. 1962. Direct meal sales promise expanded market in Spain. *Soybean Digest*. May. p. 64.  
 • **Summary:** "A purchase authorization for \$1.5 million worth of soybean meal issued directly to Spanish consumers by the U.S. Agency for International Development (AID) was a great improvement. Previously, authorizations had been made to the Spanish government with consumers purchasing from the government. It is expected that this trend toward liberalization will continue, thereby increasing the consumption of soybean meal.

"The trend toward acceptance of soybean oil by the

Spanish consumer and the possibilities of a continued deficit in the edible oil production of Spain have prompted an increase in unloading facilities for bulk oil all over Spain. The port of Vigo has installed two tanks for soybean oil and Demagrisa has inaugurated an unloading station in Barcelona. Respective capacities of these two installations are 10,000 and 7,500 metric tons.

"The First International Week on Nutrition of the Fighting Bull held at Salamanca, center of the fighting bull breeding area, was an outstanding success as indicated by the huge press, television and radio coverage it received.

"We have contacted the National Catholic Welfare Conference and it has agreed to incorporate testing of soy flour in its noodle manufacture. Several Spanish commercial organizations have agreed to carry out soy flour experiments in their plants. This office expects that the fifth Armed Forces International Nutrition Conference and the second Week of Studies on Human Nutrition, both held in Madrid in April, will allow us to establish many contacts that will be of use later in the human nutrition center we hope to establish." Address: Director for Area II, Rome, Soybean Council of America, Inc.

204. Scott, Walter M. 1962. Current status of soybean research under P.L. 480. *Soybean Digest*. May. p. 44, 46-48.

• **Summary:** Gives a summary of progress on grants approved prior to Sept. 1971 in Finland, France, Israel, Italy, Japan, Poland, Spain, and the United Kingdom. There are now additional proposals under consideration in France, Indonesia, Israel, Italy, Japan, and Spain. For each project, the size of the grant in that country's currency is given.

In Finland, for example, a grant has been approved for an "Investigation of continuous multistage countercurrent crystallization of linseed and soybean fatty acids as a practical method of producing pure unsaturated fatty acids," by the University of Helsinki, Viik, Malmi. Amount: \$70,500. Approved Feb. 1960. Address: Asst. Director, Foreign Research and Technical Programs Div., ARS, USDA.

205. *Soybean Digest*. 1962. Soybean Council of America, Inc.: The Second Annual Staff Conference. July. p. 18-20.

• **Summary:** A large photo shows the entire staff of the Soybean Council of America at Waterloo, Iowa, June 4-15, standing in four rows. "Since the Council was formed a little over 5 years ago, business and market development has increased to where exports [of soybeans and products] amount to over \$1.5 billion per year from the United States. The International Operations Office of the Soybean Council is now operating in over 42 countries throughout the world. For each person is given the name, position, country, and city. These include: Andre Tawa of Egypt. Dominic Marcello and Dr. Fred Marti, international relations, Rome, Italy. Howard L. Roach, SBC president, Waterloo, Iowa. Dr.

James W. Hayward, SBC director of nutrition, Minneapolis, Minnesota. Dr. Carlos Giraldo, Columbia. Reginald L. Wood, United Kingdom. Vasfi Hakman, Turkey.

Dr. Adolino DiGiorgio, Italy. Dr. Guillermo Ivanishevich, Peru. Alfred S. Kohl, Region III, Rome. R.W. "Robert" Fischer, assistant to the president, Waterloo. Paul D. Vermette, manager, SBC plans and evaluation div., Rome.

Rustom S. Patel, Pakistan. Maharajkumar Virendrasingh, India. Elvind Sondergaard, Denmark. Roger Campbell, budget and financial assistant.

Juan de Madariaga, France. Javier de Salas, region II, Rome. Gonzalo Riviera, Spain. Frank W. McWalters, Rome. William A. Luykx, Belgium. Karl W. Fangauf, Germany. Volorus H. Hougen, FAS, Washington, DC. Dr. Reynold P. Dahl, special consultant on the Common Market to SBC, Brussels, Belgium.

Note: This is the earliest document seen (Nov. 2010) that mentions the new [European] Common Market or any other early organization linked to what later became the European Union—in connection with soy.

In addition, there is a full page of candid photos from the conference and a half page of photos of the SBC's activities in Italy, Spain, England, Norway, and Pakistan.

206. Boinville, C.A.C. de. 1962. Europe within the IASC [International Assoc. of Seed Crushers]. *Soybean Digest*. Sept. p. 62-64, 66-68.

• **Summary:** Contents: Introduction (Guy Chipperfield was a former president of the IASC). European scope for soy. Edible oils, etc. Animal feedstuffs.

Tables show: (1) 1961 U.S. consumption of edible oils and fats (1,000 metric tons): The top five are soya oil 1,522, cotton oil 659, lard (used as a raw material) 272, maize oil 164, groundnut oil 46. (2) 1961 W. European supplies of edible oils—seed and oil in oil terms: For each type of oil gives net imports, estimated domestic production, and apparent consumption. The top five are: Olive oil 1,116 (almost entirely consumed in the four producing countries of Spain, Italy, Portugal, and Greece), coconut oil 634, groundnut oil 630, marine oils 604, soya oil 516. (3) 1961 consumption of margarine in Europe by country (1,000 metric tons): The top three countries are West Germany 581, U.K. 330, Holland 229. (4) 1961 cattle, hogs, and poultry produced in EEC and UK, by country (1,000 metric tons): UK 7,885, Holland 4,500, Germany 3,774. (5) Soybean oil price indices (Rotterdam and Chicago). (6) Per capita animal food consumption in USA and Europe—1960. (7) Degree of self sufficiency in selected agricultural produce 1959-1960, by commodity (such as wheat, coarse grains, rice, sugar, beef and veal, pig meat). A photo shows C.A.C. de Boinville.

Note: This is the earliest document seen (Nov. 2010) that mentions the EEC [European Economic Community] in connection with soy. Address: President, International Assoc. of Seed Crushers, London, England.

207. *Foreign Crops and Markets* (USDA Bureau of Agricultural Economics). 1962. Spain liberalizes soybean imports. 85(24):21. Dec. 10.

• **Summary:** "The Spanish Official State Bulletin of October 24, 1962, published a resolution including soybeans (tariff item 12.01 B-3) in the list of liberalized commodities which may be imported into Spain without an import license.

"Soybean imports under liberalization are subject to a 5 percent import tariff. According to latest reports, no fiscal tax is being applied. This supercedes information previously published in *Foreign Crops and Markets*, October 8, 1962. Prior to liberalization, soybeans had been imported only by the State and were subject to a 1 percent import duty.

"The National Supply Commission in a circular released October 26, 1962, has issued the following regulations governing crushings of imported soybeans and the handling of oil obtained therefrom.

"1. Oil obtained from import soybeans will be purchased by the General Supply Commission."

"Spanish imports of soybean oil as such, as well as cottonseed and cottonseed oil, remain under state trading and are, therefore, subject to only a 1-percent import duty."

208. *Oleagineux*. 1962. Industrie du soja [The soybean industry]. 17(12):919-20. Dec. [3 ref. Fre]

• **Summary:** Contents (p. 919): Advantages of soy oil. Symposium on soy derivatives for human use will be held at the Northern Regional Research Laboratory on Sept. 13-15. A symposium on soy oil has been organized in Tehran, Iran, on April 4-5 by the Soybean Council of America. Whey (*Petit-lait de soja*) left over from making soy protein isolates. Soy flours.

Page 920: Soy macaroni. Soy noodles (*nouilles*). Soy bread. Neutralization of soy oil to make soaps.

Efforts in Paraguay (the government wants to develop soya cultivation; the crop was first introduced in 1920 by Prof. Ciano, who was returning from a stay at the University of Naples, Italy, where he had studied the biological value of soy protein with Prof. Filippo Botazzi. From 1936 on some 161 ha of soya were growing in Paraguay of four varieties: Mammoth, Hollybrook, Shanghai, and Pekin. By crossing the two best {90% Mammoth and 10% Hollybrook} a new variety was created named Soja Paraguaya).

The soy oil market in Spain. Fertilizing soybeans in Arkansas. Autoxidation of soy oil.

A large photo shows a ship discharging barrels of soy oil at the port of Cadix [Cadiz, Andalusia, southwestern Spain].

209. Cummins, J.S. ed. 1962. The travels and controversies of Friar Domingo Navarrete 1618-1686. *Works Issued by the Hakluyt Society* (Cambridge, England) No. 118. cxx + 475 p. Series 2. 2 vols. See Vol. 2, p. 195-96. Index. 28 cm. [273\*

ref]

• **Summary:** This work contains the “earliest accurate description by a European of food use of soybeans” (T. Hymowitz). The author, Domingo Fernández de Navarrete, is referred to as “Navarette” throughout this book. For details, see Navarrete’s 1665 journal entry. Cummins states (p. cxix): “This edition is not a translation of the *Tratados*, for it is limited to the sixth book, namely the autobiographical section of the *Tratados*. Yet the section on tofu is almost identical (except in capitalization, italics, and punctuation) to the first English translation published in 1704 by Churchill and Churchill. The title page notes that this work was “Edited from manuscript and printed sources by J.S. Cummins.”

At the very end of Chapter XIII, titled “My journey to Che Kiang and stay there till the persecution,” the author describes tofu in China. Note that Chekiang is today the name of a coastal province in eastern China, bounded on the north by Kiangsu province, on the south by Fukien [Fujian] province, and on the east by the East China Sea. Writing in the year 1665, Navarrete says (p. 195-96): “16. Before I proceed to the next Chapter, because I forgot it in the first Book, I will here briefly mention the most usual, common and cheap sort of Food all China abounds in, and which all Men in that Empire eat, from the Emperor to the meanest Chinese; the Emperor and great Men as a dainty, the common sort as necessary sustenance. It is call’d Teu Fu, that is, Paste of Kidney Beans.\* I did not see how they made it. They drew the Milk out of the Kidney-Beans, and turning it, make great Cakes of it like Cheeses, as big as a large Sive [Sieve], and five or six fingers thick. All the Mass is as white as the very Snow, to look to nothing can be finer. It is eaten raw, but generally boil’d and dress’d with Herbs, Fish, and other things. Alone it is insipid, but very good dress’d as I say and excellent fry’d in Butter. They have it also dry’d and smok’d, and mix’d with Caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum’d in China, and very hard to conceive there should be such abundance of Kidney-Beans. That Chinese who has Teu Fu, Herbs and Rice, needs no other Sustenance to work, and I think there is no body but has it, because they may have a Pound (which is above twenty Ounces) of it any where for a Half-penny. It is a great help in case of want, and is easy for carriage. It has one good Quality, which is, that it causes the different Airs and Seasons, which in that vast Region vary much, to make no alteration in the Body, and therefore they that travel from one Province to another make use of it. Teu Fu is one of the most remarkable things in China, there are many will leave pullets for it. If I am not deceiv’d, the Chinese of Manila [Philippines] make it, but no European eats it, which is perhaps because they have not tasted it, no more than they do Fritters fry’d in oil of *Ajonjoli* (a very small seed they have in Spain and India, which we have not\*\*) which the Chinese make in that City, and is

an extraordinary Dainty, of which Europeans do deprive themselves.”

Footnotes: “\*To fu, or beancurd, is made of the soya beans which were familiar to the servicemen in the East during the Second World War; few of them would ‘leave Pullets for it (see Couling 46). \*\*Ajonjoli, oil extracted from sesame (*Sesamum indicum*), used as an olive-oil substitute, a hair-dressing, and for medicinal purposes.”

Near the end of Chapter 14, titled “My journey to the Imperial City, and residence there,” Navarrete writes (p. 242-43, concerning the period 1666-1669): “19... My two Companions, three Servants and I continued in the Imperial City from the 28th of June till the 13th of September. During this time, bating Fish, Flesh and Wine, the Emperor allow’d all our Expence, as well as theirs; so that we had Rice, Wood, Herbs, Oil, and what they call Teu Fu [tofu] in abundance brought in to us; so that when we went away the Fathers of the Society that remain’d behind were stock’d for a great while with Rice, Wood, Oil and Vinegar.” Note: The tofu, being a perishable food, would have been consumed within a day or two.

This first part of this book (p. xix–cxx) gives a detailed biography of Fernández Navarette. It begins: Few men have had more literate enemies and as many inventive biographers as Domingo Fernández de Navarrete (1618-86)...” The best of his life was spent working as a missionary in China, where he was a determined opponent of the evangelical methods of the ‘Jesuit Mandarins.’ On his return to Europe he wrote an account of China, the *Tratados... de la monarchia de China*. This is an enthusiastic compendium of contemporary knowledge of the Empire, which Navarrete constantly exalts as a Utopian state fit to be imitated by Europe... the author, wherever he went, had an observant eye, an open ear, and an ever ready pen... This edition of Navarette’s travels is based on all of [his] writings, but principally upon the sixth book of the *Tratados*” an autobiographical account of his travels. Navarrete was born in 1618 in Castrogeriz, Spain (he was Castilian), and he died in 1686 on the island of Santo Domingo, where he was Archbishop and Primate of the Spanish Indies. In 1635 he became a Dominican friar in Peñafiel, Spain. In July 1645, at the age of 27, he volunteered for the Philippine mission. En route he spent 2 years in Mexico, from Aug. 1646. Landing in the Philippines on 23 June 1648, he did mission work among the Filipino Indians, then taught at the University, where his brilliant, curious mind was recognized. He then joined the Dominicans in China, arriving in Macao in 1658. “From the very beginning he seems to have fallen in love with China and its people,” among who he now remained working until the outbreak of the persecution of 1664. He learned the Chinese language well—and loved it. He became very critical and accusing of the Jesuit missionaries in China—which later embroiled him in controversies with them. He reached Canton in March 1666, and spent the next 4 years under house arrest until



Dec. 1669. Subsequently he travelled in many countries and underwent frightening adventures, finally arriving back in Spain in Dec. 1674. There, in Madrid, he wrote extensively—starting with his *Tradutos* [*sic*, *Tratados*] *historicos, politicos, ethicos y religiosos de la monarchia de China* (518 pages, divided into 7 Treatises) in the first half of 1675. In 1677 he was nominated Archbishop of Santo Domingo, where he arrived on 20 Sept. 1677. He died there of an illness in Feb. 1686. Address: King's College, Univ. of London.

210. Hafner, Fred H. 1962. Problems involved in increasing world-wide use of soybean products as foods in the Near East and India. In: USDA Northern Regional Research Laboratory, ed. 1962. *Proceedings of Conference on Soybean Products for Protein in Human Foods*. Peoria, IL: USDA NRRL. iii + 242 p. See p. 195-99.

• **Summary:** Contents: The problem. Problems at our end. Selection of foods a problem. Indigenous foods. Short-sightedness. Problems abroad. Suggested solutions.

“Ten years ago, Spain used very little soybean oil. Spain has large olive groves and olive oil is ‘king’ there. The mere suggestion that Spain export its olive oil and purchase soybean oil from the U.S. seemed ridiculous to those who knew the eating habits of the Spanish people. Now, 10 years later, Spain is our largest off-shore buyer of soybean oil; Spanish people are using and, in many cases, preferring soybean oil as a food oil; and Spanish olive oil is being exported at a price considerably above its replacement cost as soybean oil. As a result, Spain has a net export income that is much greater than if they continued to utilize their olive oil production in Spain.” Address: Director of Edible Protein Products, Specialty Products Div., General Mills, Inc., 9200 Wayzata Blvd., Minneapolis 26, Minnesota.

211. Senti, F.R. 1963. Soybeans—Their future as a food and feed crop. *Soybean Digest*. Jan. p. 16-20.

• **Summary:** “A thorough survey of the present and potential markets for both the oil and meal fractions of the soybean.” Discusses food uses of soybean oil, fats and oils used in margarine (1946-61; graph), sources of high-protein concentrates or livestock and poultry feeds (1937-61; graph), polyunsaturated fatty acids in the U.S. diet, feed and food uses of soybean meal, growth in oilseed meal consumption, tofu, miso, tempeh, UNICEF's clinical trial with soy beverage for infants in Taiwan, Public Law 480 and soya. To date 12 projects sponsored by the NRRL and funded by P.L. 480 on various food aspects of soybean utilization have been activated in Italy, Spain, Scotland, Finland, Israel, and Poland.

Figure 1, “Fats and oils used in shortening (1946-61)” is a graph showing that in 1945, soybean oil was the main oil used, followed by cottonseed oil, with animal fats a distant third. In 1961 soybean oil is still the leader (47.6% of total

fats used), followed by animal fats (33.3%), then cottonseed oil (16.7%).

Figure 2 is a graph showing that per capita consumption of liquid edible oils increased from about 6.2 lb in 1945 to 11.2 lb in 1961.

Figure 3, “Fats and oils used in margarine (1946-1961)” is a graph showing the total increasing from about 450 million lb in 1946 to about 1,350 million lb in 1961. In 1946 soybean oil and cottonseed oil each accounted for about 50% of the total oil. In 1961 soy oil accounted for about 78% of the total, followed by cottonseed oil and corn oil. Address: Director, NRRL, Peoria, Illinois.

212. *Soybean Digest*. 1963. Spain acts to liberalize soybean imports: World fats and oils. Jan. p. 14.

• **Summary:** “Spain: The Spanish Official State Bulletin of Oct. 24 published a resolution including soybeans in the list of liberalized commodities which may be imported into Spain without an import license, USDA reports.

“Soybean imports under liberalization are subject to a 5% import tariff. According to latest reports, no fiscal tax is being applied, contrary to earlier reports. Before liberalization, soybeans had been imported only by the state and were subject to a 1% import duty.

“Oil obtained from imported soybeans will be purchased by the General Supply Commission. Spanish imports of soybean oil as such, as well as cottonseed and cottonseed oil, remain under state trading and are subject only to a 1% import duty.”

On this same page are sections about Burma. Suez Canal. Costa Rica. Brazil. Tung nut support by USDA. Export orders covering U.S. soybeans and soybean products during late November and December, 1962. Address: Soybean Council of America, Spain.

213. *Foreign Agriculture*. 1963. Brazil to harvest record soybean crop. 1(7):15. Feb. 18.

• **Summary:** Brazil's 1963 soybean harvest is expected to reach a record 12,860,000 bushels from 716,590 planted acres, for a yield of 17.95 bu/acre. Increased acreage was stimulated by the high prices farmers received for 1962 crop. Brazil's exports of soybeans in the first 8 months of 1962 totaled 2.4 million bushels, with the major markets West Germany, Spain, and Taiwan. Exports in 1961 were 2.7 million bushels, sent principally to Italy, West Germany, and the Netherlands.

214. Ramon Vinals Soler. 1963. [Epoxy-resin plasticizers]. *Spanish Patent* 285,464. March 9. Application filed 19 Feb. 1963. 8 p. (Chem. Abst. 60:1897h). [Spa]\*

• **Summary:** Distilled soybean fatty acids are used.

215. *Soybean Digest*. 1963. Ralston Purina feed operations in Spain. April. p. 29.

• **Summary:** “Ralston Purina Co. has joined with an existing company in Spain to form a feed manufacturing company known as Gallina Blanca Purina, S.A., it has been announced in St. Louis, Missouri, by Raymond E. Rowland, president of Ralston Purina. The main office of the organization will be in Barcelona. The company will manufacture and distribute Purina Chows for livestock and poultry in Spain and Portugal.”

216. Meals for Millions. 1963. Friendship food for a hungry world. Distribution of relief shipments, September 1946–May 15, 1963. 215 West 7th Street, Los Angeles 14, California. 4 p. Undated. [2 ref]

• **Summary:** Total distribution of MPF (Multi-Purpose Food) up to 15 May 1963 was 12,830,416 pounds, comprising 102.6 million meals. Countries receiving over 20,000 pounds, in descending order of amount received, were: India (1,979,748 lb), Korea (1,356,110), Japan (541,102), Hong Kong (394,259), China (358,957, stopped in 1951), Brazil (312,244), Germany (206,185), United States (183,366), Philippines (146,943), Haiti (139,823), France (126,022), Pakistan (101,041), Congo (86,101), Austria (82,159), Tanganyika (77,997) Mexico (65,722) Burma (63,554), Taiwan (58,639), Lebanon (56,910), Canada (51,836), Ceylon (38,428), Israel (38,280), Jamaica (38,171), Greece (38,133), Vietnam (37,524), Italy (36,768), Indonesia (35,873), Jordan (33,375), Hungary (33,165), New Guinea (31,535), Gabon (27,704), Liberia (27,187), Okinawa (23,640), Malaya (23,454), Morocco (22,736), Chile (22,721), Iran (21,482), Peru (21,374), Honduras (21,168), Bolivia (20,860), Nepal (20,626), Borneo (20,053).

The following countries (listed alphabetically) were early recipients of soy-based Multi-Purpose Food from Meals for Millions, and were late in introducing soybeans to the country: Bahamas (received 6 shipments totaling 2,079 lb between 1 July 1960 and 31 Dec. 1962). Basutoland [Lesotho] (received 2 shipments totaling 1,539 lb between 1 July 1960 and 31 Dec. 1962). Bolivia (received 2 shipments totaling 1,634 lb between Sept. 1946 and 30 June 1960). British Honduras (received 5 shipments totaling 11,319 lb between Sept. 1946 and 30 June 1960; renamed Belize in about 1975). Cape Verde Islands (received 1 shipment of 2,007 lb between Sept. 1946 and 30 June 1960; independent since 1975). Caroline Islands (received 2 shipments totaling 2,008 lb between Sept. 1946 and 30 June 1960; renamed Federated States of Micronesia in 1986). Central African Republic (received 1 shipment of 2,025 lb between 1 July 1960 and 31 Dec. 1962). Eritrea (received 1 shipment totaling 2,025 lb between Sept. 1946 and 30 June 1969). Fiji Islands (received 2 shipments totaling 2,052 lb between Sept. 1946 and 30 June 1969). Finland (received 1 shipment of 2,040 lb between Sept. 1946 and 30 June 1960). Gabon (received 3 shipments totaling 17,660 lb between Sept. 1946 and 30 June 1960). Guam (received 3 shipments

totaling 4,995 lb between 1 July 1960 and 31 Dec. 1962). Guadalcanal ([later part of the Solomon Islands] received 1 shipment of 513 lb between Sept. 1946 and 30 June 1960). Iraq (received 3 shipments totaling 8,122 lb between Sept. 1946 and 30 June 1960). Jordan (received 9 shipments totaling 28,839 lb between Sept. 1946 and 30 June 1960). Liberia (received 10 shipments totaling 21,949 lb between Sept. 1946 and 30 June 1960). Luxemburg [Luxembourg] (received 1 shipment of 5,130 lb between Sept. 1946 and 30 June 1960). Marshall Islands (received 1 shipment of 739 lb between Sept. 1946 and 30 June 1960). Mozambique (received 3 shipments totaling 7,641 lb between Sept. 1946 and 30 June 1960). New Hebrides [later Vanuatu] (received 1 shipment of 513 lb between Sept. 1946 and 30 June 1960). Oman (received 4 shipments totaling 10,659 lb between Sept. 1946 and 30 June 1960). Panama (received 1 shipment of 96 lb between Sept. 1946 and 30 June 1960). Samoa (American) (received 6 shipments totaling 6,480 lb between Sept. 1946 and 30 June 1960). Somali (received 1 shipment of 270 lb between 1 July 1960 and 31 Dec. 1962). Swaziland (received 1 shipment of 621 lb between 1 July 1960 and 31 Dec. 1962). Tonga Islands [Kingdom of Tonga, independent since 1970] (received 5 shipments totaling 6,723 lb between 1 July 1960 and 31 Dec. 1962). Virgin Islands [USA] (received 2 shipments totaling 2,113 lb between Sept. 1946 and 30 June 1960). Western Samoa [independent since 1962] (received 1 shipment of 1,026 lb between 1 Jan. 1963 and 15 May 1963).

Other countries which received MFM shipments by 15 May 1963 are: Afghanistan, Algeria, Angola, Argentina, Basseterre [Probably refers to the island, Basse-Terre (or Guadeloupe proper) which is the western half of Guadeloupe, separated from the other half, Grand-Terre, by a narrow channel. As of 1994 Guadeloupe is a French Overseas Department. Probably not the seaport on St. Christopher Island, capital of St. Christopher-Nevis—since that is not a country], Belgium, Cambodia, Republic of Cameroun [Cameroon], Canal Zone, Colombia, Costa Rica, Cuba, Czechoslovakia, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, England, Eritrea, Ethiopia, French West Indies, Gambia, Ghana, Goa [former Portuguese possession; annexed by India in 1962; became a state of India in 1987], Grenada, Guatemala, Haute Volta [Upper Volta, later Burkina Faso], Iraq, Kenya, Laos, Libya, Macao, Madeira Islands [autonomous region of Portugal in east Atlantic Ocean, 600 miles due west of Casablanca, off the coast of Morocco], Mauritius Islands, Montserrat [island in the West Indies], Netherlands, Nicaragua, Nigeria, Northern Rhodesia [later Zambia], Nyasaland [later Malawi], Oman, Paraguay, Persian Gulf, Poland, Puerto Rico, Ruanda Urundi, Rumania [Romania], Ryukyu Islands, American Samoa, Santa Lucia [probably Saint Lucia island in the Caribbean], Sicily, Sierra Leone, South Africa, Southern Rhodesia [later Zimbabwe], Spain, Surinam [Suriname], Switzerland,

Thailand, Trieste [Italy], Tunisia, Turkey, Uganda, Uruguay, Venezuela, Yugoslavia.

Note: This is the earliest document seen (March 2010) concerning soybean products (soy flour in MPF) in British Honduras [Belize], Cape Verde, Caroline Islands, Eritrea, Iraq, Lesotho, Liberia, Macao (May 1963), Marshall Islands, New Hebrides [Vanuatu], Oman, Samoa (American), Tonga, or Western Samoa. Soybeans as such have not yet been reported in these countries.

This document contains the earliest date seen for soybean products (soy flour in MPF) in Bolivia (June 1960), British Honduras (June 1960), Cape Verde (June 1960), Central African Republic (Dec. 1962), Eritrea (June 1960), Iraq (June 1960), Lesotho (Dec. 1962), Liberia (June 1960), Marshall Islands (June 1960), New Hebrides (June 1960; Vanuatu), Oman (June 1960), Samoa (American) (June 1960), Tonga (Dec. 1962), or Western Samoa (May 1963). Soybeans as such had not yet been reported by that date in these various countries. Address: Los Angeles, California.

217. Rivera, Gonzalo. 1963. Spain: Soybean meal is liberalized. *Soybean Digest*. May. p. 55.

• **Summary:** “The Spanish development plan for the next 4 years which will start in October has set us as one of the fundamental objectives total freedom to establish industries of all types, to develop collaboration among Spanish firms and also between Spanish and foreign firms. The plan has restricted requirements to open new industries to a minimum. The Spanish manufacturers have seen this new orientation of the Spanish government with pleasure. As many as 14 applications have been made for plants just in the field of soybean processing.

“Up to now the Spanish government has not authorized the opening of any new solvent soybean processing plants. EXISA, in Seville, has completely built and finished a solvent plant with De Smet machinery which has a capacity of 25,000 tons per year. This can be extended to 50,000 metric tons in the near future. However, the government has not yet authorized the opening of this plant.

“If the government should authorize the opening of the 14 plants requested, the crushing capacity of the Spanish industry would exceed one-half million tons per year. The government realizes the soybean meal produced by these plants would exceed Spanish consumption by three times.

“So in spite of the conditions established by the development plan they are studying granting licenses very carefully.

“Soybean Meal and Flour: On the first of January soybean meal was completely liberalized. It now can be imported directly by buyers or authorized importers of, any country. Actual purchases which will be shipped in 1963 amount to 75,000 metric tons. It is expected that imports will exceed 100,000 metric tons. During 1962 soybean meal imports for mixed feeds were over 65,000 metric tons.

“Also, Spain imported 25,000 pounds of soy flour for human consumption for the first time. This flour has been employed mainly for the meat packing industry and for doughnuts, to be manufactured by the Donut Corp. of Spain. The Soybean Council in collaboration with ‘Escuela Oficial de Chacineria’ (Official School for Meat Industry), is going to carry out a campaign of demonstrations working toward the substitution of soy proteins for the potato fecula [starch] and milk casein in the meat industries.

“Soybean Oil: Spain imported a record 224,000 metric tons of soybean oil in 1962. The soybean oil arrived at Spanish ports in December 1962 and in January 1963.

“The olive oil crop for this season totaled about 250,000 metric tons, the lowest since 1956. With this tonnage, the deficit of vegetable oils in Spain exceed 290,000 metric tons as reported by the Comisario.” Address: Director for Spain, Soybean Council of America.

218. Senti, Frederic R. 1963. Current status of soybean utilization research under P.L. 480. *Soybean Digest*. May. p. 28, 30-34.

• **Summary:** This is the third in a series of USDA research reports under the P.L. 480 program. Discusses progress on active projects: Soybean oil in Seville, Spain; Chemical changes in sterols during refining of soy oil by Prof. H. Niewiadomski in Gdansk, Poland; Flavor stability of soy oil in by Prof. Y. Toyama at Toyo Univ. in Japan; Improving the frying quality of soybean oil by Prof. G. Varela at Univ. of Granada, Spain; Meal constituents.

Oriental foods: Production of shoyu (soy sauce) using U.S. vs. Japanese soybeans, use of dehulled soybean grits for making miso, miso-type food in Israel, use of U.S. soybeans in making tofu, or soybean curd, by the Japan Tofu Association, Tokyo.

Industrial applications: Polymerization studied in Milan, Italy. Soybean constituents. Oriental foods #2: Dried tofu in Japan, *Saccharomyces rouxii* yeast in shoyu and miso, development of fermented products from soybean milk in Japan, fermented soybean cheese in Taiwan, fermented soyfoods (tempeh, onjom, ragi) in Indonesia.

Domestic research for increasing imports: Work with soy oil, UNICEF trainees from Brazil studying tempeh, projects saponins, protein complexes, and isolated protein quality in Israel.

A small portrait photo shows F.R. Senti. Address: Director, Northern Utilization Research and Development Div. (also known as the Northern Regional Research Lab.), Agricultural Research Service, USDA, Peoria, Illinois.

219. Ramos, F. 1963. Sobre el aceite de soja; su composicion y principales aplicaciones [On soybean oil: Its composition and chief applications]. *Grasas y Aceites* 14(3):122-25. May/June. [Spa]

Address: Instituto de la Grasa y sus Derivados,



Departamento Industrial, Sevilla, Spain.

220. Spilsbury, Calvin C. 1963. Western Europe, a growing market for U.S. soybeans and soybean meal. *USDA Foreign Agricultural Service*. FAS-M-153. iv + 145 p. Oct. Summarized in Soybean Digest, Dec. 1963, p. 27. 28 cm.

• **Summary:** Contents: Introduction. Summary. West Germany. France. United Kingdom. Denmark. Italy. The Netherlands. Belgium. Spain.

Within each country, the situation is discussed under the following headings: Demand for soybeans and soybean cake and meal, soybean crushing industry, soybean meal in mixed feed and other uses, soybean oil uses and demand, marketing and government controls, summary. Address: USDA.

221. Spilsbury, Calvin C. 1963. Western Europe, a growing market for U.S. soybeans and soybean meal: Spain, soybean crushing industry (Document part). *USDA Foreign Agricultural Service*. FAS-M-153. p. 136-37. Oct.

• **Summary:** "Spain has been a large taker of U.S. soyoil in the past 8 years and today is the largest dollar importer of the U.S. product, while promising to become a much larger dollar market for the oil and soybean meal... Liberalization of foreign investment has encouraged U.S. investors in Spain. Investment of capital in the crushing industry indicates Spain will become a significant importer of U.S. soybeans in future years. The agriculture of Spain, for the most part, is concerned with cultivation of grapes and olives. Olive oil is the country's most important agricultural product, and Spain the world's largest producer.

"The oilseed crushing and processing industry in Spain includes around 150 firms which crush most of the olives and produce and refine most of the olive oil. Thirty of these firms have crushing mills for vegetable oilseeds. There are 85 companies that produce only olive oil. Several of the mills crushing vegetable oilseeds also process olives. There are also over 24 plants that process fishoil and several that process animal fats. The annual capacity of the mills equipped to process oilseeds is estimated at around 200,000 metric tons. This is far in excess of the amount of oilseeds processed.

"The most important oilseed crushing mills are located around the following cities: Seville, Malaga, Astorga, Cartagena, Barcelona, Badalona, Bilbao, Cordoba, Villena, Nonovar, Santander, Utrera and Valencia. Spain also has five margarine factories that produce margarine from vegetable and marine oils.

"Three new oilseed crushing mills are now being built that will be able to handle soybeans by solvent extraction. These mills will also be equipped for processing other oilseeds, as well as olive oil pomace. Completion of one continuous solvent extraction plant of 120 M.T. per day capacity at Seville will provide the industry with a capacity of around 75,000 to 100,000 M.T. a year for solvent

processing of soybeans.

"The trend to crushing soybeans has been stepped up during 1963. The EXISA Solvent Extraction Plant at Seville was completed in April, 1963. In addition, several other soybean solvent extraction crushing plants are being built. At Valencia, ARLESA is building a plant utilizing 400 metric tons per day; also Mollinedo is constructing 2 plants, one at Tarragona (600 tons per day) and another one at Valladolid (200 tons per day). Other plants are projected by Soja-Reus, at Reus, (250 tons per day—to start at 150 tons), and 3 plants are planned by another group at Malaga, Alicante and Almendralejo-Badajoz, (150 tons per day each). A solvent plant is also being built at Santurce (200 tons per day) and an existing Cartagena plant is also installing new machinery for crushing soybeans. By 1970, it is possible that Spain will be crushing 250,000 to 300,000 tons of U.S. soybeans annually."

Note: This is the earliest English-language document seen (Sept. 2006) that uses the term "soyoil" (p. 136) to refer to soybean oil. However the word "soybean oil" is used throughout most of the publication. Address: USDA.

222. Gutiérrez González-Quijano, R. 1963. Sobre la conservación con "antioxidantes" y en recipientes abiertos de una mezcla de aceite de oliva-soja 50% [On the preservation with antioxidants and in open containers of a mixture of 50% olive and soybean oils]. *Grasas y Aceites* 14(6):249-53. Nov/Dec. [5 ref. Spa]

Address: Instituto de la Grasa y sus Derivados, Departamento de Química y Microbiología, Sevilla.

223. *AH; Alimentacion Humana (Human Nutrition)*. 1963--. Serial/periodical. Madrid, Spain: Soybean Council of America (Consejo de la Soja de EE.UU). [Spa]

• **Summary:** Also titled simply *Alimentacion Humana*. Eleven issues (numbers) of this were published. All but number 3 are owned by the National Library of Medicine, Bethesda, Maryland, USA. Address: Madrid, Spain.

224. *Alimentacion Humana*. 1963--. Serial/periodical. Madrid, Spain: Soybean Council of America (Consejo de la Soja de EE.UU). [Spa; eng]

• **Summary:** Eleven issues (numbers) of this were published. All but number 3 are owned by the National Library of Medicine, Beltsville, Maryland, USA. Address: Madrid, Spain.

225. Vargas Romero, A.; Ramos Ayerbe, F. 1964. Technologie: Quelques aspects du raffinage de l'huile de soya [Technology: Some aspects of soybean oil refining]. *Revue Francaise des Corps Gras* 11(1):3-12. Jan. [Fre]

• **Summary:** Discusses color and odor during the processing of soybean oil. Address: 1. Adjoint a la Direction de l'Institut des Corps Gras de Seville, Chef du Service de l'Information

du meme Institut; 2. Chef de l'Atelier Experimental de l'Institut des Corps Gras de Seville.

226. Diser, G.M.; Hayward, J.W. 1964. Expanding overseas markets for U.S. soy protein products: The most serious need in the human diet is adequate levels of good quality protein. *Soybean Digest*. May. p. 16.

• **Summary:** "During the period Feb. 1 to March 21, 1962, the Soybean Council of America, Inc., in cooperation with the Foreign Agricultural Service of the U.S. Department of Agriculture, conducted a survey in 11 developing countries to determine the potential utilization of soy products as an aid in alleviating protein deficiencies in the diets of the people in these areas of the world."

The survey covered the following countries: Burma, Egypt, Greece, Hong Kong, India, Iran, West Pakistan [later renamed Pakistan], Philippine Islands, Portugal, Spain and Turkey.

"The results of this survey showed that protein malnutrition, suffered by a major portion of the people in these countries as a result of inadequate food supplies, particularly a serious lack of protein foods, could be relieved by utilization of inexpensive oilseed protein products.

"Bread, a principal food in these countries, if properly fortified with soyflour or grits, offers the greatest opportunity for increasing protein in the diet. Soy-supplemented chapattis, pakoris, samosas, buns and various other local breads were readily acceptable because of improved palatability, appearance and storage quality."

Describes the development of soy products in Colombia (with panela, "a sugar-based food product widely used in the diet of infants and children in Colombia"), Peru, and Hong Kong. "UNICEF is very active in promoting the utilization of soy in the protein-deficient areas of the world." Address: Soybean Council of America, Inc., Minneapolis, Minnesota.

227. Rivera, Gonzalo. 1964. Spain: A large increase in soybean meal imports. *Soybean Digest*. May. p. 58-59.

• **Summary:** "The Spanish government in April 1963 authorized 14 licenses to set up solvent extraction plants in Spain, the only condition being that they have a minimum crushing capacity of 50,000 metric tons per year. Only six groups are working at present on setting up their plants. The total capacity of these plants will be 440,000 metric tons yearly. Exisa in Seville and Savicsa in Osuna are already Working; Aceprosa started operations in the second half of March; and the other three plants will be ready to operate at the end of this year or the beginning of 1965.

"In spite of the locally produced soybean meal from beans imported from the United States, the imports of this product in 1963 reached the figure 216,000 m.t. [metric tons] compared to 65,000 m.t. in 1962. The mixed feed industry has increased its production considerably due to the liberalization of the raw materials and the strong demand



**Gonzalo Rivera**

for animal protein. The production of mixed feeds can be estimated at 2 million m.t. compared to 1,560,000 m.t. in 1962.

"The small olive oil crop, estimated at 290,000 m.t., led the Spanish government to limit the exports of olive oil, liberalize peanut oil and, due to the poor quality of soybean oil received, purchase Russian sunflowerseed oil. In May 1963, the Spanish government was informed by the National Olive Oil Syndicate that the olive oil crop would be over 320,000 m.t. This is the reason why only 105,000 m.t. of soybean oil was purchased.

"When the Spanish government authorized the selling of blended soy- bean and olive oil, the Soybean Council and the National Oil Packers group jointly prepared a promotional campaign which never took place since the blend was authorized only for a period of 2 months.

"Later, a new regulation established that all seed oils should be sold identified pure and bottled, to the public. For the first time, soybean oil was sold as such, in 1-liter bottles which had an enormous success among consumers. A second campaign to promote the sale of pure soybean oil was then studied but due to the reduced stocks of soybean oil the campaign was never begun.



“The Spanish olive oil crop for 1963-64 will be over 630,000 m.t. This will be the most important crop in this century and, due to the fact that the olive oil crops in the other producing countries will also be very large, Spain may have difficulties in exporting its oil, mainly to Italy which is the leading importing country of this product. For this reason, and in order to protect olive oil, the Spanish government has established a support price for it. The price of first-class olive oil is the same as that of peanut oil at the retail level (27 pesetas per liter).

“As a consequence of the high support prices paid by the government, bottled olive oil is sold at 32 ptas. per liter to the public. For low-income groups, the government is subsidizing the sale of sulphur and cottonseed oils and other seed oils, to be sold either pure or blended at the price of 21 ptas. per liter to the public in refundable bottles.

“Soy flour is being very well accepted by the meat packing industry. Imports went up from 25,000 pounds in 1962 to 100,000 pounds in 1963.” Address: Director for Spain, Soybean Council of America, Madrid.

228. *Soybean Digest*. 1964. Staley will process soybeans in Spain. June. p. 21.

• **Summary:** The name of the joint venture company is Sociedad Iberica de Molturación, S.A., or SIMSA for short. Spanish principals forming the joint venture with Staley are members of Sociedad Internacional de Comercio, S.A., a leading firm in the grain and feed trade in Spain, widely known as SONACO. Construction of the new plant is scheduled to start shortly in Santander, Spain. It will have a processing capacity of 350 tonnes of soybeans daily, which are expected to come from the U.S. Among the products of the SIMSA plant will be “Hi-Pro-Con” 50% protein soybean meal, “Sta-Sol” lecithins, “Staley” 44% soybean meal and degummed soybean oil.

229. *Soybean Digest*. 1964. Soybean Council of America, Inc. Aug. p. 38.

• **Summary:** Three photos show: (1) SBC home economist Miss Gunel Ataisik is preparing Turkish dishes in the kitchen of a low income family in Ankara, Turkey. (2) Archbishop of Palermo, H.E. Cardinal Ernesto Ruffini, visiting the SBC stand in Palermo, Italy, at the Sample Fair. (3) SBC director for India, Maharajkumar Virendrasingh, inspecting the East Asiatic Co. refinery at Madras, India.

230. *Foreign Agriculture*. 1964. Soybean Council announces changed overseas operations. 2(47):11. Nov. 23.

• **Summary:** Major changes are planned for the soybean market development program in a move to consolidate and strengthen overseas operations. Effective December 31, soybean promotion will be administered from a new Washington, DC, headquarters, replacing that in Waterloo, Iowa. The European headquarters in Rome will be closed,

along with all country offices except those in Spain, West Germany, and Belgium—with the latter to handle promotion in the Benelux countries, Denmark, France, Greece, Israel, Norway, Portugal, Sweden, and the United Kingdom. A South American office in Bogotá, Colombia, will direct activities in Chile, Colombia, Ecuador, Peru, and Venezuela.

231. *Soybean Digest*. 1964. Reorganization by the Soybean Council. Nov. p. 11.

• **Summary:** “The Soybean Council of America, Inc., in late October announced major organization changes both overseas and in the United States in a move to consolidate efforts toward developing markets for soybeans and soybean products.

“Changes include: Closing of the Waterloo, Iowa, main office and movement of the main office to Washington, D.C., soon after Nov. 1; and consolidation of eight overseas offices.

“The Council will maintain currently existing country offices in Colombia, Egypt, Germany, India, Iran, West Pakistan, Spain, and Turkey.

“The Council will establish an office in Brussels, Belgium, to be responsible for market development activities in the Benelux countries, Denmark, France, Greece, Israel, Italy, Norway, Portugal, Sweden, and the United Kingdom.

“A new office will be opened in Morocco, to also be responsible for limited activities in Algeria and Tunisia.

“The November [sic, October] *Soybean Digest* announced the election of Glenn Pogeler as president of the Soybean Council.”

232. Vioque, A.; Albi, M.A.; Villagran, Maria del Pilar. 1964. Trace elements in edible fats. VIII. Soybean oil “demetalization” with cation exchange resins. *J. of the American Oil Chemists' Society* 41(12):785-87. Dec. [8 ref]

• **Summary:** Optimum “demetalization” was determined by varying solvent, dilution, resin type and temperature. Prooxidant metals in crude soybean oils in acetone or n-hexane solutions can be effectively removed when passed through columns of a strong cation-exchange resin. Address: Instituto de la Grasa, Sevilla, Spain.

233. Vasconcelos, F.A.T. de. 1964. Contribuição para o estudo do vírus do mosaico da soja [Contribution toward the study of soybean mosaic virus]. *Anais do Instituto Superior de Agronomia, Universidade Tecnica de Lisboa* 26:181-221. [59 ref. Por]

Address: Engenheiro Agrônomo, Portugal.

234. *Soybean Digest*. 1965. Soybean Council of America, Inc.: Changes in the Council setup. Jan. p. 15.

• **Summary:** “The Soybean Council completed moving its U.S. office to Washington [DC] on Dec. 1. The new address is: Soybean Council of America, Inc., 1401 Wilson Blvd.,



Arlington, Virginia 22209. The international operations office of the Soybean Council at Rome was closed as of Dec. 31.

“Under the new setup the office in Brussels, Belgium, will be responsible for market development activities in the United Kingdom, Belgium, Luxembourg, the Netherlands, Sweden, Denmark, Norway, France, Italy, and Greece. The work in these countries will be headed by Jack Ward, who has been area supervisor for Northern Europe, and Rex Wood, who has been the Council’s director for the UK in London. Mr. Wood will move from London to Brussels.

“The Hamburg, Germany, office under Dr. Karl W. Fangauf, will be responsible for the program in Germany, Austria, and Switzerland. And market development work in Spain and Portugal will be under Director Gonzalo Rivera in Madrid.

“Glenn Pogeler, president of the Soybean Council, has been visiting the country offices in Madrid [Spain], Hamburg [West Germany], Rome [Italy], Cairo [Egypt], Ankara [Turkey], Tehran [Iran], Karachi [Pakistan], and New Delhi [India]... Mr. Pogeler participated in the Fats and Oils Symposium at New Delhi, India, Dec. 18 and 19. After completing his itinerary, he will return to the Washington office to resume activities there.”

235. *Foreign Agriculture*. 1965. Eight U.S. food and feed products to be shown at Madrid’s international farm fair next month. 3(15):16. April 12.

• **Summary:** Spain also ranks high as a market for U.S. soybean cake and meal. In 1962-63, purchases hit a record 196,331 short tons, and although this figure went down to 161,125 the following year (reflecting the growth of Spain’s soybean crushing industry), the country was nonetheless second biggest buyer of these U.S. products in Europe for both years. The Soybean Council will also promote soybean oil for table use by sampling of french-fried potatoes, chicken legs, and fish sticks deep-fat fried in soybean oil. Two years ago (1962-63 marketing year), Spain became the U.S.’s biggest cash customer for soybean oil with purchases reaching \$27.8 million. The following year—with Spanish olive oil output way up—soybean oil imports ceased.

236. Pogeler, Glenn H. 1965. Soybean Council of America: Year saw major changes in the Council program. *Soybean Digest*. May. p. 66.

• **Summary:** “During this past year, the program of the Council has been completely evaluated and changes have been made by closing a number of offices and adding one new country office and expanding another one. The present Council has been completely evaluated and changes have been made by closing a number of offices and adding one new country office and expanding another one. The present Council office setup includes offices in the following: Brussels, Belgium; Bogota, Colombia; Cairo, Egypt;

Hamburg, Germany; New Delhi, India; Tehran, Iran; Casablanca, Morocco; Karachi, West Pakistan; Madrid, Spain; and Ankara, Turkey.

“The basic objective of the Soybean Council is to continue to promote the sales of soybeans and soybean products in the overseas markets. To do so, the country offices listed above will engage in activities in many additional areas. It is planned to continue programs in Ireland, England, Denmark, Norway, Sweden, France, Portugal, Switzerland, Austria, Italy, Tunisia, Greece and East Pakistan.

“In South America the Bogota office will be in charge of Colombia, Ecuador, Peru and Venezuela.” “The Soybean Council was organized in 1956 and began its operations that year with its home office located at Waterloo, Iowa.” A list of the offices established since 1956 is given.

“The Soybean Council’s home office was moved from Waterloo, Iowa, to Washington, DC, on Dec. 1. The new address is 1401 Wilson Boulevard, Arlington, Virginia 22209.” A portrait photo shows Glenn H. Pogeler. Address: President, Soybean Council of America, Inc.

237. Rivera, Gonzalo. 1965. Chance for soybean oil to cover olive oil deficit [in Spain]. *Soybean Digest*. May. p. 76.

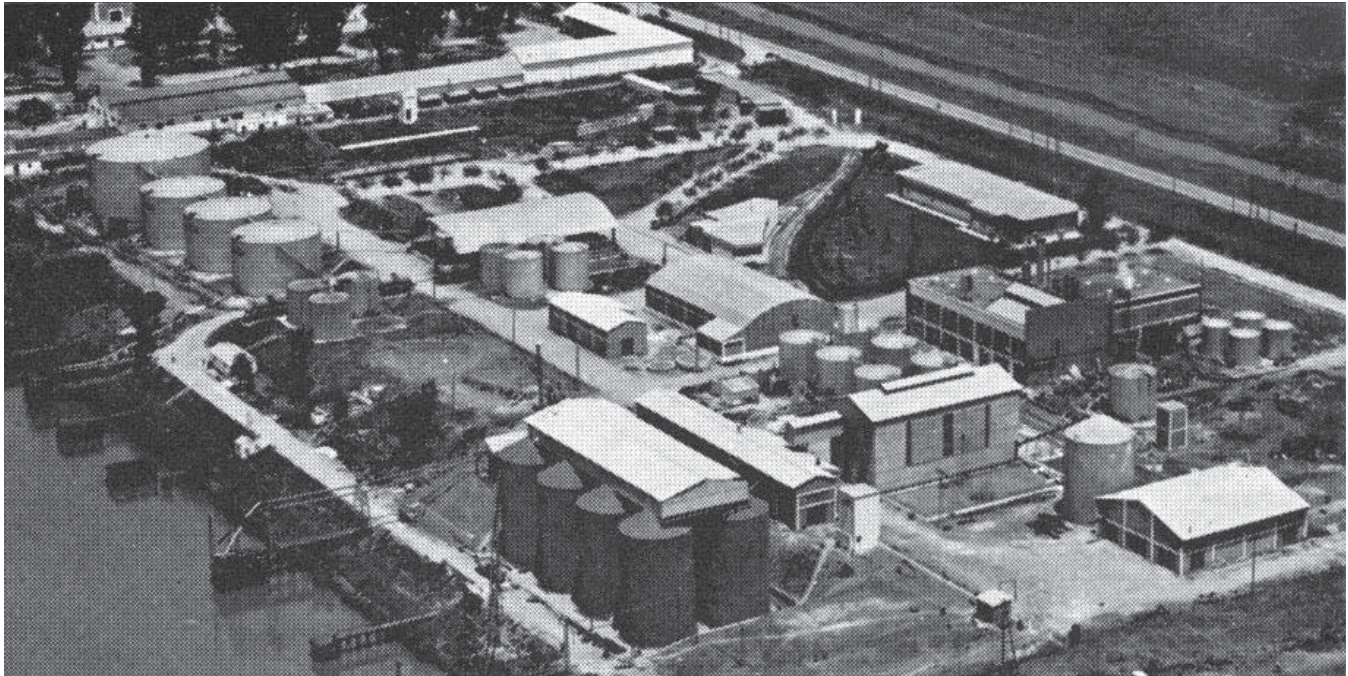
• **Summary:** “Spain is in its second year of the Development Plan. During these first 2 years the results obtained have been far more successful than expected.

“At the present time, there are five crushing plants in operation with an annual total capacity of 470,000 metric tons. In the very near future two more plants will be ready to start working, with an extra total capacity of 200,000 tons per year.

“The Spanish government does not authorize the opening of any further crushing plant since the present crushing capacity is beyond the needs of the local market. Meal requirements will shortly be approximately 300,000 metric tons.

“Suppose that Spain processes 300,000 metric tons of soybeans per year. Less than 60,000 tons of soy bean oil would then be produced in the country. According to a statement made recently by the president of the National Olive Oil Syndicate, and deducting 100,000 tons for exports, the local production of edible oils will be under 300,000 tons. With a national consumption of over 500,000 tons, Spain will have to import 200,000 tons of liquid edible oils.

“The 1963 Spanish olive oil crop, which was consumed during 1964, was the largest crop of the century. Although the government expected that this tremendous crop would produce a considerable surplus and a carryover for 2 or 3 years, due to the extremely poor crop obtained in 1964, olive oil stocks in 1965 are practically nonexistent. As a result of this olive oil shortage, the Spanish government stopped exports during 1 month following which period an export duty has been established which will undoubtedly limit



exports.

“Soybean oil has, therefore, a good opportunity at the present time to cover that part of the market which olive oil cannot supply due to its short production and high prices. The cheapest olive oil in the market is sold at 32.00 pesetas per litre in bulk, and the prices range up to 45.00 pesetas per litre in bottles. The selling price to the public of soybean oil is 22.00 pesetas per litre. It is sold under the generic name of “refined vegetable oil.” This label permitted the government to blend soybean oil with low quality sulphur and cottonseed oils. The Council’s Spanish office is working at present to obtain permission from the authorities for sales of soybean oil identified as such.

“The SBC Spanish office is preparing a publicity campaign on soybean oil at the consumer level to be carried out during 1965. It is expected that soybean oil will cover the Spanish edible oil deficit, at least in great part. The Spanish food code is almost finished. The objective of the code is that all edible products are to be sold packaged and labeled. Such action has already been taken in the edible oil field. Decree has been issued by the Spanish government that all edible oils should be sold packaged and under a trademark, except in those towns where the population is under 5,000 inhabitants.

“During these first months of 1965, Russia has sold 30,000 metric tons of sunflower oil to Spain, under government-to-government trade. The Ministry of Agriculture is studying the possibilities of having sunflowerseed grown in Spain. This could represent a serious competitor to soybean oil.

“Although it is very early to predict this year’s olive oil crop, the feeling is that it will be quite short. If the 1965

crop is 300,000 tons and the exports, 100,000 tons, Spain will have a deficit of 300,000 tons. This is the market that soybean oil should cover, competing with sunflower oil, peanut oil and other edible oils.

“Soy flour is well accepted by the Spanish meat packing industry. Some tests have also been carried out for the use of soy flour in artificial milk for early weaning, since the price of powdered milk has been extremely high thus far this year.” Address: Director for Spain, Soybean Council of America, Madrid.

238. *Soybean Digest*. 1965. Sign contract with EXISA firm in Spain. May. p. 86.

• **Summary:** “A contract for technical assistance in the manufacture of lecithin has recently been signed in Sevilla, Spain, between Soypro International, Inc., and EXISA, S.A.”

A photo shows the EXISA plant at Sevilla, Spain, in the center of Spain’s olive oil producing area. EXISA was the first company to process soybeans in Spain.

239. Kushi, Michio; Fulton, Robert E.; Blum, Cecil. eds. 1965. *Macrobiotics study report: The way of life according to the order of the universe*. Vol. 1. Cambridge, Massachusetts. East-West Institute. 41 p. 27 cm. [4 ref]

• **Summary:** Contents: Seven principles of the order of the universe. Twelve theorems of the unifying principle (both inside front cover). Editorial, by the 3 editors. Cigarettes and cancer, by George Ohsawa (age 73), founder, world macrobiotic movement [Conclusion: smoking cures cancer]. The new discovery of the transmutation of the atom, by Michio Kushi, Director, East West Institute [he has given numerous lectures for the past 8 years in New York, Boston,



Philadelphia [Pennsylvania], and Washington, DC; discusses Louis Kervran and Sanekide Komaki]. My conclusions in biological research, by Kikuo Chishima, M.D., Prof., Gifu Univ., Japan. Thoughts of man, by Michio Kushi. Love, by George Ohsawa.

What is macrobiotics?, by Roger E. Fulton, Cambridge, Massachusetts. Order of the macrobiotic diet (from No. 7 to No. -3). One week's menu (No. 7) for health and happiness, by Aveline Kushi (p. 29-30); includes miso soup, azuki beans, bulgur with tahini sauce, and sesame rice. Sakura meshi (rice with tamari). "1. Grain: Brown rice, whole wheat, buckwheat,... azuki beans. "2. Seasoning: Sea salt, tamari (soy sauce), miso (soy bean paste), gomashio (roasted sea salt and sesame seeds mixed), kuzu, umeboshi (salted plums), sesame oil, corn oil. 3. Beverage: Grain coffee, bancha tea, mu tea, dandelion tea, etc." Note 1. This is a vegan menu. Note 2. This is the earliest English-language document seen (Dec. 2006) that uses the term "salted plums" to refer umeboshi salt plums.

EWI news (a chronology of events from Sept. 1964 to the present). Miraculous events [and cures]. Leprosy cured in Argentina. Testimonials. Open letter to Dr. Frederick Stare, Harvard School of Public Health, by Simone Billaudeau. George Ohsawa's schedule (May to Aug. 1965). Literary contributions. Financial contribution and subscription. Announcement: 1965 Macrobiotic summer camp. Useful addresses: USA, Brazil, Argentina, Sweden, Belgium, France, Germany, England, Spain, Italy, India, Japan. Key CI = Centre Ignoramus. E = Editor. R = Restaurant. MC = Macrobiotic Camp. MF = Macrobiotic Foods. MFF = Macrobiotic Foods Factory. OC = Ohsawa Center. OF = Ohsawa Foundation. Classification of yin and yang (inside rear cover). Poem titled "Wind chimes" by Cecil Blum on rear cover (11 June 1965).

EWI News: 1964 Sept.-After the Macrobiotic Summer Camp on Martha's Vineyard, Michio Kushi and his family moved from the Island to Cambridge, Mass. For the previous year, Mr. Kushi's lectures were conducted almost every month in Boston at the Mattson Academy of Karate. George Ohsawa was also in Boston and Martha's Vineyard in 1964. In Sept. 1964, East-West Institute was incorporated as a non-profit educational establishment. Mr. David Levin and Mr. Ramsay Wood initiated it with several others. Address: East-West Institute, 101 Walden St., Cambridge, Massachusetts.

240. Oliver, S. 1965. Efecto de la intensidad de transpiración y del tiempo de cosecha sobre intercepción radicular, flujo masivo y absorción de calcio y magnesio por plantas de soja [The effect of transpiration rate and time of cutting on root interception, mass-flow, and uptake of calcium and magnesium by soybean plants]. *Anales de Edafología y Agrobiología* 24(7-8):433-43. July/Aug. [17 ref. Spa; eng]  
 • **Summary:** This paper is part of a thesis presented at Purdue Univ. (Lafayette, Indiana) for an MSc degree in agronomy.

Address: Laboratorio de Fisiología Vegetal, Inst. Edafología y Biología Vegetal, C.S.I.C. Serrano 113, Madrid-6 [Spain].

241. *Soybean Digest*. 1965. Changes in structure of Soybean Council. Aug. p. 38.

• **Summary:** The new office in Madrid, Spain, will be headed by Ferenc Molnar, who moved to Madrid with his family on June 1. "The Council will continue to maintain an office at Rome [Italy] which will supervise market development work in Italy, Greece, France, Holland. Belgium, the Scandinavian countries, and the United Kingdom.

"Dr. K.W. Fangauf at Hamburg, Germany, will continue in charge of programs in Germany, Austria, and Switzerland.

"The market development program in South America will be directly under the main SBC office at Arlington, Virginia."

242. Pogeler, Glenn H. 1965. What the Soybean Council is doing for you. *Soybean Digest*. Sept. p. 38-40.

• **Summary:** "Just a few short years ago, Howard Roach had a dream and it was about Spain. His research showed that the per capita consumption of edible oils was pitifully low in that country. Because Spain was almost entirely dependent on the olive crop as a source of edible fat, she was finding her supply of fats for the population always at a low level. Because olives are a tree crop, the production is based on a cycle of on one year, and off the next. This makes a tremendous fluctuation in supply from year to year.

"Howard Roach convinced the Spanish government that a program of supplementing their olive oil supply with soybean oil would make it possible to increase the per capita consumption of oil for the benefit of all. This would also allow Spain to continue her normal exports of olive oil which were needed to produce foreign exchange to enable them to continue the industrial expansion of the nation.

"Spain negotiated a P.L. 480 agreement, and for several years bought soybean oil under P.L. 480 [using local currency, pesetas]. As her financial situation improved, she was able to switch to dollar purchases and today, Spain is the largest buyer of soybean oil from the United States."

"Iran is another example of a country which originally began by buying U.S. soybean oil under P.L. 480 and has now switched to dollar purchases. Iran, in the fiscal year ending 1960, took from the United States 11,000 metric tons of soybean oil and, just 5 years later, is expected to import 45,000 metric tons."

"India is our newest large buyer of soybean oil and last fall signed an agreement with the U.S. government to take in approximately 75,000 tons..." Other users of U.S. soybean oil this past season include Pakistan, Greece, Guinea, Iceland, Tunisia, Egypt, Sierra Leone, Yugoslavia, Chile, Taiwan and several others.

"Europe and Canada are the major dollar buyers of U.S.-produced soybean oil." Major buyers of U.S. soybeans are



Japan, Netherlands, Canada, West Germany, Denmark and many other countries.

“Spain is building up a crushing industry and, by the end of 1965, is expected to be able to crush very close to 700,000 metric tons of oilseeds per year...”

Soybean exports will top 200 million bushels this year and are expected to continue to rise. “Latest government estimates indicate that approximately 2 million tons of soybean meal will find their way overseas from the 1964 crop of soybeans. This year is another record breaker with France, Germany, Netherlands, Canada, Belgium, Yugoslavia, Italy, Denmark, and Spain being the major users.

There has been a tremendous expansion in the exports of U.S. soybeans and soybean products. The Soybean Council of America deserves part of the credit. “In my travels overseas, it seems as though everyone is talking about soybeans and soybean products.”

Also discusses how the Soybean Council operates and is financed, its relationship to USDA's Foreign Agricultural Service, its overseas offices, some of its problems, and reasons for expanding the program. A portrait photo shows Glenn Pogeler. Address: President, Soybean Council of America, Inc.

243. *Foreign Agriculture*. 1965. Spain suspends import duties on soybeans. 3(44):11. Nov. 1.

• **Summary:** The Spanish Government has suspended import duties on soybeans, soybean meal, and oil. This is a continuation of a suspension in effect since December 1964. Former ad valorem duties applied against the c.i.f. prices were 2.5% for soybeans and soybean meal and 1% for soybean oil.

244. *Foreign Agriculture*. 1965. The export and promotion of U.S. oilseeds and oilseed products. 3(48):10-12. Nov. 29.

• **Summary:** “U.S. oilseeds and oilseed products have continued as the nation's top dollar export earner of all agricultural commodities in the past year—a firm member of the ‘billion dollar club.’ FY [fiscal year] 1965 was a record export year with \$1.1 billion total trade up 30 percent over 1963-64 and over 90 percent represented dollar business... Most of the ‘nondollar’ exports were soybean and cottonseed oils that moved under Public Law 480.”

The year 1964-65 was a record year for exports of soybeans and soybean products. Leading importers of U.S. soybeans (in million bushels) were Japan (48.4), Canada (33.9), Netherlands (26.9), and West Germany (22.4). Leading importers of U.S. soybean meal (in 1,000 tons) were France (358.4), West Germany (300.7), Canada (249.4), and Netherlands (245.2). Leading importers of U.S. soybean oil (in million lb; 2,204.6 lb = 1 metric ton) were Spain (239.5), Pakistan (195.2), India (137.0), Morocco (79.5), Iran (70.7), Greece (54.7), Israel (42.9), and Yugoslavia (41.7).

“In Japan, one of the largest U.S. markets, continued

check sampling at the rate of 5-10% is being made on imports to insure that the same quality of beans purchased is actually shipped and that U.S. exporters are informed of low-quality shipments. The American Soybean Association, through the Japan Oilstuff Inspectors Corporation, points out specific shipments of low quality thus allowing ASA to back up requests for exporters to maintain grade standards.

“ASA sponsored trips of two teams of Japanese Soybean Crushing Association officials to the United States in 1965 (the larger team came at its own expense) to view U.S. soybean production, marketing, and shipping methods. Since then, Japanese crushers have had a better understanding of the dependable supply and quality of U.S. soybeans.”

245. **Product Name:** [Soy Oil, Aceprosa Soybean Meal].

**Manufacturer's Name:** Aceites y Proteinas S.A. (“Aceprosa”).

**Manufacturer's Address:** Repelega, Portugalete, Vizcaya (on the Bay of Biscay), Spain.

**Date of Introduction:** 1965.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest Blue Book issue. 1965. p. 108. Expeller, capacity 200 metric tons per day. Storage capacity 400,000 bu.

246. **Product Name:** [Soy Oil, Exisa Soybean Meal].

**Manufacturer's Name:** Exportaciones e Importaciones, S.A., “Exisa.”

**Manufacturer's Address:** Punta del Verde, Sevilla, Spain.

**Date of Introduction:** 1965.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest Blue Book issue. 1965. p. 108. Solvent, capacity 150 metric tons per day. Storage capacity 550,000 bu.

247. **Product Name:** [Soy Oil, Indusoja Soybean Meal].

**Manufacturer's Name:** Industrias de la Soja S.A. (Affiliate of Cargill, Inc.).

**Manufacturer's Address:** Muelle Transversal, Tarragona, Spain.

**Date of Introduction:** 1965.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest Blue Book issue. 1965. p. 108. De Smet solvent, capacity 600 metric tons per day. Storage capacity 550,000 bu.

248. **Product Name:** [Soy Oil, Soybean Meal].

**Manufacturer's Name:** Proteinas y Grasas S.A.

**Manufacturer's Address:** Arrabal S. Pedro 31, Reus, Tarragona, Spain.

**Date of Introduction:** 1965.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest Blue Book issue. 1965. p. 108. De Smet hexane solvent, capacity 250 metric tons per day. Storage capacity 360,000 bu.

249. **Product Name:** [Soy Oil, Soybean Meal].

**Manufacturer's Name:** Sociedad Iberica de Molturación, S.A., "Simsa." Affiliate of Staley A.G.

**Manufacturer's Address:** Panteos, Santander, Madrid 1, Spain.

**Date of Introduction:** 1965.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product–Documentation:** Soybean Digest Blue Book issue. 1965. p. 108. DeSmet solvent, capacity 350 metric tons per day.

250. Cooper, Michael. ed. 1965. They came to Japan: An anthology of European reports on Japan, 1543-1640. Berkeley and Los Angeles, California: University of California Press. xviii + 439 p. Index. 24 cm. [30+\* ref]

• **Summary:** This book is about the "Christian century" in Japan, which includes these key events (chronology): 1542–Portuguese arrive in Japan. 1549–Arrival of St. Francis Xavier. 1568–Nobunaga becomes ruler of central Japan. 1582–Hideyoshi succeeds Nobunaga. 1587–Edict issued expelling missionaries. 1598–Ieyasu succeeds Hideyoshi.

1614–General persecution of Christians begins. 1624–Expulsion of Spaniards. 1639–Expulsion of Portuguese. 1640–Unsuccessful embassy from Macao [to Japan].

This anthology is composed of selections / excerpts from the writings (original texts) of more than 30 Europeans who visited Japan during the period from 1542 to 1640. The material is organized into 23 chapters, by subject, including: The country. History. The people. Social relations. The language. Food and drink. Shinto. Buddhism. Temples and idols. Persecution.

In the chapter on "Food and drink" is a section (p. 190) titled "Their diet," by John Saris, in which he states: "... of Cheese [probably tofu] they have plentie, Butter they make none, neither will they eat any Milke, because they hold it to bee as bloud [blood], nor tame beasts."

Sources: "Saris, John. (1) The Voyage of Captain John Saris to Japan, 1613. E.M. Satow, ed. London, 1900. (2) The First Voyage of the English to Japan. Takanobu Otsuka, ed. Tokyo, 1941."

Another section (p. 191) titled "Three meals a day," by Jorge Alvares states: "Their food consists of rice, chick-peas [probably soybeans], mangoes, maize, Indian corn, yams and wheat, and I think all of it is served dressed with some paste [probably miso]."

Source: "Alvarez, Jorge. 1547. Report in *Missoes dos Jesuitas no Oriente*, by Jeronimo P.A. Camara Manoel, p.

112-25."

The author, who was born in 1930, is a Jesuit who has written much on the early history of Japan. Address: S.J. [Jesuit], Campion Hall, Oxford [and Sophia Univ. (Jesuit), Tokyo, Japan].

251. Pogeler, Glenn H. 1966. Exports of soybeans and products continue to grow. *Soybean Digest*. May. p. 70, 72.

• **Summary:** "Exports of soybeans and soybean products during the past year have continued to expand at a rapid rate in all areas and prospects for future expansion seem unlimited. New markets are being opened for soybean meal due mainly to the rapid development of the poultry industry in practically all areas. Oil demand continues to expand as the economies of our overseas friends improve and we expect this trend to continue." The Soybean Council of America now has 11 offices in 10 countries. The address and director of each is given: Rome, Italy; Bogota, Colombia; Cairo, Egypt, UAR; Hamburg, Germany; New Delhi, India; Tehran, Iran; Casablanca, Morocco; Karachi, West Pakistan; Ankara, Turkey; and Madrid, Spain.

"In the Tehran, Iran, office [whose director is Iraj Dehlavi] is Fred Martin, SBC oil technician, who serves Turkey, Iran, Pakistan and India. Our oil technicians also serve any other countries on special assignment." A photo shows Pogeler. Address: President, Soybean Council of America, Inc.

252. *Soybean Digest*. 1966. Three U.S. firms are processing [soybeans] in Spain. May. p. 51, 54.

• **Summary:** "The A.E. Staley Manufacturing Co. has announced that its new joint venture processing plant in Santander, Spain, will begin production in May... When fully operational it will have a daily processing capacity of more than 350 metric tons of soybeans. The joint venture company, Sociedad Iberica de Molturación, S.A., known as SIMSA, is owned equally by Staley and Sonaco, S.A., a prominent Madrid commodities firm... The Spanish plant marks Staley's first overseas venture in soybean processing."

Cargill, Inc. of Minneapolis, Minnesota, and a group of Spanish investors have a processing plant in Tarragona, Spain. It has been operating at peak capacity (700 tons/day of soybeans) since Feb. 1965. It is "operated as an independent Spanish corporation and is know formally as Industrias de la Soja S.A. which shortens to Indusoja and is pronounced 'Indu-soya.'"

"Archer Daniels Midland Co.'s affiliate in Spain, Oleotecnica, S.A., produces soybean-based margarine at its plant in Castro-Urdiales. Oleotecnica refines soybean oil imported from the United States for its margarine. The plant also crushes some soybeans imported from the United States."

253. *Minneapolis Tribune*. 1966. Cargill will build Dutch

soybean plant. July 1.

• **Summary:** The large soybean processing [crushing] facility will be located in the Port of Amsterdam, and will have an initial capacity to crush 300,000 tons of soybeans a year to make 240,000 tons of soybean meal and 55,000 tons of oil—according to M.D. McVay, vice-president and head of the company's Vegetable Oil Division.

The plant is expected to begin operations in Oct. 1967.

This is Cargill's second soybean processing facility outside the United States; it "has an interest in a somewhat smaller facility in Spain." Address: Minnesota.

254. Lopes, A.D. 1966. Ensaios de sojas, 1959/60 a 1965/66 [Experiments with soybeans (in Mozambique) from 1959/60 to 1965/66]. Sussundenga (Portuguese East Africa). 26 p. Aug. Typewritten. [Por]\*

255. Pogeler, Glenn H. 1966. The Soybean Council and today's market needs. *Soybean Digest*. Sept. p. 75-77.

• **Summary:** "It is my personal opinion that we are on the threshold of a tremendous expansion of demand for soy protein and soybean oil around the world."

"I am still sticking with my estimate of the need for a 1½-billion-bushel crop by 1975. If the present pattern of increase in demand for soybeans and products continues, we could very well reach the 1½-billion-bushel goal by 1972 or 1973.

"Office at Madrid: In Madrid, Spain, we have completed the setting up of the supervisory-servicing office. This has been under the direction of Ferenc Molnar, our executive vice president. We have staffed this office with a comptroller, an accountant, a technical director and clerical help.

All other offices of the Soybean Council are continuing on the same basis as in the past. We continue to maintain country offices at Bogota, Colombia; Rome, Italy; Madrid, Spain; Hamburg, Germany; Casablanca, Morocco; Cairo, Egypt; Ankara, Turkey; Teheran, Iran; Karachi, Pakistan; and New Delhi, India.

"The major function of the Soybean Council offices in P.L. 480 countries is of a technical nature. We attempt to serve the local industry, such as refiners and finished product manufacturers, by furnishing technical services on plant operation and production. We also engage in consumer education programs on the usage of products manufactured from U.S. soybean oil.

"We continue to work with the livestock and poultry industries in a number of these countries. Many of the P.L. 480 countries are just beginning to expand their livestock and poultry feeding operations. Modern feeding practices call for a tremendous increase in protein demand.

"To be of further aid and assistance to the developing countries, we publish and distribute articles on soybean oil and soybean protein.

"Moving now to the dollar markets, we engage in

technical service programs of assistance to crushers, refiners and protein users. We cooperate with local industry in conducting direct consumer promotion programs.

"We are presently cooperating with crushers, refiners, feed mixers and margarine producers to put on special promotional programs.

"In many of the countries in which we work we have completed plans or have them under way for visits to the United States on the part of technical groups representing all facets of the industry. These visitors come to the United States to get a firsthand eye-view of the industry and the product we produce. We have enjoyed very close cooperation and assistance on the part of the U.S. industry in helping to give our foreign visitors an opportunity to learn how American business operates. We afford them an opportunity to view the magnitude of the U.S. fats and oils industry and to see the U.S. soybean crushing and feed-mixing industries.

"Through our newly set up technical services division in Madrid, Spain, which is under the direction of Raymond S. Burnett, we expect to increase the output of technical papers on processing, refining and product production. Our technical services division also acts as a trouble-shooter and stands ready to assist foreign buyers of soybeans and products to iron out bugs that may develop in the use of the raw material and in the finished product.

"This year we are witnessing a tremendous expansion in consumption of soybean meal in foreign markets. Information which I have been able to pick up on my overseas visits is that we can expect a further continuation of the increase in demand.

"Recently, soybean meal prices have been on the upgrade. This could eventually limit the demand. If the 1966 soybean crop should improve so that we can produce close to 900 million bushels we might expect a more moderate level of prices. Large quantities of soy protein will find their way into the overseas market and the demand will continue to expand."

A photo shows Glenn Pogeler. Address: President, Soybean Council of America, Inc.

256. Lopes, A. Dias. 1966. Experimentacao de sojas—Resumo de 7 anos de ensaios [Experimentation with soybeans—Summary of seven years of experiments]. *Jornadas Silvo-Agronomicas (Lourenco Marques)* 7[17]:1-7. [Por]

• **Summary:** These soybean variety trials at Sussundenga Experimental Farm [Portuguese East Africa] started in 1959/60 and continued over 7 years. The two planting dates were mid-November and mid-December. The two spacings were 60 x 10 cm and 60 x 20 cm. During the first 4 years the soybean varieties tested were Acadian, C.N.S., Yellow, and 279. In 1959/60 C.N.S. gave the best yields. The average yield was 988 kg/ha and two trials gave yields of 1,070 and 1,063 kg/ha. In 1963/64 the variety Ootootan was added to



the trials, and in 1965/66 Hernon 147 (from Rhodesia) and Masterpiece were added. Address: Engenheiro Agrônomo, B.T.R. (J.P.P.–Moç).

257. Lopes, A. Dias. 1966. Um ensaio de rotações com culturas de sequeiro—Relatório de 7 anos [Rotational trials: Summary of seven years results]. *Jornadas Silvo-Agronomicas (Lourenço Marques)* 7:1-7. [Por; eng]

• **Summary:** This report covers a rotation test on dry-farming conditions conducted at the Sussundenga Experimental Farm (Posto Experimental do Sussundenga; P.E.S. [in Portuguese East Africa]) begun in 1959/60, and scheduled to run for 8 years. The soybean variety Acadian, used in the trials, was planted in November on 60 x 10 cm centers. Maize (corn) was used in each of the eight rotations. A full description and detailed analysis of each rotation is given. Address: Engenheiro Agrônomo, B.T.R. (J.P.P.–Moç).

258. American Soybean Association. 1967. Soybean Digest Blue Book Issue. Hudson, Iowa: American Soybean Assoc. 170 p. Index. Advertisers' index. 22 cm.

• **Summary:** The title page of this year's *Blue Book* states: "Blue Book issue. Vol. 27. March, 1967. No. 6."

A table (p. 26) gives world soybean production by continent and country, from 1955-59 to 1966 (preliminary) as follows: North America: Canada, United States, Mexico. South America: Argentina, Brazil, Colombia, Paraguay. Europe: Italy, Romania, Yugoslavia, Other Europe (excluding U.S.S.R.). USSR (Europe and Asia). Africa: Nigeria, Rhodesia, Tanzania. Asia: Turkey (Europe and Asia), China—Mainland, Cambodia, China—Taiwan, Indonesia, Japan, Korea—South, Thailand. Total #1. Total #2.

Soybean production in Mexico increased from about 39,000 bu in 1955-59, to 1,315,000 in 1964, to 2,205,000 in 1965 to 4,410,000 (preliminary) in 1966.

Soybean production in "China, Mainland" [including Manchuria] decreased from about 344,000,000 bu in 1955-59, to 255,000,000 in 1964, to 250,000,000 in 1965, and 250,000,000 in 1966 (preliminary).

Soybean production in "China, Taiwan" increased from about 1,248,000 bu in 1955-59, to 2,117,000 in 1964, to 2,414,000 in 1965.

A table (p. 29) gives U.S. exports of soybeans, oil and meal from 1962 to 1965 (preliminary) to the following regions and countries (for marketing years beginning Sept. 1; in bushels): North America: Canada, Mexico, other, total. South America: total. Western Europe: Belgium & Luxembourg, Czechoslovakia, Denmark, Finland, France, Germany—West, Italy, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, other, total. Eastern Europe: Czechoslovakia, Hungary, USSR (Europe and Asia), Poland, other, total. Africa, total. Asia and Oceania: Hong Kong, Israel, Japan, Korea—South, Philippines, Taiwan, other, total. Grand total.

Exports of U.S. soybeans to Mexico increased from 33,000 bu in 1962 to 177,00 in 1964. Note: This is the 2nd earliest document seen (Feb. 2009) that gives statistics for trade (imports or exports) of soybeans, soy oil, or soybean meal to Mexico or Central America. Address: Hudson, Iowa.

259. Deveza, Manuel Carneiro. 1967. A cultura da Soja no mundo e o comércio internaiconal desta oleaginosa: Situação de Moçambique como produtor [World soybean cultivation and international trade in its oil. Mozambique's situation as a producer]. *Gazeta do Agricultor (Mozambique)* 19(214):66-72. March. [Por]

• **Summary:** Contents: General considerations. Soybean producing countries and continents and their production in tons (1948-1965). International commerce: importation of soybeans, soy oil, and soybean meal by countries and continents (in 1963 the 5 largest importers of soy oil were Spain, Pakistan, Turkey, Morocco, and Yugoslavia; the 5 largest importers of soybean meal were France, Canada, Germany, England, and Denmark). Value of the seeds, meal, and oil. Uses of the soybean. Cultivation of the soybean in Mozambique. Potential for soybean culture in Mozambique. Address: Engenheiro agrônomo, Director Serviços de Agricultura, Província de Maçambique, Serviços de Veterinária, Mozambique.

260. Pogeler, Glenn H. 1967. Aims, objectives and experiences of the Soybean Council of America, Inc. Paper presented to United Grain Growers at a Conference to Discuss Formation of a Canadian Rapeseed Council. 13 p. Held 14 March 1967 at the Royal Alexandra Hotel, Winnipeg, Canada.

• **Summary:** Last year the U.S. produced a record "931 million bushels of soybeans and present estimates are that approximately one-half of the crop will find its way to overseas users of soybeans, soybean oil and soybean meal." "Soybeans are truly a crop of the future." He will "talk about the part that the Soybean Council of America [SCA] has had in the expansion of this crop overseas."

Some background: In the mid-1950s there were large agricultural surpluses in the USA. This led to a concentrated effort by U.S. industry and government "to expand the markets for American agricultural products." In the mid-1950s, "Public Law 480" was passed. "This bill was designed to expand the sale of surplus agricultural commodities around the world on a concessional basis with built-in encouragement to convert foreign buyers from concessional purchases to dollar business." The USDA was authorized to "negotiate with foreign countries to sell them surplus agricultural commodities in exchange for foreign currency. The foreign currencies received by the United States government were to be used for projects *within* the countries in which the agreements and trades were made and were to be used primarily as loans for the development

of agriculture and industries related to agriculture.” Part of the funds received by the USDA were to be used to expand exports.

The Soybean Council was organized in 1956. A full page of its Articles of Incorporation is given, showing its various purposes. “The major emphasis of the Soybean Council is to explore market potential and to conduct promotional and servicing activities that will help to expand the markets for the U.S. soybean industry throughout the world.”

Back in 1955, at a convention of the American Soybean Association [ASA] and the National Soybean Processors Association [NSPA], it was decided to explore the possibilities of setting up the organization. A committee of five, including growers and processors, was appointed to study this matter and report back to the two sponsoring organizations. It was my fortune to be elected to this committee.” After much discussion and research, the committee strongly recommended the establishment of SCA.

The Soybean Council as an organization consists of a board of directors totaling 21 members, with 9 directors selected by ASA, and 9 by NSPA. In addition, there is 1 director from each of the following: the North American Export Association, the Farmer cooperatives, and the National Grain Trade Association. The two types of members are regular and participating. “The bulk of the funds collected for the Soybean Council are generated through the collection of 1/20 of one cent for each bushel crushed by the member soybean processors. Other trade interests have contributed to our budget on the basis of negotiated amounts. The soybean growers are at the present time actively engaged in a program of setting up state soybean organizations and hope to soon generate funds for the Soybean Council’s work through a minimum per bushel deduction from soybeans bought at the local level. At present, a number of states are attempting to pass legislation that would require a deduction from the farmer by the first purchaser. This money would be funneled through a state organization charged with the responsibility for distributing such funds for plant breeding work, market research and market development programs.

“Dollars that are used in the United States to cover the costs of the Executive Office and staff total about \$250,000 per year. The balance of the funds, used for our market development projects, which has run from a total of about \$700,000 per year up to slightly over a million dollars, are funds that are contracted from and furnished by the Foreign Agricultural Service of the U.S. Department of Agriculture.

“The Soybean Council presently has ten offices overseas which are located in Bogota, Colombia; Madrid, Spain; Hamburg, Germany; Rome, Italy; Casablanca, Morocco; Cairo, Egypt; Ankara, Turkey; Teheran [Tehran], Iran; Karachi, Pakistan and New Delhi, India. We have a market development program in each of these countries and, in addition, we have limited market development activities in an additional 19 countries.”

The Council’s main emphasis is on selling soybean oil, which has been in surplus in the USA for a number of years. “We have produced motion pictures in which special emphasis is given to the quality of U.S. processed soybean meal. We have conducted, over a period of years, feeding tests that are designed to demonstrate the value of soybean meal in feeding rations of all kinds.

“At present, we are especially interested in the expansion of poultry production in a number of the areas of the world and it is our sincere belief that we are about to witness a tremendous expansion in the production and consumption of poultry in many of the meat-short areas.”

The SCA has been very active in promoting the use of hardened soybean oil in the form of vanaspati in Pakistan and India. “In liquid oil consuming countries such as Spain, Turkey, Morocco, Tunisia and Italy we have found a ready acceptance for high quality soybean oil.” “Spain and Iran are shining examples of P.L. 480 countries that have switched to dollar purchases. Soybean crushing has expanded at a tremendous rate in Europe, and Spain is presently crushing about 20 million bushels of soybeans a year.” As recently as 1960, Spain was not crushing any soybeans at all.

The future promises to hold increased competition and higher soybean yields. Address: President, Soybean Council of America, Inc.

261. Rivera, Gonzalo. 1967. Steady growth of soy oil shown in Spain. *Soybean Digest*. May. p. 62-63.

• **Summary:** A photo shows a typical soybean processing plant in Spain, SIMSA, located at Santander, on the northern coast. The plant was opened in Dec. 1966. The market shares for oils consumed in Spain are: Olive oil 55%, soybean oil 24%, peanut oil 5%, cottonseed oil 4%, and other oils 12%.

“In 1967 Spain will crush approximately 750,000 metric tons of beans producing some 600,000 metric tons of meal and 125,000 metric tons of oil which should meet the requirements of meal and may fall a little short as far as soybean oil is concerned...

“There are at present eight soybean crushing plants in Spain in operation. All except one of these plants are brand new and no more than 2 years old.” Address: Director for Spain, Soybean Council of America, Inc., Madrid, Spain.

262. Collins, R.F. 1967. Soybean Council helped tap big European market for U.S. soybeans. *Foreign Agriculture* 5(33):9-10. Aug. 14.

• **Summary:** “Fantastic growth has been the story for U.S. soybean exports since the United States got into the soybean market development business 11 years ago. While salesmanship by itself is hardly responsible for the 190-million bushel gain in soybean exports during this time, it has played a big role in bringing the foreign buyer and U.S. exporter together.

“Here are some of the changes that the Soybean

Council of America–FAS cooperator in soybean market development—has been a party to in the important European market.

“Expansion in the European economy, with increasing population and growing food and feed requirements, started the boom in purchases of U.S. soybeans—a product that 50 years ago was a novelty in the United States.

“During the infant years of the industry, soybeans were grown here mainly for hay, forage, and soil building purposes, with exports in any form unheard of. By the beginning of World War II, acreage was still about evenly divided between soybeans for beans and for hay.

“Demand begins in war years: But with the war came a tremendous demand for agricultural commodities, particularly soybeans and other oil-bearing seeds. U.S. farmers, acquainted with soybeans through their limited output of earlier years, moved rapidly to meet the demand.

“At the conclusion of the war, the devastated countries of Europe found themselves critically short of fats and oils. To help Europe rebuild, the U.S. Government did its utmost to supply fats and oils and other necessities.

“As the economies of individual European countries slowly began to improve, opportunities for actual market promotion presented themselves. Consumers’ needs for vegetable oil continued to grow, and—even more important—Europe began a tremendous buildup in poultry and livestock numbers. Livestock producers looking for reliable sources of protein supplements found U.S. soybean meal the answer to their requirements for a top-quality product at attractive prices; and this was a product in steady supply and with minimum delivery problems.

“The U.S. processing industry made information available on the use of soybean meal as a livestock feeding supplement. Government sources and U.S. market promotion agencies added to the flow of information.

“Program begun in 1956: Responding to this increased buying interest from abroad, the U.S. soybean industry established the Soybean Council of America in 1956. With assistance from FAS, the Council set up offices in various European countries. Aim of the new program was to increase world demand for U.S. soybeans and products.

“In subsequent years, even the most optimistic export expectations were exceeded. U.S. exports of soybeans and their products rose 200 percent between 1956-57 and 1965-66, making the United States the world’s largest single exporter of oilseeds and making soybeans our No. 2 agricultural dollar export behind feedgrain. In 1965-66, U.S. exports of 251 million bushels of soybeans, 923 million pounds of soybean oil, and 2.6 million short tons [1 short ton = 2,000 lb] of cakes and meal accounted for about 90 percent of world soybean trade.

“Spain an outstanding example: Although Japan is now our largest single market, Europe continues to increase its purchases of U.S. soybeans, in 1966 taking about 56 percent

of our soybean exports, 80 percent of the soybean meal, and 11 percent of the oil. West Germany, France, Italy, and the Netherlands are among the European countries accounting for these sales, but one of the most outstanding examples of the day is Spain.

“Despite its position as the world’s largest exporter of olive oil, Spain was convinced to use some U.S. soybean oil. Introduced to soybean oil when their country was still a P.L. 480 market, Spanish processors found it advantageous to blend the low-cost soybean oil with the higher priced olive oil. This reduced the price to consumers of cooking oil and freed more olive oil for export.

“At first, the soybean oil was blended with a low-quality olive oil that resulted in a rancid product. The Council provided technical service to the processors in refining and blending of the oils and in building bulk-handling facilities.

“As Spain’s economy began to expand rapidly, another use for U.S. soybeans arose—soybean meal as an ingredient in animal feed was introduced by the Council. An immediate response prompted the Council in 1960 to begin additional work to tap the new market. It started holding livestock feeding seminars, designing trade fair exhibits on the use of meal, and distributing reams of material on livestock nutrition and feeding.

“Still another change took place in the market in 1964: with its crushing industry rapidly developing, Spain turned to importing U.S. soybeans. This prompted an appropriate change in tactics of the Council; it has since helped Spain establish an oil quality control lab, brought study teams to the United States, and undertaken promotions aimed at selling the beans as well as U.S. oil and meal.

“As a result of its flexibility in a changing market situation, the Council has helped to continue the sharp upward trend in Spanish imports of U.S. soybeans. From none in 1956, Spain’s purchases of U.S. soybeans rose to 22 million bushels in 1966, and they are expected to go even higher in 1967.

“Similar programs have paid off in the other European markets for U.S. soybeans. In addition to large purchases of the meal, West Germany imported 59 million bushels of U.S. soybeans in 1966 while the Netherlands bought 15 million. And France—whose livestock feeding industry has grown tremendously over the years—bought 465,000 short tons of meal.

“With soybean output continuing upward, the United States expects to expand further its overseas business in this valuable oilseed. A record 41.0 million acres have been devoted to soybeans this year, or some 10 percent more than in the preceding year. Normal yields and continuing good weather could turn this into a billion-bushel crop, compared with 931 million in 1966.

Photos show: (1) Hans Kwuk, manager of a German mixed feed plant, describes his operation to Glenn Pogeler, president of the Soybean Council of America; Dr. Paul G.



Minneman, U.S. Agricultural Attaché. Bonn; and Dr. Karl W. Fangauf, Council Director in Germany. (2) Visitors to German Green Week Exhibition go after samples of French fried potatoes cooked in hydrogenated soybean oil. Address: Soybean Council of America.

263. Instituto de Investigacao de Angola (IIAA). 1967. Index seminum quae Institutum Investigationis Agronomicae Angolae pro mutua commutatione offert [List of seeds offered for exchange by the Institute of Agronomic Investigation of Angola]. Nova Lisboa, Angola. 11 p. Nov. 22 cm. [Lat; por]

• **Summary:** Plants are listed alphabetically by families in Latin. Under Leguminosae are two species of *Glycine* (p. 6). "294. *Glycine javanica* L. ssp. *micrantha* (Hochst. ex A. Rich.) F.J. Hermann." Note: This plant was later renamed *Neonotonia wightii*.

"295 \* *Glycine soja* Sieb. et Zucc." The asterisk (\*) indicates that this plant is not native to Angola.

The last page states that 1,000 copies of this list were printed in Nov. 1967. It is asked that requests be submitted before 30 June 1968. Address: Caixa Postal 406, Nova Lisboa, Angola.

264. Bailey, Ethel Zoe. 1967-1981. *Glycine soja*—Foreign sources. Part II. Ithaca, New York: L.H. Bailey Hortorium. 3 cards. Unpublished.

• **Summary:** Continued: (51) Oslo 67—Hortus Botanicus Universitatis Osloensis, Oslo, Norway, 1967 [LR 1983]. (52) Frank. 66—Botanischer Garten der Johann Wolfgang Goethe Universitaet, Siesmayerstrasse 72, 6 Frankfurt am Main, Germany, 1966 [LR 1980]. (53) Heid. 66—Botanischer Garten der Universitaet, D-6900 Heidelberg, Germany, 1966 [LR 1981]. (54) Angola 68—Instituto de Investigacao Agronomica de Angola, Caixa Postal 406, Nova Lisboa, Angola, 1968 [LR 1975]. (55) Nancy 64—Jardin Botanique de la Ville de Nancy, 100 Rue du Jardin Botanique, 54600 Villers-les-Nancy, Nancy, France, 1964 [LR 1981].

(56) Liege 63—Jardin & Institut de Botanique de l'Universite de Liege, 3 Rue Fusch, Liege, Belgium, 1963 [LR 1975]. (57) Oxf. 68—Botanic Garden, University of Oxford, Rose Lane, Oxford, England, UK, 1968 [LR 1981]. (58) Read. 71—Agricultural Botanic Garden, University of Reading, Reading, Berkshire, England, UK, 1971 [LR 1974]. (59) Kosice 70—See (40) Kosice 63 (Slovakia). (60) K.S.F. 72—Kerteszeti es Szoleszeti Foiskola (Inst. Bot. Acad. Horti- et Viticulture), Novenytami Tanszeke, Menesi-ut 44, Budapest xi, Hungary, 1972 [LR 1982].

(61) Ruhr 71—Ruhr—Universitaet Bochum, Botanische Garten, Postfach 2148, D-4630 Bochum, Germany, 1971 [LR 1980]. (62) Ant. 72—Hortus Botanicus Antveroiensis Plantentuin, Gerard le Grellelaan 5, Antwerp, Belgium, 1972 [LR 1973]. (63) Pecs 73—See (43) Pecs 63 (Hungary). (64) Toh. 74—Hortus Botanicus Tohoku Universitatis Sendaiensis,

Sendai, Japan, 1974 [LR 1982]. (65) Bol. 73—Istituto Botanico dell'Universita di Bologna, Via Imerio 42, Bologna 40126, Italy, 1973 [LR 1981].

(66) Barc. 77—Institut Botanic de Barcelona, Av. Muntanyans, Parc de Montjuic, Barcelona 4, Spain, 1977 [LR 1981]. (67) Lugd. 78—Hortus Botanicus Academicus Lugduno-Batavus, Nonnensteeg 3, Leiden, Netherlands, 1978 [LR 1981]. (68) Purw. 79—Purwodadi Botanic Garden, Lawang, East Java, Indonesia, 1979 [LR 1979]. (69) Oxf. 79—See (57) Oxf. 68 (Oxford, England). (70) Hohen. 79—See (27) Hohen. 58 (Hohenheim, Germany).

(71) Delft 80—Technische Hogeschool Delft, Julianalaan, Delft, Netherlands, 1980 [LR 1980]. (72) Gand. 81—Plantentuin der Rijksuniversiteit (formerly named Hortus Botanicus Gandavensis), K.L. Ledeganckstraat 35, B-9000 Gent, Belgium, 1981 [LR 1981].

On a separate card is one entry for *Soja Glycine* (which should probably be *Glycine soja*): St. A. 71—University Botanic Gardens, St. Andrews, Scotland, UK, 1971 [LR 1982]. Address: L.H. Bailey Hortorium, 462 Mann Library, Cornell Univ., Ithaca, New York 14853-4301. Phone: 607-255-7981. Fax: 607-255-7979.

265. Coutinho, L.P. 1967. Perspectivas da cultura da soja em Mocambique [Perspectives on soybean culture in Mozambique]. *FIR (Sao Paulo)* 10(91):13-16. [Por]\*

266. Boxer, Charles R. 1967. *The Christian century in Japan, 1549-1650*. 2nd printing corrected. Berkeley and Los Angeles, California: University of California Press. xv + 535 p. + [9] leaves of plates. Illust. Index. 25 cm. [279 + 210 endnotes]

• **Summary:** Contents: Dedication. Preface. 1. From Marco Polo to Mendes Pinto. 2. Japan through Jesuit spectacles. 3. Christianity and the *kurofune* [black ships, Portuguese carracks]. 4. Jesuits and friars. 5. Christian culture and missionary life. 6. Pirates and traders. 7. The palm of Christian fortitude. 8. Sakoku, or the closed country.

Appendixes [original documents]. I. Extracts from a letter written by Francis Xavier, S.J., to the Jesuits at Goa dated Kagoshima, Nov. 5, 1549 (p. 401). II. The Rutter of the Santa Cruz, July 5, 1585–March 30, 1586 (p. 406). III. Affidavits concerning Jesuit and Franciscan rivalry, 1593-1597 (p. 415). IV. Pedro de Baeza on the China-Japanese Trade, ca. 1609 (p. 425). V. Japanese state papers on the Macao-Nagasaki trade, 1611-1621 (p. 428). VI. The martyrdom of Omura, August 25, 1624 (p. 436). VII. Text of the Sakoku, or Closed Country Edict of June, 1636 (p. 439). VIII. Oath of Apostasy, 1645 (p. 441). IX. List of Japanese nengo or year periods, 1532-1652 (p. 443). X. List of Nagasaki Bugyo, 1587-1650 (p. 444). XI. Heads of the Jesuit mission in Japan, 1549-1643 (p. 445). XII. Visitors of the Jesuit Province of Japan and the Vice-Province of China, 1568-1643 (p. 446). XIII/ The apostate fathers, 1633-1643

(p. 447). XIV. Summary of martyrology, 1614-1650 (p. 448). Notes. Bibliography. Index and glossary.

Boxer provides an account [p. 348] of a Yedo (Tokyo) jail by Spanish Franciscan, Fray Diego de Francisco in 1615. "The official ration was a handful of rice daily, barely enough to sustain life for forty or fifty days,... On the other hand, the guards could sometimes be bribed to allow the prisoners' friends to smuggle in a little rice, *soy*, [sauce] or fish by way of supplementing the starvation diet." Note: This passage was first cited by Hymowitz 2007, in "History of the Soybean." Address: Camoens Prof. of Portuguese, King's College, Univ. of London, England.

267. Manber, David. 1967. Wizard of Tuskegee: The life of George Washington Carver. New York, NY: Crowell-Collier Press. vi + 168 p. Illust. Index. 21 cm. [9 ref]

• **Summary:** George Washington Carver lived from about 1864 to 1943. This book is part of the series "America in the Making" written for teen-agers as an introduction to important American individuals, ideas, and events. The chapter titled "Carver Rediscovered the Peanut" notes that in 1904 the boll weevil was making it increasingly difficult to grow cotton in the South. So Carver urged farmers to plant less cotton and to raise cowpeas, sweet potatoes and peanuts to sell. "Although he had been successful at growing the soybean years before anyone had even heard of it, he did not suggest it to the farmer because he felt it was too different for southern farmers, too unfamiliar to appeal to them. Peanuts, on the other hand, were not at all strangers to Alabama farms. Almost every farmer had a little patch of peanuts somewhere near the house, grown for the children to eat." The peanut is a native of South America. "The Spanish conquistadors brought peanuts back to Spain with them. From there they found their way to Africa in the 17th century, and were brought to America by slave traders, who fed them to the slaves. 'Goober,' another word for the peanut, is actually an African word" (p. 118).

Carver developed hundreds of food and industrial products from the peanut, including milk, cream, and butter. "Peanut milk was a lifesaver in the Belgian Congo. Cows could not be raised there, because they would be devoured by leopards or diseased by flies... When missionaries started feeding the babies peanut milk, the babies lived and flourished.

"Carver lectured everywhere on the peanut and issued bulletins regularly. In addition, he lectured on the soybean and the many products that could be made of it: flour, meal, coffee, breakfast food, oil, milk. Again, however, he realized that southern unfamiliarity with the soybean would be a hindrance to its development" (p. 121).

"Carver published recipes for cooking peanuts for the home in 1913, but the original bulletin was in its sixth printing by 1916. It gave directions for growing, and 105 different ways of preparing the peanut for eating" (p. 125).

The first commercial crops of peanuts in Alabama were finally planted in 1917. Coffee County, Alabama, on the verge of bankruptcy in 1915, soon became the state's leading peanut growing county. In 1919 its largest town, Enterprise, erected a \$25,000 shelling plant. It also honored Carver by placing a large monument in the town square. In May 1919 peanut growers met in Atlanta, Georgia, and organized the United Peanut Associations of America. They invited Carver, age 55, to speak about the peanut. Carver showed them his peanut products. "There were leather stains, wood stains, sauces, milk, skim milk, buttermilk, ice cream, evaporated milk, fruit punch. He showed them peanut coffee, instant coffee with cream. The *Peanut Promoter* for October 1920 wrote that the biggest thing at the convention had been the address of Professor Carver... The following January the association invited him to address the Ways and Means Committee of Congress." His presentation and exhibit there "was a powerful factor in the committee's decision to write a stiff tariff into the Fordney-McCumber Bill; the highest tariff the peanut industry ever had. The trade magazine *The Peanut World* wrote in their May 1921 issue: 'With profound pleasure and pride we dedicate an entire page to that incomparable genius to whose tireless energies and inquisitive mind the South and the country owe so much...'" (p. 139).

268. *Soybean Digest*. 1968. Lodwick dead, pioneered U.S. soy oil in Spain. April. p. 52.

• **Summary:** William Lodwick, Washington, DC, a former administrator of the USDA's Foreign Agricultural Service and an important figure in the world of soybeans, died March 7. He helped to introduce soybean oil to Spain.

269. Inglett, George E.; Blessin, C.W.; Bookwalter, G.N. 1968. Flavor aspects of cereal-oilseed-based food products. *Food Product Development* 2(2):66. April/May. Presented at the 154th National American Chemical Society Meeting, Chicago, Illinois, Sept. 10-15, 1967. [10 ref]

• **Summary:** Discusses CSM [corn, soy, milk], its applications, and flavor constituents. CSM contains processed corn meal, toasted soy flour, and nonfat dried milk. Proper heat treatment destroys the lipid active enzymes: lipases, lipoxidase, and peroxidases.

Table I lists locations of CSM acceptability trials: Bolivia, Colombia, Dominican Republic, El Salvador, Guatemala, Honduras, Venezuela, Peru, Greece, Spain, Portugal, Jordan, Turkey, Yemen, Malagasy, Senegal, Sierra Leone, Tanzania, Macao, Singapore, Taiwan.

Note: This is the earliest document seen (May 2014) concerning soybean products (cereal-soy blends) in Yemen. This document contains the earliest date seen for soybean products (cereal-soy blends) in Yemen (1968); soybeans as such had not yet been reported by that date. Address: USDA, Peoria, Illinois.

270. *Soybean Digest*. 1968. Cargill has opened plant in Amsterdam. Aug. p. 42.

• **Summary:** The plant began operations in late March 1968, but it officially opened on May 22. Cargill Industries N.V. is a subsidiary of Cargill, Inc. (Minneapolis, Minnesota).

“The plant will be able to process 500,000 tons of soybeans annually, however it will crush 300,000 tons.”

The manager of the plant is Adrianus Blankestijn, former manager of Cargill’s soybean plant in Memphis, Tennessee. Cargill is also associated with a plant in Tarragona, Spain.

A photo shows the Amsterdam plant and its many tall silos for storing soybeans.

271. Pogeler, Glenn H. 1968. Report from the Soybean Council. *Soybean Digest*. Sept. p. 64, 66-67.

• **Summary:** The year 1968 was a difficult one—a year of change. “Right now it seems as though the heavy artillery of our competitors is zeroed in on the soybean industry.” “Presently the major emphasis of the Council is placed on increased utilization of soybean oil” [which is in surplus]. The council has supplied technical experts on feed and oil to European and Asian countries. “A number of supervisory and sales trips were made by our staff in Arlington” [Virginia]. The biggest competitor to soybean oil is sunflower oil. An increasing number of the Councils activities are “carried out through third party cooperative agreements with overseas organizations. The German Oil Millers Association, the German Mixed Feed Association, Assalzo and Assoliosemi in Italy, the Oil Technologists Association of India, and the Pakistani Vanaspati Manufacturers Association are organizations that cooperate with us in joint activities.”

Last year the Council “closed offices in Casablanca, Morocco; Cairo, Egypt; Bogota, Colombia; Rome, Italy, and our Spanish country office. Soybean Council offices in New Delhi, India; Karachi, Pakistan; and Ankara, Turkey have been converted from the utilization of funds provided by the Foreign Agricultural Service for the administration of these offices to dollars which are supplied from our U.S. budget. We will maintain our joint contract with FAS...” A portrait photo shows Glenn Pogeler. Address: President, Soybean Council of America, Inc.

272. Smith, Donald L. 1968. The challenges from Europe and the USSR. *Soybean Digest*. Sept. p. 42-43.

• **Summary:** Major competitors to soybean oil are safflower in Spain, rapeseed in northern Europe, and sunflowers in the USSR. A photo shows Donald Smith. Address: Vice President for Research, Pacific Oilseeds, Inc., Woodland, California.

273. U.S. Department of Agriculture. 1968. Farmer for the world (Color motion picture). Washington, DC. 28½ minutes. Reviewed in *Soybean Digest*, June 1976, p. 36. \*

• **Summary:** This film depicts the American farmer’s link to the rest of the world, showing U.S. soybeans, wheat, and feed grains on the move from American farmlands to the freighters for their voyages to the docks of Hamburg (West Germany), Tarragona (Spain), Bombay (India), and Yokohama (Japan). And from these destinations, the products are traced to soybean crushing and feed mixing plants, modern hog and poultry farms, flour mills and bakeries, and eventually to supermarkets where consumers are buying the resultant soy oil and soy products, bread, noodles, pork, and chicken.

274. *Soybean Digest*. 1969. Worldwide oils and fats. April. p. 58.

• **Summary:** Discusses: Rapeseed. Thailand. Palm oil. Spain. Korea. Asia. World. Iran.

“Thailand: The first Thai International trade fair—held Dec. 12-29 in Bangkok—drew over 750,000 people and introduced them to 422 U.S. food products including new textured vegetable protein items made from soybeans.”

“Korea: Response to a new U.S. soy beverage tested as part of a Korean school lunch program has encouraged early introduction into the commercial market.”

“Iran: Vegetable oil extraction and processing equipment worth \$750,000 has been ordered by Iran from a British engineering firm...”

275. *Foreign Agriculture*. 1969. Four visiting teams view two different aspects of soybean use. 7(28):13. July 14.

• **Summary:** Teams from Sweden, Portugal, India, and Pakistan, sponsored by the Soybean Council of America, Inc., toured soybean production, processing, and shipping facilities in the USA during May and June. The Indian and Pakistani teams were chiefly interested in soybean oil and the different methods of processing, refining, and shipping this commodity. They arrived in the USA separately but during June combined their itineraries from Minnesota (Minneapolis, Mankato, Albert Lea), to Iowa (Mason City [The plant formerly managed by Glenn Pogeler, now of SCA]), Illinois (Peoria—USDA’s Northern Utilization Research Lab.), Arkansas, and finally Louisiana (New Orleans—USDA’s Southern Utilization Research Lab.). “India, for example, is the second largest market for semirefined U.S. soybean oil, and our exports to that country in 1968 were 200 million pounds. About the same amount will be shipped by the United States in 1969 to India under P.L. 480. The names of the team members from India and from Pakistan are listed.

By contrast, the Swedish and Portuguese teams were primarily interested in the processing and use of soybean meal. Portugal is working to develop a modern beef industry, whereas Sweden is developing a poultry industry. The Portuguese team (whose members names are given) began their U.S. visit on May 16 with a tour of the Chicago



Board of Trade, then visited soybean storage and milling facilities, and farms in the area that produce soybeans and feed the cattle rations containing soybean meal. Then they visited sites in St. Louis, Missouri, and Dallas, Texas. The Portuguese and Swedish teams joined temporarily on May 26-27 in Kansas City, Missouri, to participate in the Third National Feed Production School, sponsored by the American Feed Manufacturers Association.

The names of the Swedish team members are given. On May 21 they visited the USDA's research facilities on the feeding of animals in Beltsville, Maryland, followed by visits to a cooperative poultry processing plant (Rockingham, Virginia), a large integrated farm cooperative (Des Moines, Iowa), and the Chicago Board of Trade.

276. *USDA Plant Inventory*. 1969. Plant material introduced January 1 to December 31, 1967 (Nos. 317904 to 324307). No. 175. 262 p. July.

• **Summary:** Soybean introductions: *Glycine max* (L.) Merrill. Leguminosae.

322689-322695 (p. 184). From Angola. Seeds presented by Instituto de Investigacao Agronomica de Angola, Nova Lisboa. Numbered Sept. 18, 1967." C 8015. Improved. Origin unknown. Maturity 129 days. Nonshattering. Yield 2.550 kg. per hectare. C 8037. Bean No. 279. Origin unknown. Maturity 128 days. Nonshattering. Yield 2.550 kg. per hectare. C 8092. Jubiltan 109. Origin Mozambique. Maturity 129 days. Nonshattering. Yield 2.870 kg. per hectare. E 939. Max C.P.1159A8. Origin Australia. Maturity 128 days. Nonshattering. Yield 2.430 kg. per hectare. E 1151. Bicolor. Origin Angola. Maturity 117 days. Little resistance to shattering. Yield 2.290 kg. per hectare. E 1155. Hernon. Origin unknown. Maturity 126 days. Little resistance to shattering. Yield 2.290 kg. per hectare. E 1217. Bicolor do Cuima. Origin Angola. Maturity 118 days. Nonshattering. Yield 2.290 kg. per hectare.

323275-323278 (p. 196-97). "From Pakistan. Seeds collected by Ralph S. Matlock, Department of Agronomy, Oklahoma State University, Stillwater, Oklahoma. Received Oct. 11, 1967." Col. No. 7. Mirjanhat. Rawalpindi. Presented by Rafiq Ahmad. Believed to be of Burmese origin. Yellow. Col. No. 12. Mothi. Ayub Research Institute, Lyallpur. Presented by Shamshad A. Kahn, Oilseed Botanist. Native species. Col. No. 14. K-16. Native variety. Seed small, black. Presented by Manzoor Ahmad A. Baluch, Associate Professor of Botany, Agricultural Research Institute, Tando Jam. Col. No. 15. K-30. Seed small, black. Presented by Manzoor Ahmad A. Baluch, Associate Professor of Botany, Agricultural Research Institute, Tando Jam.

323550-323581 (p. 208). "From India. Seeds collected by Theodore Hymowitz, Agricultural Experiment Station, University of Illinois, Urbana, Illinois. Received Nov. 15, 1967." 12 varieties from Nainital District, elevations 4,000 to 7,500 feet. 17 varieties from Almora District, elevations

3,300 to 5,900 feet. Seoni Yellow. Collected by P.L. Digarsey at Seoni, Madhya Pradesh.

323586-323587 (p. 209). "From Portugal. Seeds presented by Jardim e Museu Agricola do Ultramar, Lisbon. Received Nov. 15, 1967. Variety names: Dobrangeana, Sangora.

324066-324068 (p. 237-38) "From Rhodesia [Zimbabwe]. Seeds presented by J.R. Tattersfield, Department of Research and Specialist Services, Ministry of Agriculture, Salisbury Research Station, Salisbury. Received Dec. 6, 1967." Variety names: Geduld, Hernon 237, Hernon 273. Address: Washington, DC.

277. *Soybean Digest*. 1969. Growers continue to back soybeans nationally: Market development. Dec. p. 3.

• **Summary:** "Funds continue to flow in from farmers supporting the American Soybean Assn.'s campaign to promote soybean sales abroad. Many states are in Phase II of the development program which is a voluntary checkoff of ½ cent per bushel made at the [first] point of sale.

"Phase II is an interim program until states pass legislation which enables an automatic deduction of ½¢/bu from all soybean sales. (The ½ cent will be refunded to any farmers who prefer not to support the market development activities in states where growers have passed a checkoff referendum.)

"The legislative program and referendum, Phase III, have already been passed in North Carolina, South Carolina, and Louisiana.

"Funds raised under these programs will be used to develop and expand world markets for soybeans. Funds are matched by the Foreign Agricultural Service [FAS], and in some cases by local processors—so every dollar contributed by farmers is multiplied 5 to 10 times.

"Results of market development activities have been so successful in Japan and Spain that additional funds will be used to develop markets in France, Italy and other nations in Europe and the Far East. Japan and Spain are the biggest importers of U.S. soybeans..."

278. **Product Name:** [Soy Oil, Iberol Soybean Meal].

**Manufacturer's Name:** IBEROL (Sociedade Iberica de Oleaginosas S.A.R.L.). Affiliate of A.E. Staley Mfg. Co. (Decatur, Illinois).

**Manufacturer's Address:** Alhandra, Lisbon, Portugal.

**Date of Introduction:** 1969.

**Ingredients:** Soybeans.

**How Stored:** Shelf stable.

**New Product—Documentation:** Soybean Digest Blue Book issue. 1969. p. 107. De Smet solvent system. Neither processing capacity nor storage capacity are given. Makes 44% and 50% protein soybean meals.

279. Burnett, Ray S. 1969. The role of soybean meal in the

development and use of modern livestock and poultry feeds. Arlington, Virginia: Soybean Council of America, Inc. 37 p. 24 cm. Printed in Madrid, Spain. [54 ref]

• **Summary:** This booklet was printed in Madrid, Spain. Contents: Introduction. 1. Availability. 2. Technical advances: Heat processing of soybean meal, vitamins (B-2, B-12), minerals, amino acids and proteins, protein-energy ratio. 3. Specifications: 50% vs. 44% soy meal. 4. Increase in productivity from technical advances: Broilers, eggs, swine, beef cattle, calves and milk. 5. Formulation and feeding practices: Poultry nutrition for meat and eggs, turkeys, ducks, and pigeons, swine nutrition, cattle nutrition (growing-fattening cattle, milking cows, calf milk replacers {substituting soy flour for part or all of the dry skim milk}, calf starters {used only after calves are 24 days old}), sheep, horses and mules, miscellaneous (rabbit pellets, trout pellets, dog food, mink feed). 6. Continuing needs for improving efficiency of poultry and livestock production.

Contains 27 tables. Note 1. A box, with a logo, near the bottom of the title page states: "Soybean Council of America, Inc. Executive office: P.O. Box 9153, Arlington, Virginia 22209 USA. Cooperating with the United States Department of Agriculture." Glenn Pogeler was executive director of the Soybean Council at this time. Address: Technical Director, Soybean Council of America, Inc., P.O. Box 9153, Arlington, Virginia 22209.

280. Rodrigues, Joao. 1969. Rodorigesu Nihon daibuntan [The art of the language of Japan. Edited by Shôzô Shima and Masakazu Shima]. Tokyo: Bunka Shobô Hakubunsha. 479 p. 27 cm. [Por; Jap]\*

• **Summary:** This is a reprint of the second major dictionary published by Jesuit priests in Japan. The original edition was published in 1604 in Nagasaki by the Collegio de Iapao da Companhia. Rodrigues lived 1561-1634.

281. Ullmann, Bernard. 1970. Foodlift crews get ready to fly it all out again. *Times (London)*. Jan. 21. p. 6, cols. 1-2.

• **Summary:** A new hangar in the airport on Sao Tome, a Portuguese island, is packed with enough food to feed five million people for about 20 days. "But it is becoming less and less likely that the inhabitants of what was Biafra, for whom it was intended, will ever see it.

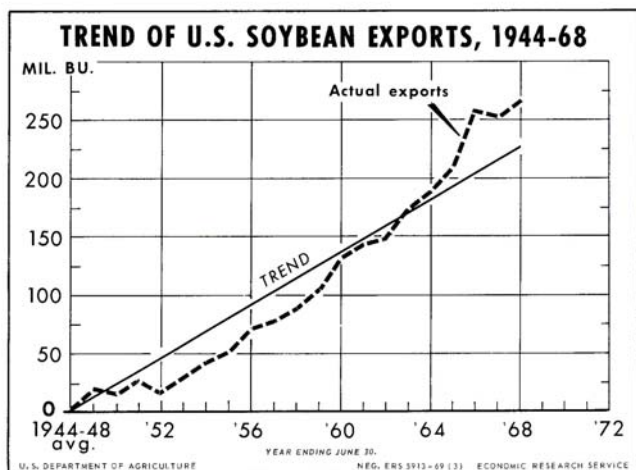
The food was sent from the Europe and the United States through various religious and charitable organizations. The 7,000 tons of food comprises "formula 2"—a scientifically prepared mixture of maize, milk and soya flour which, when mixed with water, provides a complete food, rich in proteins—beans, semolina, and powdered milk." Only 10 days ago this was the main base for the airlift into Biafra; each night up to 300 tons of food and medicines were flown to the Uli landing strip." Today there is no activity at the airport. If Nigeria does not lift its 'embargo' on the food supplies within the next few days, they will probably be sent

elsewhere to feed hungry people.

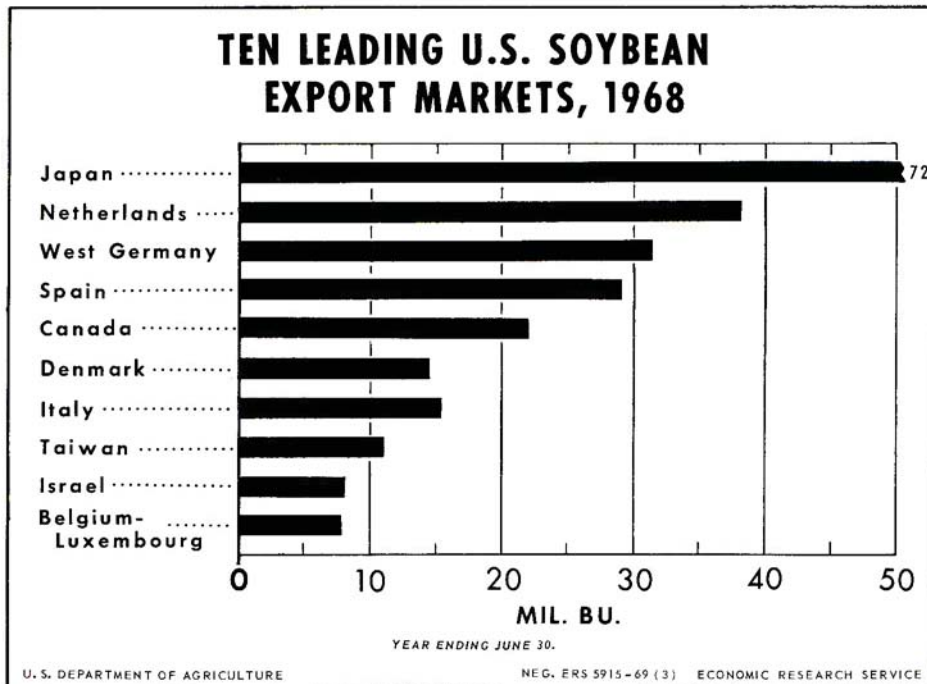
Note 1. This is the earliest document seen (Aug. 2009) concerning soybean products (soya flour) in Sao Tome & Principe; soybeans as such have not yet been reported.

Note 2. On 30 May 1967 the Eastern Region of Nigeria seceded, proclaiming itself the Republic of Biafra, and plunging the country into civil war. Nearly a million "Biafrans" (mostly Igbos / Ibos) died, many of starvation, despite international efforts to provide relief. On 12 Jan. 1970 the secessionists finally capitulated.

282. American Soybean Association. 1970. Soybean Digest Blue Book Issue. Hudson, Iowa: American Soybean Assoc. 176 p. March. Index. Index of advertisers. 22 cm.



• **Summary:** Starting on page 54 is a section titled "Charting the course of soybean trade," which states: "Steadily bigger harvests, strong foreign demand, and aggressive market development have combined to make soybeans the leading U.S. crop as a dollar earner in foreign markets. We exported over \$1.1 billion worth of soybeans and soybean products in 1967-68, and our share of world exports has risen from 2%



in 1934-38 to about 90%. Output from about 2 out of every 5 harvested soybean acres goes abroad as beans or products. See the following pages.”

On the top half of p. 55 is a bar chart titled “U.S. soybean exports as a share (percentage) of total U.S. agricultural exports. The percentage increased from about 1½% in 1948 to about 17½% in 1968.

On the bottom half of page 55 is a graph titled “Trend of U.S. soybean exports, 1944-68. It starts at zero in 1944-48 and increases to just over 250 million bushels in 1968. Since 1964 it has been growing more rapidly than previously.

On the top half of p. 56 is a bar chart titled “State shares of U.S. soybean exports,” which shows the dollar value of exports from 10 leading states in 1954 and 1968. The states, in descending order of 1968 exports are Illinois, Iowa, Arkansas, Missouri, Indiana, Minnesota, Mississippi, Ohio, Louisiana, and North Carolina.

On the bottom half of p. 56 is a bar chart titled “Ten leading U.S. soybean export markets, 1968,” with the amount of soybeans exported to each market in million bushels. The countries in descending order are Japan (50), Netherlands (38), West Germany (32), Spain (28), Canada (23), Denmark (15), Italy (16), Taiwan (12), Israel (10), and Belgium-Luxembourg (9). Address: Hudson, Iowa.

283. U.S. Department of Agriculture. 1970. The annual report on activities carried out under the Public Law 480, 83d Congress, as amended, during the period January 1 through December 31, 1969. Washington, DC: U.S. Government Printing Office. See p. 122-27. Cover reads: Food for Peace: 1969 Annual Report on Public Law 480.

• **Summary:** Table 20 is titled “Title II, Public Law 480–

Total commodities by program type, fiscal year 1969.” The three main program sponsors and distributing agencies are (1) Volag (American voluntary agencies, UNICEF and UNRWA [United Nations Relief and Works Agency] unless otherwise noted), (2) Government to government, and (3) WFP (World Food Program). Each of these are Private Voluntary Organizations (PVO/PVOs), registered with USAID. Only two foods containing soy protein were distributed: CSM (Corn soya mix) and WSB (wheat soya blend). They were lumped together in the statistics and sent in the following amounts (in thousands of pounds) to the following continents and countries: Africa total 89,470 lb: Cameroon 600, Congo 162, Dahomey 80, The Gambia 385, Ghana 976, Kenya 478, Lesotho 775, Malawi 39, Mali 4,500, Morocco 300, Nigeria 78,232, Senegal 80, Sierra Leone 1,810, Tanzania 365, Togo 18, Upper Volta 670. Near East-South Asia total 222,817: Gaza [occupied by Israel since 1967] 2,653, India 216,176, Jordan 1,527, Jordan-West Bank [occupied by Israel since 1967] 1,042,





Lebanon 738, Nepal 18, Pakistan 1, Syria 662.

Far East total 57,861: Burma 360, Indonesia 3,669, Korea 9,698, Laos 53, Macao 113, Malaysia 2,474, Philippines 3,140, Ryukyu Islands [located south of Japan, incl. Okinawa, Sakishima, and Amami island groups. Self governing from 1966. Returned to Japan in 1972] 227, Vietnam 38,127.

Latin America total 45,291: Bolivia 72, Brazil 19,851, Chile 2,605, Colombia 1,696, Costa Rica 142, Dominica 4, Dominican Republic 6,680, Ecuador 608, El Salvador 1,178, Grenada 68, Guatemala 1,773, Guyana 58, Haiti 1,585, Honduras 435, Jamaica 124, Martinique [French] 75, Panama 734, Paraguay 2,477, Peru 4,847, Uruguay 279.

Grand total: 415,439,000 lb of CSM and WSB. The following amounts of CSM/WSB (in 1,000 lb) were distributed by the three groups: Volag 292,587, Government to government 122,851, and WFP 1. Countries receiving more than 1 million lb of CSM and WSB combined (in millions of pounds): India 216.2, Nigeria 78.2, Vietnam 38.1, Brazil 19.9, Korea 9.7, Dominican Republic 6.7, Peru 4.8, Mali 4.5, Indonesia 3.7, Philippines 3.1, Gaza 2.7, Chile 2.6, Malaysia 2.5, Paraguay 2.5, Sierra Leone 1.8, Guatemala 1.8, Colombia 1.7, Haiti 1.6, Jordan 1.5, El Salvador 1.2, Jordan West Bank 1.0.

Note: This is the earliest document seen (Feb. 2002) concerning soybean products (cereal soy blends) in Martinique, or Panama. This document contains the earliest date seen for soybean products in Martinique, or Panama (1969); soybeans as such had not yet been reported by that date. Address: Washington, DC. Phone: 703-875-4901 (1991).

284. Instituto de Investigacao Agronomica de Angola. 1970. [Angola Institute of Agricultural Research, annual report]. Angola. 233 pp. [Por]\*  
Address: Angola.

285. Stobart, Tom. 1970. *The International Wine and Food Society's guide to herbs, spices and flavourings*. New York, NY: McGraw-Hill. 261 p. Illust. (part color). Index. 26 cm.  
• **Summary:** For a book published in 1970, this book contains a great deal of original and useful information. Note that the word "seasoning(s)" does not appear in the title or the index. For many entries, the equivalent word in various European languages is given. In addition, for plants, the botanical name and family are usually given. Contents: Black and white illustrations. Colour plates. Introduction: The history of flavourings, the importance of flavourings, the origin of this book ("I come to this subject as a traveller who has lived in a number of different countries"), the scientific basis of flavouring, scientific, popular and foreign names, synthetic and harmful flavourings, flavouring in practice, growing herbs. An alphabet of herbs, spices and flavourings (The entries are in alphabetic order). Appendix.

Soy related entries: Harvey's sauce: "One of the old English sauces... In 1870, the courts decided there was no exclusive commercial right to the name 'Harvey's Sauce', as there are recipes for it dating back to at least the 17th century.

"Though there are many formulae, it is, in general, based on walnut and mushroom ketchup-flavoured with anchovy, garlic, and often soy sauce and vinegar. It has the appearance of Worcestershire sauce, but is not hot although it does contain some chilli."

Soy [sauce]–Soya bean: "The soy bean is undoubtedly the world's most important legume." It can be eaten as a fresh bean [green vegetable soybeans], as a dried bean and as soybean flour. It is a leading source of cooking oil "much used as a substitute for olive oil in Spain." From it one can make a kind of milk [soymilk]. "In the East [East Asia], it is also fermented to make various kinds of curd and bean cheese. The soy product which concerns us is soy sauce."

It originated in China and "is thought to have been brought from China to Japan by a Buddhist priest about A.D. 500. In the West it became well known during the nineteenth century. It is one of the ingredients of Worcestershire sauce and Harvey's sauce."

Worcestershire sauce (p. 236-37): See also the original 1970 ed. published in England.

Also discusses: Ketchup, M.S.G., oil ("The word 'oil' is derived from 'olive'"), sesame (incl. tahina. "The pure oil is almost without taste or smell and does not easily go rancid in hot countries, which is one reason for its popularity"). Address: England.

286. *Foreign Agriculture*. 1971. U.K. fats and oils imports up as Britain buys more soybean oil. July 19. p. 6-7.

• **Summary:** Imports of soybean oil as oil in 1970 reached the very high level of 60,500 tons. As usual, most of it came from Canada, with shipments totaling 25,900 tons. Second most important supplier of soybean oil in 1970 was Spain, with 16,400 tons. Direct soybean oil imports from the U.S. totaled 1,600 tons.

287. Fischer, R.W. 1971. *Plans for developing world markets for U.S. soybeans and soybean products*. Cedar Falls, Iowa. 322 p. Nov. Prepared for the American Soybean Association, Hudson, Iowa.

• **Summary:** Contents: Summary: World Market Development Plan for Soybeans and Soybean Products. 1. The World Situation for Marketing Soybean Products 2. Objectives of the Long Range Market Development Program 3. Outline of Market Development Activities and Methods 4. Requirements for the Market Development Program 5. Market Development Plans by Area and by Country. West Europe: Austria, Belgium / Luxembourg, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland,

United Kingdom.

East Europe: Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Rumania, Yugoslavia.

Far East: Australia, Hong Kong / Singapore, Japan, Korea, Philippines, Taiwan, Thailand.

Others: Iran, Israel, Mexico, North Africa, Southeast Asia.

6. Details of Certain Key Marketing Programs, Operations and Methods. 7. The Market Development Staff: Responsibilities and Qualifications. 8. Market Development Program Budgets. 9. Appendices.

Note: This table of contents was accompanied by a letter on Soypro International, Inc. letterhead signed by Linda Schipper, Secretary to R.W. Fischer. Address: President, Soypro International Inc., 314 Main St., Cedar Falls, Iowa 50613.

288. Godin, V.J.; Spensley, P.V. 1971. Oils and oilseeds: Soyabean. *TPI Crop and Product Digests* No. 1. p. 148-51. [19 ref]

• **Summary:** World soybean production has been increasing at the rate of 2.3% per annum from 1959 to 1968. World production has grown from an average of 19,724 tonnes in 1959-63 to an average of 38,405 tonnes in 1964-68. The three leading producing countries are USA (24,789,000 tonnes average 1964-68), China (10,978,000), and Brazil (559,000). The major importing countries are Japan (347,000 tonnes average 1964-1968), West Germany (262,000), Spain (136,000), Netherlands (97,000), Italy (93,000), Canada (83,000). Fluctuating prices and major influences affecting the basic trends are discussed. Address: TPI (Tropical Products Inst.), 56/62 Gray's Inn Rd., London WC1X 8LU, England.

289. Farmilant, Eunice. 1972. *Macrobiotic cooking*. New York, NY: New American Library. 224 p. Foreword by Herman Aihara. May. Index. 18 cm. [31 ref]

• **Summary:** This pocketbook has a color (beige) photo on the cover of ears of wheat, one wooden spoon filled with soybeans and one filled with unpolished rice. It is "A basic introductory guide to cooking and eating the macrobiotic way." The author's interest in macrobiotics began in April 1968. Basic information on soyfoods (especially miso, tamari, and tofu) is given on pages 29, 33-38, 213-14. Soy-related recipes include: Wheat berries and black beans (i.e. black soybeans, p. 78). Sprouts (incl. soy sprouts, p. 82-83). Miso pickles (p. 124-25). Miso soup (p. 128-29). Cream of miso soup (p. 135). Black beans and wheat berries (p. 139).

There is an entire chapter on miso and tofu (p. 142-46) including: What makes miso so beneficial? Barley miso (nutritional analysis). Miso-vegetable stew. Miso-rice. Miso stew with vegetables. Miso-vegetable spoon bread. Homemade tofu (curded with fresh lemon juice).

Pizza-Macrobiotic style (with miso, p. 149). Chop suey

(with tofu and miso, p. 151-52). Miso bechamel sauce (p. 159). Miso gravy. Simple tahini and tamari sauces (p. 160). Tempura dip (with tamari). Simple miso spreads (p. 161). Miso-vegetable spread. Miso-watercress spread.

There is a directory of macrobiotic stores and restaurants in the U.S. (p. 191-203, subdivided alphabetically by state, and within each state alphabetically by city). The following states have the following number of stores and restaurants: Alaska 1, Arizona 4, Arkansas 1, California 32, Colorado 4, Connecticut 18, District of Columbia 3, Florida 14, Georgia 7, Hawaii 2, Illinois 7, Indiana 2, Iowa 5, Louisiana 4, Maine 14, Maryland 7, Massachusetts 51, Michigan 12, Minnesota 3, Mississippi 2, Missouri 3, Nevada 1, New Hampshire 20, New Jersey 9, New Mexico 3, New York 61, North Carolina 5, Ohio 14, Oklahoma 3, Oregon 2, Pennsylvania 8, Rhode Island 5, South Carolina 1, Texas 4, Utah 1, Vermont 26, Virginia 4, Washington 3, Wisconsin 2.

There is also a directory of stores, restaurants, and centers outside the U.S. (p. 204-07, subdivided by country). The following countries have the following number of stores, restaurants, or centers: Australia 1, Belgium 2, Brazil 2, Canada 15, Denmark 4, France 29, Germany 1, Holland (Netherlands) 2, India 1, Italy 1, Japan 3, Portugal 1, Puerto Rico 1, Spain 1, Sweden 1, Switzerland 2, United Kingdom: England 13, Scotland 1, Vietnam 2.

A list of wholesale distributors in the U.S. (p. 208-09) includes Shiloh Farms (Route 59, Sulfur Springs, Arkansas; [Warren Clough]), Erewhon Trading Co. (8003 W. Beverly Blvd., Los Angeles, California 90048), Chico San Foods (1262 Humboldt Ave., Chico, California 95926), Erewhon Trading Co. (33 Farnsworth St., Boston, Massachusetts 02210), Deer Valley Farms (Guilford, New York 13780), Infinity Food Co. (171 Duane, New York, NY 10013), Mottel Foods (451 Washington, New York, NY 10013), Juniper Farms (Box 100, Sugar Loaf, NY 10981), Pioneer Specialty Foods (Fargo, North Dakota 58100), Merit Food Co. (Pill Hill Lane, Box 177, Bally, Pennsylvania 19503), Essene (58th & Grays Ave., Philadelphia, PA 19143).

290. Baker, Bruce. 1972. U.S. soybean complex exports top \$2 billion in fiscal year 1972. *Foreign Agriculture*. Sept. 18. p. 5, 12.

• **Summary:** For the first time, the U.S. soybean crop has become the Nation's leading cash crop. In fiscal year 1972, U.S. farmers reported higher cash receipts for soybeans than for corn, which has long been the leading cash earner. The soybean crop also reached another important milestone when it became the first agricultural commodity to have total annual exports valued at more than \$2,000 million; the total export value of soybeans and soybean production hit an all-time high of \$2,004 million. The devaluation of the U.S. dollar lowered the price of U.S. soybeans in terms of many foreign currencies. The price was reduced most for Japan and the European Economic Community—which together

take 65% of total U.S. soybean exports. Within the EC, the Netherlands was the leading market for U.S. soybeans. Japan is the second largest market for U.S. soybeans, Spain the third. Address: Fats and Oil Div., Foreign Agricultural Service.

291. Weisberg, Samuel M. 1972. Developing and marketing low-cost protein foods in developing countries. Experience indicates that private industry must play a major role. *Food Technology* 26(9):60, 62, 64, 66, 68. Sept.

• **Summary:** Presents case histories of the following low-cost protein foods: Reconstitutable powder products—ProNutro (Durban, South Africa), Nutresco (Salisbury, Rhodesia), Incaparina (Guatemala, Colombia, El Salvador, Brazil). Milky beverages—Vitasoy (Hong Kong), Vitabeen (Yeo Hiap Seng Ltd., Singapore), Vitamilk (Bangkok, Thailand), Miltone (India). Soft drinks—Puma (soft drink developed by Monsanto and franchised to D’Aguiar Brothers (DIH) Ltd., Georgetown, Guyana), Samson (made by Coca-Cola Co., sold in Paramaribo, Surinam). Soup products—Nutrovite (Salisbury, Rhodesia; it “has been marketed for 7 years in Rhodesia, Mozambique, and Angola”), Protone (South Africa, no soy). Baked goods—Modern bread (India. “It is planned to improve the protein quality of the bread by means of groundnuts or soybeans, instead of through the use of amino acids.” Pasta products—Golden Elbow Macaroni, Sam Yang Noodles.

“Production of Vitasoy at present is at the rate of over 100 million 6½- and 8½-oz. bottles/yr, and sales have recently been exceeding the sales of conventional soft drinks such as Coca-Cola.” Six reasons for the product’s success are given, including strong marketing and advertising (5% of sales price goes for promotion and advertising). Address: Executive Director, League for International Food Education.

292. Borrero F., A. 1972. [Soyabeans. Aspects of their cultivation. Varieties]. *Agricultura, Spain* 41(478):81-84. [11 ref. Spa]\*  
Address: Departamento del Algodón, INIA, Sevilla.

293. Jardim e Museu Agricola do Ultramar, Lisboa. 1972. Index seminum 1972 [Seed list, 1972]. *Lisbon, Portugal, Jardim e Museu Agricola do Ultramar* 15 p. [Lat]\*

294. Rollier, Michel; Obaton, Michel. 1972. Quelques aspects techniques des possibilités de culture du soja dans le midi de la France [Some technical aspects of the possibilities of soybean culture in the south of France]. *Bulletin des Recherches Agronomique (Gembloux, Belgium)* H Series. p. 422-39. [Fre]

• **Summary:** Here the authors (who are probably French, since they used to work at INRA and CETIOM) describe in great detail the situation with soya in France at the beginning of the 1970s. Contents: Introduction. Climatic needs of

the soybean. Varietal needs: L. Rouest selected many new varieties, but these have been largely surpassed in yield by American varieties. Cultural techniques. Inoculation of the seeds. Economic aspects

Tables show: (1) European importation of soybeans in 1969. The top importing countries are: Germany 1,960,000 tonnes (metric tons). Spain 902,000 tonnes. France 845,000 tonnes. Italy 740,000 tonnes. Holland [Netherlands] 626,000 tonnes. Great Britain 396,000 tonnes, and Belgium 322,000 tonnes.

(2) Price of crude protein from different sources: Beef 49.58 FF. Porc: 46.35 FF. Poultry: 16.17. Reconstituted powdered milk: 4.40 FF. Average leguminous seeds: 3.78 FF. Soybeans: 1.49 FF.

Figures show: (1) Map of the parts of southern France where soybeans will grow with and without irrigation. (2) Consumption of soybean meal in France. (3) Expansion of soybean area and yield in the USA, 1924-1968. In 40 years, soybean area has been multiplied 24-fold, and the yield 2.4 fold. (8) Yield of soybean seeds obtained in two trial fields as a function of the richness of inoculation. (9) Yield of corn and soybeans at critical temperatures of 90, 100, and 110°C. (10) Yield of corn and wheat at critical temperatures of 90, 100, and 110°C.

Hervé Berbille, who kindly sent this document to Soyinfo Center adds (5 March 2014): “So far as I know, this is just about the best document describing the situation of the soya in France at the beginning of 1970s. However, this document makes me also very sad because it confirms (see page 428, 2. Études Variétales) that all of Léon Rouest’s work was definitively lost just as I feared: a hard life of labour and relentless work wasted because of the egoism of some.”

“Léon Rouest’s work was denigrated in particular by the French colonial traders of peanuts imported from the French Empire (Sénégal). They strove to discourage the culture of soya with the French farmers. As a result, in the 1970s, the delay of France in varietal selection is huge, since the selection was interrupted after work Rouest and Christian Schad in the 1920s and 1940s. That’s why Rollier and Obaton write they are ‘widely overtaken’ (*largement dépassés*). Nevertheless, Léon Rouest had developed very successful varieties for their time. If his works had been pursued, France would have benefited from successful varieties in 1970. An immense waste in the end.

“Today, the southwest of France still provides 70% of the French production of soybeans. However they are also grown in Burgundy (east-central France) and Alsace (northeast France).” Address: 1. C.E.T.I.O.M.; 2. I.N.R.A. Both: France.

295. Ruiz-Fornells, R. 1972. [Soyabean trials carried out in Spain. Varieties and sowing dates. Sowing density. Fertilizer N. Herbicides]. *Agricultura, Spain* 41(478):85-90. [Spa]\*



296. Ferrándiz, Vicente L. 1972. *Armonías alimenticias: La buena combinación de los alimentos*. Quinta edición. Corregida y ampliada [Nutritious harmonies: The good combination of foods. 5th ed., corrected and enlarged]. Viladrau (Gerona prov.) or Barcelona, Spain: Ediciones Cedel. 112 p. Portraits. Illust. 23 cm. [Spa]

• **Summary:** The section titled “Harmonious breakfasts for diabetics” (p. 25) recommends a number of dishes containing soy flour and gluten, especially breads made from gluten and/or soy flour. The section titled “alkaline vegetables” lists soybeans (*haba soja*) and soy extract (*extracto de soja*).

A table titled “Some foods and their iron content” (p. 112) lists, in descending order of concentration: Savin (Sabinas), an extract of yeast 0.2170%, Pure gluten 0.0340%, 40% gluten 0.0136%, soybeans 0.0057%. Address: Dr., Barcelona, Spain.

297. Kikkoman Shoyu Co. Ltd. 1973. *The Kikkoman way of fine eating*. Kikkoman Shoyu Co. Ltd., No. 11, 3-chome, Koami-cho, Nihonbashi, Tokyo 103, Japan. 80 p. June 16. Illust. No index. 27 cm. Title changed in 1977 with third printing to *The Kikkoman Cookbook*. [Eng]

• **Summary:** Contents: Preface by Keizaburo Mogi, President of Kikkoman Shoyu Co., Ltd., June 1973. Contents. Part 1: All about shoyu, by Shigeru Otsuka: 1. Shoyu and Japanese food: Japanese cuisine defeated?, the Europeans come to Japan. 2. Japanese food and nature. 3. Shoyu and nature. 4. Japanization of western food. 5. The basic role of shoyu in Japanese cooking. 6. History of shoyu: Fermentation and taste, commercial production, shoyu and the West. 7. Shoyu production process: Raw materials, koji making, fermentation and brewing, pressing. 8. Shoyu and components: The components of bouquet, flavor components, the coloring of shoyu. 9. Shoyu and cooking, shoyu and health. 10. Conclusion. Part 2: Recipes with brewed soy sauce: 11. Appetizers. 12. Salads and Salad Dressing. 13. Beef. 14. Chicken and Egg. 15. Pork and Lamb. 16. Sea food. 17. Sauces. 18. Miscellaneous. 19. Japanese cooking. Postscript.

The term “shoyu” is used throughout this book, except in the recipes (see p. 7 for explanation).

In the section titled “Japanese cuisine defeated” (p. 8-9) Otsuka states that there is no true “American cuisine,” not even the hamburger and hotdog. There are French, Chinese, Italian, and Scandinavian cuisines, but Japanese cuisine is not well known. “You may say that this is because there were too few Japanese in the United States, but that theory doesn’t hold water. By 1940 there were 1.5 times as many Japanese as Chinese in America. But Chinese restaurants are to be found in even small towns in all parts of the United States. Moreover, they are patronized almost exclusively by non-Chinese Americans. Japanese restaurants, on the other hand, are virtually non-existent except for the West Coast and New

York. Further, until very recently customers of such Japanese restaurants were almost all gastronomically homesick Japanese, or occasional Americans invited there by Japanese friends.”

“Certainly there is no mistaking the fact that Japanese cuisine has utterly failed to spread to other parts of the world.”

In the section titled “The Europeans come to Japan” (p. 10), Otsuka notes that Europeans first came to Japan and tasted Japanese food in the mid-1500s. The first [in about 1543] was a group of Portuguese, who landed at Tanegashima, an island off the southern tip of Kyushu. In 1549 a group of missionaries headed by the Spanish Jesuit St. Francis Xavier arrived in Kyoto, at that time the capital of Japan, and began preaching Christianity. The Dutch traders who followed the Jesuits noticed shoyu and started to export it to Europe. “It was about 100 years later that Louis XIV of France began to prize shoyu as a secret ingredient in the luxurious court fare of the time.” Note 1. Louis XIV reigned from 1643 to 1715. Note 2. When we asked Mr. Otsuka for his source concerning Louis XIV’s use of shoyu, he was unable to give any source. However his source may well have been a 1959 Japanese-language leaflet titled *Mieki* by Yataro Obata. Obata admitted in 1983 that his statement was pure speculation.

This book contains numerous color photos of prepared recipes. On p. 19 is a superb old woodblock print by Hiroshige (lived 1797-1858) showing shoyu being made in 19th century Japan. On page 25 are three black-and-white photos showing: (1) Koji being made in a modern, mechanized koji room. (2) Moromi aging in a large, round modern vat. (3) Shoyu being pressed from pressing cloths by modern hydraulic presses. Address: Tokyo, Japan.

298. *Soybean Digest*. 1973. Spain to subsidize soybean farmers. Aug. p. 41.

• **Summary:** “Spain will subsidize soybean production with a \$165 million grant. The price of soybeans in Spain increased in the last 5 months from \$3.90 per bushel to \$18.54 per bushel. The subsidies are designed to reduce the prices to \$9.27 per bushel. They include a \$1.62 cash subsidy, a guaranteed minimum price of \$6.72/bu, as well as selected seeds, technical aid and access to low interest government credit for local soybean growers.”

299. Daehnhardt, Ernst. 1973. Resultados de ensaios de soja efectuados em Mocambique [Results of soybean trials in Mozambique]. *Agronomia Mocambicana* (Lourenco Marques) 7(3):159-69. July/Sept. [20 ref. Por; eng; fre]

• **Summary:** Studies on soybean cultivation in Mozambique were started in 1938 at the Agricultural Station of South (*Estação Agrária do Sul*) at Umbelúzi [Umbeluzi or Umbelosi, in southern Mozambique], by the directorship of the Agricultural and Forest Services (*Direcção dos Serviços*

*de Agricultura e Florestas*). A report of this station verifies that by 1961, 125 varieties of soybeans had been studied, with the following conclusions:..."

In the current study, the best varieties for production of soybeans (seeds) were Clark-63, Hood, and Dare in trials conducted at Umbelúzi; Hood at Mocuba; and 107, Hernon 107, Yellow, and Hood at Sussundenga.

Note: This document contains the earliest date seen for the cultivation of soybeans in Mozambique (1938). The source of these soybeans is unknown. Address: Instituto de Investigacao Agronomica de Mocambique, Lourenco Marques, Portuguese East Africa; Mozambique.

300. Bryan, Harry C.; Vieira, Carlos A. 1973. Soybean oil: A newcomer to Portugal's edible oil industry. *Foreign Agriculture*. Oct. 29. p. 8-9.

• **Summary:** On May 25, the Portuguese Government announced that soybean oil may now be sold to the public as an edible vegetable oil to fill a widening gap between domestic production and consumption of edible vegetable oils. Portugal has been importing soybeans in volume since 1969. Crushing of imported soybeans is expected to expand rapidly, and may well exceed 100,000 tons by 1974 unless the 16 cents per liter "differential" fee on soybean oil sales proves restrictive. Only one plant with a 75,000-ton annual capacity is now exclusively crushing soybeans and refining oil. This capacity is expected to double shortly. Another plant, with 300,000-ton annual capacity, is currently crushing and refining other edible oilseeds but can switch to soybeans and is expected to do so. While the soybean star is rising, the outlook for production of olives for oil is not optimistic. Address: Office of U.S. Agricultural Attaché, Lisbon, Portugal.

301. Cubero, J.I.; Hermoso, M. 1973. La soya en Andalucia [The soybean in Andalusia, Spain]. *Hojas Divulgadoras, Ministerio de Agricultura, Spain* No. 2-73 H. 20 p. [Spa]\* Address: Ministerio de Agricultura, Madrid, Spain.

302. Delgado M., L. 1973. [Soyabean trials in Spain. Two stages in the trials. Promising results]. *Agricultura, Spain* 42(497):556-59. [Spa]\*

303. Borgstrom, Georg. 1973. World food resources. New York and London: Intext Educational Publishers. xi + 237 p. For soybeans, see p. 20-21, 136-37, 222. Index. 23 cm. Series: Intext Series in Ecology. [210\* ref]

• **Summary:** Contents: Series preface. Preface. Introduction. Section I: Production. 1. Food commodities. 2. Prerequisites for crop production. 3. The tropics. 4. Crops and water. 5. Livestock and poultry. 6. What oceans and freshwaters provide. 7. Visions of the future. Section II: Utilization. 8. Food storage, processing, and marketing. 9. International trade in food and feed. Section III: Consumption. 10. Man's

needs. 11. Food and population. 12. Nutrition and health. 13. Protein: the key issue. 14. Food and the ecology crisis. Supplementary tables.

The United States is presently the world's largest producer of soybeans, producing 67% of the total; China produces 24.5% and Others produce the remaining 8.5%. Three pie charts show global production of soybeans and peanuts (groundnuts) (p. 20-21). The section on "Oilseeds" (p. 136-37) also discusses soybeans and peanuts. Tables show (p. 222): (1) "Soybeans—world trade—annual average of 1967-1969 (millions of metric tons)." The USA has 90.1% of the 8.74 MMT of world exports. Europe has 58.3% and Asia has 36.3% of the 8.64 MMT of world imports. The leading countries for net soybean imports are: Japan 2.39, West Germany 1.48, Spain 0.92, Netherlands 0.66, Italy 0.61, Denmark 0.42, Taiwan 0.40, and Canada 0.38. (2) United States soybean exports (millions of bushels). Gives quantity and percentage of total for major regions and individual countries in 1967-68 and 1969-70. The protein in these exports is used mostly for livestock feed; no hungry countries are major importers of soybeans.

India is the world's leading producer of peanuts, producing 33% of the total, followed by China (13.5%), Nigeria (7.3%), the USA (7.2%), and Other (39%). Address: Michigan State Univ.

304. Food and Agricultural Organization of the United Nations. 1973. Soybeans: Area harvested, yield, and production. *FAO Production Yearbook (Rome, Italy)* 27:130.

• **Summary:** The following nations are listed for the first time as soybean producers in the *FAO Production Yearbook*. \* = Unofficial figure. F = FAO estimate. Bolivia: Harvested 1,000 ha in 1971 and 1972, and 2,000\* ha in 1973.

Guyana: Harvested 1,000 ha in 1971\*, 1972\*, and 1973F. Mal W Malays [Malaysia and West Malaysia]: Achieved yields of 1,417 kg/ha in 1961-65, 1,607 kg/ha in 1971, and 1,500 kg/ha in 1972.

Spain: Harvested 2,000 ha in 1971 and 1972, and 13,000 ha in 1973.

British Solomons [British Solomon Islands Protectorate]: Achieved yields of 1,000 kg/ha in 1961-65, 1971, 1972, and 1973.

305. George Ohsawa Macrobiotic Foundation. 1973. Useful names and addresses. 1471-10th Ave., San Francisco, CA 94122. 55 p. 21 cm.

• **Summary:** This macrobiotic directory lists names and addresses of macrobiotic people, organizations, food stores and restaurants, and bookstores in the United States (each category broken down by state), Canada, and abroad. The leading states for individuals are California (7.3 pages), New York (1.5 p.), and Massachusetts (1 p.).

There are listings for the following foreign countries: Argentina, Australia, Austria, Belgium, Brazil, Costa

Rica, Denmark, England, France, Germany, India, Ireland, Italy, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, South Vietnam.

There are ads for the following companies: Sunflower, The Queensberry Bakery (112 Queensberry St., Boston 02215), East West Foundation Center, Sanae Inc. at 2 locations (Sanae Restaurant at 272A Newbury St., Boston, and The Seventh Inn at 288 Boylston St. in Boston), Prasad (1956 University Ave., Berkeley, California) (p. 0). Eden whole earth grocery and delicatessen, and Sun Bakery (330 Maynard St., Ann Arbor, Michigan) (p. 18). Janus Natural Foods (712 7th Ave. South, Seattle, Washington 98104. Phone: 206-MA4-1084) shows that they distribute (import) tamari and miso, as well as sea vegetables. They carry the following brands: Erewhon, Spiral Foods, Deaf Smith, Pure & Simple, Chico-San, Arrowhead Mills (p. 27). Cliffrose (129 Coffman, Longmont, Colorado). Ceres Harvest Natural Foods (3632 W. Colorado Ave., Colorado Springs, CO 80904; wholesale and retail) (p. 39). The Good Karma Cafe (501 Dolores St., San Francisco), and The Good Earth (123 Bolinas Rd., Fairfax, CA 94930) (p. 50). Greenberg's Natural Foods, Inc. (125 1st Ave., New York, NY 10003).

Individuals and organizations interested in macrobiotics in the United States (arranged by state): Massachusetts: James Silver, Seventh Inn, 288 Boylston St., Boston, 02116. Erewhon Trading Co., 33 Farnsworth St., Boston, 02210. Michio Kushi, 440 Boylston St., Brookline, 02146. John Deming, c/o Kushi, 440 Boylston St., Brookline, 02146. Nik & Joanne Amartseff, Top of the Harbor, Gloucester, 01930. Ken & Ann Burns, 22 Knoll St., Roslindale, 02131.

Michigan: Mr. and Mrs. Michael Potter, #1169, 1407 Charlton Ave., Ann Arbor, 48103. Judith A. Bolduc, 822 Brookwood Rd., Ann Arbor, 48104.

The George Ohsawa Macrobiotic Foundation is a non-profit organization located at 1471-10th Ave., San Francisco, California 94122. It was founded in 1971. The aim of the Foundation is to spread the teaching of the unifying principle and its practical applications in daily life. Address: San Francisco, California.

**306. Product Name:** [Soyuva {Bread Fortified with Soya Flour}].

**Manufacturer's Address:** Spain.

**Date of Introduction:** 1974 June.

**New Product-Documentation:** Article in *La Vanguardia Española*. 1974. June. 23. Vasili Cerne and Jorge Sintes Pros. 1975. *La soja: Su cultivo, su excepcional valor nutritivo y sus virtudes dieteticas y curativas*. Barcelona, Spain: Editorial Sintes. See p. 209-15.

307. Brown, Lester R.; Eckholm, Erik P. 1974. Our dietary habits: Should they be changed? For what reasons? *Vital Issues* 24(2):104. Oct. [1 ref]

• **Summary:** This Vital Issue is drawn from the authors'

forthcoming book *By Bread Alone* (Praeger 1974). "Since the time of Malthus, the world food problem has been seen as a food-population problem. Currently population growth continues to generate demand for more food, but, in addition, affluence has emerged as a major claimant on world food resources." It examines the encouraging shift from beef and animal products to vegetable sources of protein, and the economy, ecology, health issues, inefficiency, and waste in beef production. A chart gives per capita meat consumption (including poultry but not fish) for various countries in 1960 and 1972, and the percentage increase during that time as follows (pounds per year): USA (208, 254, +22%), Australia (234, 235, 0%), France (168, 212, 26%), Canada (167, 211, 26%), United Kingdom (158, 171, 8%), West Germany (144, 192, 33%), Sweden (109, 112, 3%), USSR (80, 104, 30%), Italy (70, 136, 94%), Yugoslavia (62, 75, 21%), Spain (51, 96, 88%), Japan (14, 41, 364%). Address: 1. Senior Fellow; 2. Associate Fellow. Both: Overseas Development Council, Washington, DC.

308. *Soybean Digest*. 1974. The international outlook of the soybean market. Oct. p. 8-10.

• **Summary:** Contents: Introduction. Western Europe. Italy (Ferruzzi). Japan. Taiwan and Korea. Latin America.

"Italy: ASA's [American Soybean Assoc.] already made a solid start in expanding soy oil prospects in Europe with an identified soy oil campaign now in its second year in Italy. Watts calls the agreement with Ferruzzi and Company the one outstanding market development activity carried out in Europe recently.

"'Di Soia Si Vivra' (with soy we live), Italian housewives heard again and again during the advertising campaign. And soy oil sold. 'After 7 months, over 50% of the Ferruzzi production at his two plants was identified soy oil. After 12 months, 96% of it was identified soy,' Watts says. 'In the 12 months of the campaign about 20 million lbs. of soy oil were sold to the Italian people.'

"A major competitor began a similar campaign on its own only a few weeks after Ferruzzi started his promotion effort. 'Now, at least 11 brands of soy oil are on the shelves in Italy,' reports Watts."

Note: This is the earliest document seen (April 2007) concerning the work of Ferruzzi and Co. with soybeans.

A pie chart shows 1974-75 U.S. soybean sales commitments: EEC 45%, other Western Europe 6.1%, Japan 21.9%, China 4%, other 4%, undesignated 19.5%.

Tables show: (1) U.S. soybean exports (July to June fiscal year basis) for two years (1972-73, and 1973-74) in quantity (million bushels) and value (million dollars) to: EEC, Spain, Canada, Israel, Japan, Soviet Union, China, Taiwan, unidentified (transshipments), other. (2) U.S. soybean meal exports; the five biggest buyers are West Germany, Japan, Italy, Netherlands, and Poland-Danzig. (3) U.S. soy oil exports; the five biggest buyers are Pakistan,



Peru, Mexico, Canada, and Yugoslavia.

309. Predicasts, Inc. 1974. World manufactured soybean foods. Special Study No. 108. Predicasts, Inc., 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, OH 44106. vi + 93 p. Dec. 24. No index. 28 cm. Research Analyst: Frederick M. Ross.

• **Summary:** Contents: 1. Introduction. 2. Summary. 3. Economics of Soybean Foods: Soybeans, soy flour, meat extenders (based on extruded textured soy flour), synthetic meat (based on spun isolates). 4. Industry structure: General, \$1,000 million food and feed giants (ADM, Cargill, Central Soya, General Mills/Takeda Chemical, Nabisco, Ralston Purina/Fuji Oil, and Esmark [Swift]), other major manufactured soy food companies (Unilever, General Host [New York], Miles Laboratories/Worthington & Kyowa Hakko Kogyo, A.E. Staley Mfg. Co., Stange [Chicago, Illinois], Chambers & Fargus [Humberside, England]), food industry structure. 5. Demand for manufactured soybean products: Demand for meat & substitutes, supply of natural meat, demand for meat substitutes, demand for soy flour. 6. North America: United States, Canada. 7. Latin America: General, Argentina, Brazil, Mexico, Other Latin America (Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay). 8. West Europe: General, France, West Germany, Italy, Spain, United Kingdom, Other West Europe. 9. East Europe: General, Hungary, Poland, USSR, Other East Europe. 10. Africa: General, Egypt, Nigeria, South Africa, Other Africa & Mideast. 11. Asia: General, China, India, Indonesia, Japan, Pakistan, Other Asia. 12. Oceania: Australia, New Zealand, Other Oceania.

Most sections contain numerous tables, mostly on meat and meat substitute consumption, and raw protein consumption, by country. Address: 200 University Circle Research Center, 11001 Cedar Ave., Cleveland, Ohio 44106. Phone: 216-795-3000.

310. Hermoso, M. 1974. El cultivo de la soya [The cultivation of soyabean (in Spain)]. *Hojas Divulgadoras, Ministerio de Agricultura, Spain* No. 5-6-74 H. 24 p. [Spa]\* Address: Ministerio de Agricultura, Madrid, Spain.

311. Hermoso, M. 1974. Posibilidades del cultivo de la soya en Espana [The possibilities of cultivating soybeans in Spain]. *Hojas Divulgadoras, Ministerio de Agricultura, Spain* No. 4-74 H. 16 p. [Spa]\* Address: Ministerio de Agricultura, Madrid.

312. Baner, Mabel. 1974. Cocina vegetariana: 1.150 platos sanos y nutritivos [Vegetarian cookery: 1,150 healthy and nutritious recipes]. Las Fonts de Tarrasa, Barcelona, Spain: Editorial Sintesis, S.A. 271 p. Alphabetical recipe indexes. 22 cm. Series: Biblioteca Naturista. [Spa]

• **Summary:** Page 60 (#179) gives a recipe for Pureed

Soybeans (*Puré de soja*).

313. Kozel, Carlos. 1974. Guía de medicina natural. I. Salud y curación [Guide to natural medicine. I. Health and healing]. Viladrau (Gerona prov.), Spain: Ediciones Cedel. xii + 467 p. Illust. 23 cm. Vol. 1 of his *Guía de Medicina Natural* [Guide to Natural Medicine]. [Spa]

• **Summary:** About natural food and vegetarianism. Pages 185-91 discuss soya, which is called "vegetable meat" and from which one can obtain lecithin, soymilk, whole soy flour, miso, tofu, shoyu, etc. The nutritional composition of soybeans is given.

314. U.S. Department of Agriculture. 1974. The annual report on activities carried out under the Public Law 480, 83d Congress, as amended, during the period January 1 through December 31, 1973. Washington, DC: U.S. Government Printing Office. See p. 94-101.

• **Summary:** Table 18 is titled "Title II, Public Law 480—total commodities shipped by program sponsor, fiscal year 1973." The main program sponsors and distributing agencies, listed alphabetically, are AJJDC (American-Jewish Joint Distribution Committee), CARE, CRS (Catholic Relief Service), CWS (Church World Service), LWR (Lutheran World Relief), SAWS (Seventh-day Adventist World Service), UNICEF, UNRWA (United Nations Relief and Works Agency), and WRC (World Relief Commission). All of these are Private Voluntary Organizations (PVO/PVOs), registered with USAID. The following foods containing soy protein were distributed: CSM (corn soya mix), WSB (wheat soya blend), and small amounts of soya flour. The vegetable oil which was shipped to many countries was soybean oil; it is not recorded here. The foods containing soy protein were sent in the following amounts (in thousands of pounds) to the following continents and countries: Africa (24,340 CSM and 6,8857 WSB): Algeria (1 WSB), Botswana (1,398 CSM), Burundi (464 CSM), Cameroon (47 CSM), Central African Republic (67 CSM), Chad (1 CSM and 1 WSB), Congo (115 WSB), Dahomey (124 CSM), Ethiopia (395 CSM), Gabon (46 WSB), Gambia (211 CSM), Ghana (843 CSM and 1,272 WSB), Ivory Coast (546 WSB), Kenya (409 CSM and 400 WSB), Lesotho (299 WSB), Liberia (1,247 CSM and 487 WSB), Malagasy (365 CSM and 2 WSB), Malawi (210 CSM), Mali (230 CSM), Mauritania (235 CSM), Morocco (908 CSM and 890 WSB), Niger (289 CSM), Nigeria (1,197 CSM), Rwanda (82 CSM and 570 WSB), Senegal (643 CSM), Sierra Leone (2,309 CSM), Sudan (3,826 CSM), Swaziland (57 CSM), Tanzania (3,991 CSM and 5 WSB), Togo (1,083 CSM and 1,562 WSB), Tunisia (2,368 CSM and 485 WSB), Upper Volta (878 CSM and 14 WSB), Zaire (419 WSB and 190 WSB), Zambia (44 CSM).

Europe (27 CSM): Malta (27 CSM).

Near East-South Asia (269,188 CSM and 94,141 WSB): Afghanistan (1 CSM), Bangladesh (99794 CSM and 54,631

CSB), Egypt (3,593 CSM and 2 WSB), Gaza [occupied by Israel since 1967] (1,509 CSM and 3,564 WSB), India (156,216 CSM and 15,768 WSB and 775 soya flour), Iraq (997 CSM), Jordan (2,319 CSM and 536 WSB), Jordan-West Bank [occupied by Israel since 1967] (549 CSM and 1,186 WSB), Lebanon (227 CSM and 411 WSB), Nepal (1,000 CSM and 55 WSB), Pakistan (9,933 WSB), Sri Lanka (1,000 WSB and 50 soya flour), Syria (470 CSM and 473 WSB), Turkey (6,582 WSB), Yemen (People's Democratic Republic of Yemen, or South Yemen) (151 CSM), Yemen (Yemen Arab Republic) (2,513 CSM).

East Asia (41,450 CSM and 20,694 WSB): Fiji (2 CSM and 2 WSB), Indonesia (268 CSM and 12,981 WSB), Korea (1,997 CSM), Laos (2,378 CSM and 750 WSB), Macao (29 CSM), Malaysia (1,124 CSM and 65 WSB), Philippines (22,416 CSM), Singapore (10 WSB), Vietnam (13,236 CSM and 6,886 WSB).

Latin America (94,598 CSM and 42,404 WSB): Bolivia (1,534 CSM), Brazil (33,197 CSM and 5,676 WSB), British Honduras [Belize] (333 CSM and 110 WSB), Chile (548 CSM and 6,038 WSB), Colombia (13,043 CSM and 5,202 WSB), Costa Rica (2,792 CSM), Dominica (78 CSM), Dominican Republic (11,584 CSM and 3,486 WSB), Ecuador (2,253 CSM and 5,446 WSB), El Salvador (1,343 CSM and 2,466 WSB), Grenada (41 CSM), Guatemala (4,007 CSM and 1,090 WSB), Guyana (631 CSM), Haiti (1,581 CSM and 3,395 WSB), Honduras (1,297 CSM and 1,523 WSB), Jamaica (1,150 CSM and 657 WSB), Nicaragua (6,850 CSM and 4,126 WSB), Panama (853 CSM and 699 WSB), Paraguay (3,385 CSM), Peru (7,522 CSM and 1,993 WSB), St. Lucia (81 CSM), St. Vincent (51 CSM), Trinidad and Tobago (2 CSM and 1 WSB), Uruguay (442 CSM and 496 WSB).

Grand total: 429,603,000 lb of CSM and 164,124,000 lb of WSB. Agencies distributing the most CSM and WSB (in million lb): CARE 204, UNICEF 163, CRS 151.

Concerning "veg oil" (soybean oil) shipped under P.L. 480 Title II in fiscal year 1973: India received 61.881 million lb [28,069 metric tons] (p. 97).

Note: This is the earliest document seen (Aug. 2009) concerning soybean products (soy flour, CSM, or WSB) in Chad, Mauritania, and Niger. This document contains the earliest date seen for soybean products (cereal-soy blends) in Chad, Mauritania, and Niger (1973); soybeans as such had not yet been reported by that date. Address: Washington, DC. Phone: 703-875-4901 (1991).

315. *NACLA's Latin America and Empire Report*. 1975. Cargill: Harvest of profits. 9(7):21-29, 31. Oct. [16 ref]

• **Summary:** "Cargill figures prominently in Brazil's emergence in the early 1970's as one of the world's largest soybean producers. Aside from engaging in the soybean export trade, Cargill built one of the world's most modern soybean processing facilities in Ponta Grossa, Brazil. Once

again, timely backing from the U.S. government aided Cargill's expansion. The Overseas Private Investment Corporation (OPIC) lent Cargill Agricola \$2.5 million for the soybean processing plant, while the Eximbank has helped out on three separate occasions with loans totaling over \$1 million.

A large table titled "Cargill's Foreign Food Processing Subsidiaries" includes four soybean plants:

(1) Founded or purchased in Spain in 1963, it began production in 1965.

(2) Founded or purchased in Holland in 1966.

(3) Founded or purchased in France in 1970, it is a joint venture with European firms.

(4) Founded or purchased in Brazil in 1972.

316. Cerne, Vasili; Sintes Pros, Jorge. 1975. *La soja: Su cultivo, su excepcional valor nutritivo y sus virtudes dietéticas y curativas* [The soybean: Its cultivation, its exceptional nutritive value, and its dietetic and curative virtues]. Barcelona, Spain: Editorial Sintes. 224 p. Illust. Series: Biblioteca Naturista. [Spa]

• **Summary:** Contents: Introduction. 1. Origin and general information. 2. Botanical characteristics. 3. Species and varieties. 4. The soybean plant's nitrogen-rich nodules. 5. Surroundings and soil. 6. Preparation of the terrain. 7. Selection. 8. Planting and germination. 9. Cultural care. 10. Crop rotations using the soybean. 11. Intercropping with soybeans. 12. Harvesting the pods. 13. Harvesting the soybean as forage. 14. Yields. 15. The red beetle (*el coleóptero rojo*, family *Elateridae*). 16. Soy oil: Lecithin and soy oil extraction using the Hansa-Muehle system. 17. Soya (*la soja*), the exceptional food: Soya in human nutrition, nutritional composition of the seeds, minerals and vitamins in soya, soya in the kitchen, soy sprouts, soymilk, soy casein, curds and soy cheese (*requesón y queso de soja*), soy flour, soy bread, defatted soy flakes? (*copos de soja*), soy meat (*carne de soja*), soy sauce. 18. The dietetic and therapeutic value of soya: Soya—the vegetable meat, soy proteins, soy oil, soy carbohydrates, digestibility, therapeutic uses, summary of properties and indications, soya in the macrobiotic diet. Appendix: A revolutionary food: The bread of Soyuya (3,600 calories, in existence by June 1974).

"In 1917 soybeans started to be cultivated in Spain thanks to the efforts of an architect from Tortosa, don Juan Abril Guanyabens, who was sick with diabetes. His physician, Dr. Maneget, director of the resort Caldes de Malavella (Gerona) had recommended this new food to counteract his diabetes. The magazine *Consejos para Vivir* (Advice for Living) stated in its issue no. 106 of March 1971 that the above-mentioned doctor, in 1918, published an article on the spectacular results of this plant and its healthy nutritional effects in the Barcelona periodical *La Veu de Catalunya*."

"In about the 1930s a Spanish farmer grew soybeans and

found himself with big difficulties in selling the harvest, even though in other countries it was produced and consumed in huge quantities, due to its high nutritional value, its richness of protein, and its ability to enrich the soil with nitrogen. Nonetheless, there is no doubt that the cultivation of this plant can also provide Spain with substantial economic benefits.

“For this reason in 1934 the Ministry of Agriculture, as indicated by the engineer from Montes, don Joaquín Martín Laplaza, in an interesting work, gave 4 kg of seeds to the Division of Hydrology and Forests (*División Hidrológica Forestal*) to that the latter would conduct the appropriate tests concerning the cultivation of this plant. This was done, and care was taken to vary the locality, type of soil and terrain, climate, and irrigation.

“The locations chosen were: (1) a nursery in the mountains of Prades, between the city of Montblanch and the town of Rojals (province of Tarragona); (2) the city of Seo de Urgell, and (3) in la sierra del Cadí. These test plots were set on the outermost edges of the agricultural pastures and near the forest areas of high altitude, the very areas most likely to be unfavorable for growing soybeans.” But despite this, the soybean plants gave good yields of both seeds and forage (p. 6-8). Address: Spain.

317. Keys, Ancel; Keys, Margaret. 1975. How to eat well and stay well the Mediterranean way. Garden City, New York: Doubleday & Co. xvi + 488 p. Foreword by Jean Mayer, PhD, ScD., Prof. of Nutrition, Harvard Univ. School of Public Health. Index. 22 cm.

• **Summary:** Foreword: Ancel Keys, a very great scientist, revolutionized the science of nutrition. Before his work in the 1940s and 1950s, nutritionists studied nutritional “requirements” and were concerned with deficiency diseases. He refocused attention on diseases of excessive consumption of certain nutrients, especially fats. In his famous laboratory, located under the Stadium of the University of Minnesota, “he demonstrated the crucial role of the fat level of the diet in determining the risk of death from diseases of the heart and blood vessels. He went on to... show that saturated fats and cholesterol were the villains in this effect...” The concept of risk factor in cardiovascular disease originated with Keys.

Chapter 3, on “Diet and health,” contains a wealth of interesting information on many subjects including Linus Pauling and vitamin C, vegetable oils and vitamin E (“a teaspoon of soybean oil provides as much vitamin E as most of the packages sold by the druggist”), Dr. John Ludkin of London and sugar as a cause of coronary heart disease (not true), salt, vegetarians (“recently careful studies on the health of Seventh Day Adventists have produced surprising evidence that there is some truth in the health claim”), autointoxication, aging, yogurt and Elie Metchnikoff (“Louis Pasteur’s successor as director of the Pasteur Institute”), the milk-drinking Masai of East Africa (their bodies handle

cholesterol quite differently from our own), “natural foods” (grown without chemical fertilizers or pesticides), DDT, lecithin (made commercially from soy beans), fad and “kook” diets unlimited (incl. Dr. Atkins “dietary revolution” and—even worse—the ‘Zen macrobiotic diet,’ violently condemned by all who know anything about nutritional science, because it is likely to cause real trouble if actually adhered to”).

The Mediterranean diet is found in Greece, Italy, southern France, and Spain. Characteristics include: Use of olive oil, wine in moderation for dinner, fruit for dessert, meats that contain less fat than their U.S. counterparts. Address: 1. Director, International Cooperative Study on Cardiovascular Epidemiology (in 7 countries), Univ. of Minnesota, Minneapolis and St. Paul, Minnesota.

318. Wright, Louise. 1975. History of Lea & Perrins Worcestershire Sauce (Document part—Document part II). In: Louise Wright. 1975. The Road from Aston Cross: An Industrial History, 1875-1975. Imperial House, Leamington Spa, Warwickshire, England: Smedley-HP Foods Ltd. 84 p. See p. 30-37. 25 x 19 cm.

• **Summary:** Continued: Fair Lawn, near Route 4 out of New York, is an industrial park. Behind the lawns and dignified facades “Lea & Perrins Inc. alone produce 500 bottles of sauce every minute of every working day. The company is now a member of the Imperial Foods Group, but retains its American identity, with its own board of directors and its own purchasing and marketing procedures. The company has been marketing HP Sauce for some years.” It is known as HP Steak Sauce.

An early engraved advertisement titled “The First Introduction” (facing p. 32) shows an innkeeper or restaurateur introducing Lea & Perrins’ Sauce to three well-dressed gentlemen at a table. Two photos (facing p. 33) show: 1. A view of the front of the Lea & Perrins factory, built at Midland Road, Worcester, in 1897. 2. “The disastrous fire in 1964, which destroyed much of the building. With fine cooperation by management and employees, the sauce manufacture was held up for a mere 10 days.”

In the New Zealand town of Te Wairoa, destroyed by a volcanic eruption in 1886, an undamaged bottle of Lea & Perrins Worcestershire sauce was found preserved by the volcanic dust. It is on display in the museum there (p. 34).

Plate 51 shows three ads published in 1871 by Lea & Perrins in three Australian newspapers (the *Coulburn Herald*, *Bathurst Free Press*, and the *Manaro Mercury*) to caution people against purchasing fraudulent imitations of their “celebrated Worcestershire Sauce.” The two agents in Australia were Montefiore, Joseph & Co. (Sydney), and John Lee & Co. (Maitland). The sauce was exported by Lea & Perrins (Worcester) and by Crosse and Blackwell (London); it was sold by “Grocers and Oilmen universally.”

Plate 54 states: “Lea & Perrins have been exhibiting



since the historic Chicago Exhibition [in Illinois] in 1876, which celebrated the first hundred years of American Independence. The vase and bottled where were displayed there, are on permanent exhibition in the entrance hall of the offices of Lea & Perrins Inc., New York.” Plate 55 shows the products of HP Sauce Ltd. and Lea & Perrins Ltd. on display at the British Industries Fair of 1949. Pages 42-43 discuss problems faced by Lea & Perrins in Worcester during World War II. “An army medical unit had taken over their factory, leaving only a small, sealed section in which to continue the highly secret process of making the sauce... One sniff was enough; there is no mistaking a cask of five-year-old anchovies.” Lea & Perrins soon moved its bottling machinery from Worcester to Aston Cross. Plate 59 shows a empty glass bottle of Lea & Perrins sauce from 1880.

Plate 60 shows seven old Lea & Perrins Worcestershire sauce bottles. The oldest two, made of green glass with glass stoppers, were both filled in 1866. Two others are from about 1870. The earliest one with a label is from 1920. Plate 83 shows old bottles (with labels) of Worcestershire Sauce made by other manufacturers in Kobe, Japan; Cardiff, Wales; Hamburg-Altona [Germany; Altona became part of Hamburg in 1937]; the United Kingdom, and Portugal. Address: Warwickshire, England.

319. Woollen, Anthony. 1976. The secret of solnuts. [A nut analogue from soybeans made by Solnuts BV of Tilburg]. *Food Manufacture (London)* 54(1):55, 57. Jan. [1 ref]

• **Summary:** This “nut analogue from soybeans has tremendous possibilities in bakery and confectionery products.” The plant, very similar to one operating in the USA, was built in Tilburg under the supervision of Mr. Jim Becker and was originally scheduled to come on stream in August 1977. But initial teething troubles delayed the start and it was not until November 1978 that the plant began to produce Solnuts of the quantity required. Now, after an investment approaching £1M, the plant is producing about 1,600 tons/year. When designed capacity is eventually fully utilised, production is expected to be between 8,000 and 10,000 tons/year.

Jim Becker, an American, developed/invented a method of preparing and roasting soya beans. The company director is Mr. F. van der Marel. Several important contracts have been obtained to supply major food manufacturers in Holland, Germany, Switzerland, Austria, Spain, Greece and the UK, including in the last-named Kelloggs and Granose Foods. Holland and Germany are where the company’s main markets are at present. The final composition of the product is: fat 19%, protein 47.4%; carbohydrate 3.7%, fibre 3.6%, ash 3.6%, and moisture 2%. The big advantage of Solnuts over any other soya product is their texture. The first Solnuts became available in the course of 1978.

320. Osaka, Motomi; Hashimoto, Yukio. Assignors to

Laboratorios Del Dr. Esteve SA (Barcelona, Spain). 1976. Bean-odor-free soy bean product and its production. *U.S. Patent* 3,937,843. Feb. 10. 6 p. Application filed 4 Dec. 1973. [3 ref]

• **Summary:** “A process for preparing a bean odor-free soy bean product which comprises subjecting a soy milk to lactic fermentation in the presence of a lactic acid bacterium as a starter and subjecting the resultant fermented soy milk to distillation under reduced pressure, the soy bean product being suitable for the manufacture of a nutritional drink or beverage product free from a bean odor due to its high protein concentration and excellent palatability.” Address: 1. Osaka, Japan; 2. Izumiotsu, Japan.

321. Shurtleff, William; Aoyagi, Akiko. 1976. The book of miso. Hayama-shi, Kanagawa-ken, Japan, Soquel, California, and Brookline, Massachusetts: Autumn Press. 256 p. Sept. Illust. by Akiko Aoyagi. Index. 28 cm. Revised ed. 1981. New York, NY: Ballantine Books, 620 p. [60 ref]

• **Summary:** Contents: What is miso? Preface. Acknowledgments. Part I. Miso: Savory, High Protein Seasoning. 1. Soybeans, protein and the world food crisis. 2. Miso as a food. 3. The miracle of fermentation. 4. The varieties of miso: Introduction. An overview: Natural vs. quick miso, salty vs. sweet miso, red vs. white miso, chunky miso and koji miso vs. smooth miso, expensive vs. inexpensive miso, miso from the provinces.

Regular Miso: Rice miso (red / aka, light-yellow / shinshu, mellow red / amakuchi akamiso, mellow beige / amakuchi tanshoku, mellow white / shiro koji, sweet red / edo or edo ama-miso, sweet white / Kyoto shiro miso), barley miso (karakuchi mugi, mellow barley / amakuchi mugi), soybean miso / mame miso (miso-dama, Hatcho miso, soybean miso / mame miso, tamari miso). Special Miso: Finger lickin’ miso / Namemiso (Kinzanji miso, moromi miso, hishio, namémiso, natto miso, goto miso), sweet simmered miso / nerimiso. Modern Miso: Akadashi miso, dehydrated or freeze-dried miso, low-salt / high-protein miso.

Part II. Cooking with Miso (400 recipes). 5. Getting started. 6. Recipes from East and West: Miso toppings, miso in dips & hors d’oeuvres, miso in spreads & sandwiches, miso dressings with salads, miso in soups & stews, miso in sauces, miso with grains, beans & tofu, miso in baked dishes, miso sautéed & simmered with vegetables, miso in grilled dishes, miso in deep-fried dishes, miso & eggs, miso in desserts, miso pickles, koji cookery.

Part III. The Preparation of Miso. 7. Making miso at home and in communities. 8. Japanese farmhouse miso (incl. miso-dama). 9. The traditional miso shop. 10. The modern miso factory.

Appendixes: A. A brief history of chiang, miso, and shoyu: Introduction, Chinese chiang, early Japan, the Nara Period (710 A.D. to 784 A.D.), the Heian Period (794 A.D. to

1160 A.D.), the Kamakura Period (1185 A.D. to 1333 A.D.), the Muromachi Period (1336 A.D. to 1568 A.D.), tamari—the forerunner of shoyu (Priest Kakushin returns to Japan from China, where he learned how to make Kinzanji miso, settles at Kokoku-ji temple near town of Yuasa, discovers tamari), miso during the Edo Period (1603 A.D. to 1867 A.D.), the development of shoyu the Meiji and Pre-war Periods (1867 A.D. to 1941 A.D.), modern times, transmission to the West.

B. The varieties of Chinese chuang, Korean jang and Indonesian Tao-tjo. C. The chemistry and microbiology of miso fermentation: Introduction, koji starter molds, making koji starter, making koji—the first fermentation, cooking the soybeans, preparing the miso—the second fermentation, the finished miso. D. People and institutions connected with miso: In Japan—Miso research scholars and institutes, exporters of natural miso and koji to the West, traditional or semi-traditional shops making natural miso, Japan's ten largest miso factories (gives the production in tons/year for several companies), other well-known miso makers. Makers of koji starter and koji, Japanese restaurants specializing in miso cuisine. North America—Miso research scholars and institutes, commercial miso makers, companies importing Japanese miso, koji, or koji starter, individuals interested in miso. Europe (Belgium, England, France, Germany, Holland, Italy, Portugal) and Latin America (Brazil, Costa Rica, Mexico, Venezuela). E. Miso additives. F. Miso with seafoods, chicken, and meat. G. Table of equivalents. H. So you want to study miso in Japan? Bibliography. Glossary. About the authors (autobiographical).

Note 1. This is the earliest English-language book seen (July 2000) that has the word “miso” in the title. It is also the first book in the Western world written entirely on the subject of miso.

Note 2. This is the earliest document seen (July 2000) that mentions “Hatcho miso” (spelled that way—which is now the correct romanization). Hatcho is a Japanese place name meaning (approximately) “Eighth Street.”

Note 3. This is the earliest document seen (Sept. 2002) that contains industry and market statistics on individual miso companies.

Note 4. This is the earliest document seen (March 2009) that gives illustrated details about commercial miso production.

Note 5. An advertisement on the inside rear cover of the paperback edition of this book announced that the authors were preparing *The Book of Sea Vegetables*. That book was half researched and written but never published because of concern with pollutants in sea vegetables, and increased interest in soyfoods. Address: 790 Los Palos Dr., Lafayette, California 94549.

322. Whigham, D.K. 1976. International soybean variety experiment: Second report of results. *INTSOY Series* No. 11. vi + 223 p. Dec. (College of Agric., Univ. of Illinois at

Urbana-Champaign).

• **Summary:** Contents: Foreword. Introduction. Materials and methods. Results and discussion. Summary. Information and summary tables. Agronomic data from 1974 trials is given for the following countries and sites: Africa: Angola (Nova Lisboa), Cameroon (Wum), Egypt (Bahteem, Seds), Ethiopia (Awassa, Bako, Debre Zeit, Jimma), Ghana (Kwadaso, Legon), Ivory Coast (Abidjan, Dekokaka, N'Dakro), Nigeria (Kadawa), Rhodesia (Salisbury), Sierra Leone (Njala), Swaziland (Malkerns), Zambia (Kitwe).

Asia: Afghanistan (Baghlan), India (Pantnagar), Indonesia (Muneng), Malaysia (Serdang), Nepal (Khumaltar), Pakistan (Parachinar, Sarai Naurang, Swat, Tandojam, Tarnab), Philippines (La Carlota, Los Baños), Sri Lanka (Alutharama, Angunukulapalessa, Bandirippuwa, Gannoruwa, Kilinochchi, Maha Illuppallama, Maskeliya, Puttalam, Ratmalagara, Thirunelvely), Taiwan (Shanhua, S. Shanmugasundaram [AVRDC]), Thailand (Chiang Mai, Khon Kaen, Maejo).

Europe: Spain (Madrid).

Mesoamerica: Costa Rica (Las Juntas, Taboga), Dominican Republic (Santiago), El Salvador (Santa Cruz Porrrillo), Mexico (Apatzingan, Uxmal), Panama (Tocumen), Puerto Rico (Isabela, Lajas, Mayaguez), Trinidad and Tobago (Port of Spain).

Middle East: Iran (Karaj), Israel (Bet Dagan), Jordan (Wadi Dhuleil), Lebanon (Beqa'a), Saudi Arabia (Riyadh, Wadi Jizan).

South America: Bolivia (Abapo-Izozog, Palometillas, Santa Cruz, Villa Montes), Colombia (Ibague, Motilonia), Ecuador (Boliche, Pichilingue, Portoviejo), Guyana (Ebini, Mon Repos), Venezuela (Maracay).

Note: This is the second earliest document seen (Dec. 2007) that clearly refers to the cultivation of soybeans in Lebanon, and the first that refers to variety trials. This document contains the earliest clear date seen for the cultivation of soybeans in Lebanon (26 April 1974). Seven varieties were tested at Beqa'a by cooperator S. Abu-Shakra. Bonus gave the highest yield, 771 kg/ha.

This document contains an early date for cultural trials of soybeans in Panama (5 Sept. 1974). On 5 Sept. 1974, under the direction of Juan Jose Franco P., fifteen varieties of soybeans were planted at Tocumen. Bonus gave the highest yield, 3,678 kg/ha.

This document also contains the second earliest date seen for soybeans in Swaziland, or the cultivation of soybeans in Swaziland (25 Nov. 1974). Fifteen varieties were tested at Malkerns. Bragg gave the highest yield, 3,126 kg/ha.

The source of all these soybeans was INTSOY (at the University of Illinois, USA) for ISVEX trials. Address: College of Agriculture, Univ. of Illinois, Urbana-Champaign.

323. Schultz, John M.; Mason, William P. 1976. Soybeans:

Brazil as a competitive force. MBA thesis, Harvard Business School. vii+ 151 leaves. 28 cm. [49 ref]

• **Summary:** This is the best report seen to date on the soybean industry in Brazil. Contents: Preface. Indexes of tables and figures. Introduction. 1. World food demand. 2. Fats, oil & meals. 3. Brazilian production. 4. Comparative cost of production. 5. Development of agricultural inputs and infrastructure. 6. Brazilian commercialization of soybeans and its products. 7. Government's role in the Brazilian soybean system. 8. Brazilian soybean supply-demand model. Summary & Conclusions. Appendices: Conversion rates, Glossary of Brazilian organizations. Bibliography.

Tables: (1) Change in world population growth. (2) World population, 2000: Less developed regions, developed regions, total—for high, medium, and low projections. (3) Where population is growing fastest (percentage growth from 1950 to 1970): Latin America 75% (doubling time 22 years), Africa 59%, Asia 52% (DT 24 years), Oceania 46%, North America 37%, Russia 35%, Europe 18%. (4) Percent of world population by regions: In 1973 developing world has 75% of total, developed world has 25%. In 2000 those figures are expected to change to 80% and 20%. (5) Per capita demand for related commodity groups by areas worldwide (kg per year): (6) Net demand for fats and oils by region: 1970, 1985, 2000. (7) Index of world net food demand by commodity: 1970, 1985, and 2000. (8) Index numbers of total and per caput food production. (9) Joint product derivation for 8 oilseeds (average percentage weight of oil and meal; soybean is 80 to 18). (10) World production of fats & oils, market shares for edible vegetable oil, palm oils, industrial oils, animal fats, marine oils (1965, 1970, 1975). (11) Gross fats & oil exports, for 13 oils and fats, annually from 1971/72 to 1974/75, with projections to 1980/81 at which time—#1 Palm oil 3.1 million metric tons (mmt). #2. Soybean oil 1.02 mmt. Sunflower oil 1.00 mmt. Butter 0.75 mmt. (12) World production of fats & oils, for 14 oils and fats. (13) Exports of fats & oils (vegetable & animal), Malaysia and Brazil. (14) U.S.A. food oils and fats domestic use, 1960, 1974, & 1985 projections. In 1960 the diet was 58% vegetable fats and 42% animal fats. In 1985 the projected diet was 90% vegetable fats and 10% animal fats. (15) Soybean yields for selected regions (1971-75): World average, USA, Brazil, China. (16) World cropland area by commodity, 1970. All cereals have 73.5% of the total, vs. 10.8% for oilseeds and 6.3% for pulses and nuts. (17) World soybean production (1970/71 to 1975/76): USA, Brazil, China, Others. "The U.S. embargo in 1973 gave Brazilian exports a boost as importing countries placed greater emphasis on double sourcing." (18) Cottonseed oil production and export for U.S. and world, 1970-1975. (19) Sunflower seed oil production, 1970-1975. (20) Palm oil: Production and exports in major producer-exporter countries and the world annual 1965-75 with projections for 1976, 1980 and 1985. Countries are West Malaysia, Sabah (a

Malaysian state located on the northeast tip of the island of Borneo), Indonesia, Ivory Coast, Zaire. (21) Value of four oil crops per hectare for selected countries. Crops: Oil palms, soybeans, sunflower, peanuts. Countries: West Malaysia, USA, USSR, Nigeria. Oil palms have by far the greatest oil yield and value per hectare. (22) Palm oil: Production in specified countries (Western hemisphere 3.5%, Africa 39.1%, Asia 57.4%): Forecast for 1975 and percentages. (23) Palm oil—local consumption vs. exports (1974): For West Malaysia (exports 96% of production), East Malaysia (92%), Indonesia (92%), Ivory Coast (60%), Zaire, Western Hemisphere. (24) Palm kernel oil—production and exports 1971-75. (25) Coconut oil: Production & export. (26) Lard production & export: Selected years. (27) Lard rendered per hog: USA. Yield of lard per hog in USA decreased from 13 kg in 1963 to 6.7 kg in 1974—as demand for lard decreased. (28) World meal production and gross exports by commodity: Selected years 1955, 1967, 1974. Soybean meal is always the leader by far, with cottonseed meal 2nd. (29) Present and projected world consumption of animal products: Poultry, pork, and beef. Poultry and hogs are the main consumers of soybean meal. Cattle consume mostly pasture and grass—as nature designed. (30) Protein meal: World production exports, share of market by commodity, 1955, 1970/71, 1974/75. Soybean meal is by far the leader, followed by cottonseed meal. A U.S. moratorium on soybean exports in 1973 and 1975 enabled Brazil to enter major markets as a source of dependable supply. (31) Soybean meal and seed, production and exports (U.S., Brazil, and world) (meal equivalents). (32) Peruvian fishmeal, production and exports. (33) Peruvian fishmeal exports, soybean equivalents. (34) Brazilian production by states. (35) Changes in acreage planted. (36) Land area of Rio Grande do Sul. (37) Parana production by regions. (38) Cultivated land in Sao Paulo. (39) Land area of central-west states. (40) Weighted average comparison of costs of production. (41) Comparison of fertilizer and lime costs (Brazil and the U.S.). (42) Comparison of machinery cost. (43) Brazilian labor rates. (44) Comparison of regional costs of production. (45) Seed soybean variety usage by state. (46) Fertilizer demand. (47) National fertilizer program. (48) Chemical demand. (49) Land costs by state. (50) 1974 storage capacity by states. (51) Comparison of transportation systems. (52) Capacities at main ports. (53) Comparison of average export profits. (54) 1975 crushing capacity by state. (55) Major crushing firms. (56) Exports. (57) Major importers of Brazilian soybeans and soybean products. (58) Exporter percentages of soybeans. (59) Brazilian ICM tax rates, Jan. 1, 1976. (60) Historical supply-demand relationships. (61) Projection of supply-demand relationships.

Figures: (1) World population growth (in millions) 1900-2000. (2) Soybeans and their products. (3) Relationship between beans and end products. (4) European Community: Apparent consumption of fats and oils, 1965-1975. (5)



Oilseeds. (6) Price comparison, coconut, palm, and soybean oil, average monthly cash prices. (7) Per capita consumption of poultry meat. (8) Peruvian anchovy catch, 1960-1975. (9) Map of Brazil. (10) Comparison of average prices for wheat and soybeans at the farm level. (11) Comparison of wheat-soybean acreage. (12) Index changes of soybean production, acreage, and yields. (13) Map of Rio Grande do Sul. (14) Map of Parana. (15) Map of Sao Paulo. (16) Map of Santa Catarina. (17) Map of Central-west states. (18) Comparison of rainfall during growing season. (19) Industry structure. (20) Map of climatic conditions. (21) Map of soil conditions. (22) Brazilian railroad systems. (23) Export corridors program. (24) Comparison of Brazilians-U.S. prices at the farm. (25) Map of crushing facilities. (26) Per capita Brazilian vegetable oil demand. (27) Per capita Brazilian meat consumption. (28) Brazil's major agricultural exports. (29) Comparison of market share in exports of soybeans. (30) Schematic supply-demand relationships. (31) 1976 planting estimates (Based on wheat & soybean prices). Address: Harvard Business School, Cambridge, Massachusetts.

324. Muso Shokuhin. 1976? Distributors of Muso foods in Canada, South America, Europe, and Australia (Leaflet). Osaka, Japan. 1 p. Undated.

• **Summary:** The name, address, and phone number of each company is given. Canada: Lifestream Natural Food, Inc. (British Columbia). Manna Foods, Inc. (Ontario).

South America: Zentro Macrobiotico de Venezuela.

Europe: Societe Traplun (France). Unimave S.C.A.R.L. (Portugal). Urtekram (Denmark). V.Z.W. Voedselcollectief (Belgium). Manna (Holland). Centro Dietetico Macrobiotico Italiano (Italy). Centro Macrobiotico Italiano (Italy). Harmony Foods (England). Kameo (France). P.V.B.A. Lima (Belgium). Moder Jord & Söner (Sweden). Reformhaus Rahlstedt (West Germany). Schwarzbrot (West Germany). Dr. Naturopata SER (Spain). Eduardo Galamba De Sa Pires (Portugal).

Australia: True Health Aides Pty. Ltd. (Sydney).

Address: 1-43 Otedori, Higashi-ku, Osaka, Japan. Phone: (06) 945-0511.

325. Dutton, Herbert J. 1977. Report of trip to attend panel meeting of the United Nations Industrial Development Organization, Vienna, Austria, Aug, 9-11, 1977. Peoria, Illinois. 7 p. Typed, with signature on letterhead.

• **Summary:** Contents: Purpose. Summary. Draft agenda. Participants (directory of 15 people representing various countries and organizations). List of UNIDO (United Nations Industrial Development Organization) participants to the technical panel meeting on vegetable oils and fats. Dutton's evaluation of the document (very good).

"Purpose: To participate in a panel meeting of high-level technical experts, to evaluate the draft of the worldwide

study on vegetable fats and oils, to exchange views at the expert level in order to contribute to the finalization of the study, and to provide basic background documentation for the consultation meeting to be held December 12-16, 1977, in Madrid, Spain.

"Summary: Designated by the American Soybean Association (ASA) to represent the U.S. oilseed industry as Technical Expert..." Address: Chief, Oilseed Crops Lab., Northern Regional Research Center, Peoria, Illinois 61604.

326. *Soybean Digest*. 1977. Ralph Jackson [in memoriam]. Oct. p. 14.

• **Summary:** A portrait photo that fills the top half of the page shows Jackson seated in an executive high-back leather chair talking on the phone.

"Ralph Jackson, executive vice president of the American Soybean Association, died August 30 in Lawton, Oklahoma. Ralph joined the association in 1970. At that time there were only 5 state checkoff programs allowing farmers to invest ½ cent per bushel in market development programs. Under his leadership, the association helped organize checkoff programs in 13 other states bringing the total to 18. There were only 14,000 members when Jackson became executive vice president. Since then, 5 states have joined and membership has risen to over 20,000. Under his guidance, ASA opened offices in Brussels, Belgium; Mexico City, Mexico; Vienna, Austria; and Madrid, Spain. Funding for market development programs abroad increased over 500%. Businessmen and government officials in over 60 countries joined forces with ASA to help provide their people with a better diet at a lower cost. All this has created a greater demand for American soybeans around the world. Soybean farmers will long be indebted to Ralph Jackson for his service to America's number one commodity. His expertise and enthusiasm will long be missed."

Note: On 1 Oct. 1976 Jackson was replaced as executive vice president of ASA—about a year before he died.

327. George, Susan. 1977. How the other half dies: The real reasons for world hunger. Montclair, New Jersey: Allanheld, Osmun & Co. xxix + 308 p. Index. 21 cm. [500+\* ref]

• **Summary:** Soybeans are discussed in several places: Between 1972 and 1973 U.S. soybean production increased by 25% (p. 9).

Chapter 4, titled "Technology: Now who pays to do what to whom?" shows that no new technology, not even a new crop is neutral in the effects it has on different classes of people. A report on soybeans in Brazil commissioned by the French Government Center for External Trade showed that they are becoming an increasingly important crop there. Since Brazil can produce and sell its crop between the two U.S. soybean harvests, the government's official agricultural policy encourages Brazilian farmers to grow more soybeans since they are a profitable export crop. The price of soybeans

is attractive, so farmers have abandoned corn, a traditional crop, as well as wheat (to a lesser extent) because soybeans demand less fertilizer. Since soybean production is easily mechanized, fewer Brazilians need be employed. Soybeans are usually crushed to make oil and meal. This complex processing technology is being taken over by the world's most competent processors—large multinational agribusiness firms, such as Cargill and Bunge. Small Brazilian processors are going bankrupt. Since Brazil's infrastructure for transporting and loading the soybeans is substandard, the World Bank has been kind enough to contribute half the price of new private export corridors to the seaports, which the Brazilian government has kindly declared necessary for the multinationals. No doubt the Brazilian soybean industry will be profitable for multinational agribusiness, but what will be the consequences for ordinary Brazilians. From 1970 to 1972, the price of corn, a traditional staple food and feed, has risen 60%, while the price of chicken has gone up 33%. Soybeans have drastically decreased the amount of land previously used for growing the *feijao* or black bean—another staple crop and key human protein source; during this period its price jumped by 275%. Rice production also suffered from the soybean competition. All of these developments hurt average Brazilians, and especially the poor.

In addition, real estate prices in areas best suited to soybean production have risen dramatically; one hectare in Rio Grande do Sul, which sold for 1,500 cruzeiros in 1972, sold for less than 10,000 cruzeiros less than a year later. Thus, smaller farmers with less mechanization are losing out to those who can afford to buy more than and agricultural equipment. Soybean production in Brazil directly counteracts the efforts of the Brazilian government to limit inflation (p. 67-69).

Chapter 6, titled "Planned scarcity," notes that in the USA, one acre in 6.5 is now planted to soybeans. Europe is only 2% self-sufficient in plant protein production. After World War II, Europe introduced American hybrid corn to replace local varieties; though the yield was higher, the protein content was lower. Thus a new protein source had to be found for feeding livestock, and U.S. soybean meal seemed to be the most rational and inexpensive solution. Export of soybean meal from the U.S. to Europe jumped from only 47,000 tons in 1949 to nearly 5 million tons in 1972-73. Major U.S. processors set up crushing mills in Europe. In short, the entire post-war European livestock industry has been developed on the basis of extensive use of low-price soybean meal. The U.S. established a "near-monopoly position for supply not only of Europe but of Japan and other nations."

Discusses the 1973 U.S. soybean export embargo, which began in June and sent prices soaring to \$12 a bushel, from \$2. The embargo was removed 3 months later and at year's end it became clear that the scare over shortages was unwarranted. The Food for Peace program introduced

soya oil into countries like Spain and Tunisia that had never before tasted anything but their own olive oil. Even the butter-rich Netherlands now consumes more imported soy margarine than butter. "Far be it from me to suggest collusion I can't prove, but it is at least evident who profits from higher prices and who suffers. A futures market in soya meal was opened in London in April 1975 as a measure that might check price fluctuations." Yet the key fact is that European countries do not produce soybeans, nor any alternative protein crop.

Discusses the new effort to extend the use of soya beyond feeding animals by promoting TVP, and the international conference held at Munich, Germany, in Nov. 1973. Earl Butz (U.S. Secretary of Agriculture) led the American delegation; Hubert Humphrey stated: "Food is a new form of power. Food is wealth. Food is an extra dimension in our [U.S.] diplomacy." "Americans presented 24 out of the 38 papers (including 13 by agribusiness representatives and 10 by USDA people). Only one was by a nutritionist. "One sees absolutely no alternative to continued US MNC (multinational corporation) control of the world plant-protein production and prices." "The only rational way to offset price and foodstock manipulation by the giant traders would be to have grain stocks held in government hands, to be released or held back as the market situation demanded." The grain traders are "frantically opposed to any reserve system..." (p. 122-25).

Chapter 8, titled "Food aid?... Or weapon," discusses: Importance of feedgrains exports, Soybean Council of America, American Soybean Association, PL 480, promotion of soybean exports to Spain, Iran, and Korea, Ralston Purina and Cargill, Food for Peace counterpart funds used to finance research in recipient countries, "common defense" military expenditures (p. 172, 176).

Chapter 11, titled "What can 'they' do?" discusses alternative food sources, single-cell protein (SCP), America's energy-devouring food-production system which could exhaust U.S. fossil fuel reserves within 25 years, research by DuPont showing that when soybeans are experimentally flooded by carbon dioxide, they quadruple yields and fix more nitrogen (p. 239-40). Address: A Smith College graduate now studying at the Sorbonne. Fellow of the Transnational Inst.

328. *Foreign Agriculture*. 1978. Spain's edible oil marketing regulation may be opposed. Feb. 13. p. 9-10.

• **Summary:** The regulation further restricts consumption of seed oils from crushed oilseeds (mainly soybeans), and imposes a fee, possibly an increase in the import duties, on soybean oil imports. The U.S. supplies most of Spain's soybeans. The ruling will set the soybean oil consumption level at 10,000 tonnes/month. It will make mandatory the bottling of all edible oil for the retail trade, a move to prevent fraudulent blending of edible oils, particularly olive

oil. Spain produces about 320,000 tons of soybean oil from nearly 2 million tons of imported soybeans. Address: U.S. Agricultural Attaché, Madrid.

329. Piason, Frank J. 1978. Three nations lead Mideast / North African buying of soy products. *Foreign Agriculture*. April 10. p. 6-7, 10-11.

• **Summary:** “Three countries—Iran, Egypt, and Morocco—took more than 80% of the record \$100.6 million worth of U.S. soybean and product exports to the Middle East and North Africa last year. But rapidly growing incomes and populations, alongside burgeoning poultry and livestock industries, suggest that there is a reservoir of untapped buying power in many of the 16 other nations of the region.

“Indicative of the potential was the opening for the first time last year of a sizable soybean meal market in Libya; the first sales in several years of soybean meal to Jordan, and partial recovery in shipments to Lebanon following reductions incurred as a result of that country’s civil war.

“Iran: U.S. Exports of soybeans and products to this largest market in this region, totaled \$44.3 million in 1977.” Soybean oil was the most important export, followed by soybean meal (\$12.3 million), then soybeans (\$11,000). The country still must import 75-80% of its vegetable oil needs. The country has 10 large vegetable oil refining plants. “Vegetable oil consumption in the form of hardened vanaspati ghee is expanding by about 10% a year...

“Egypt: With a large and growing population—about 38 million—Egypt has one of the brightest long-term market potentials in the region. Foreign currency shortages and vast development needs make it a prime candidate for food aid, including soybeans and products. Last year, U.S. soybeans moved to Egypt for the first time since the 1950’s reflecting the coming on stream in early summer of the first new crushing plant in the free trade zone of Alexandria. U.S. soybean oil exports to Egypt were 4,690 tons in 1977, rather small in proportion to those from Brazil. All told, Egypt needs about 320,000 tons of vegetable oil a year and must import around 75% of this.

“Morocco: A steadily growing U.S. market, Morocco in 1977 took 38,509 tons of U.S. soybeans to rank as second largest soybean market in the region. The re-opening of the large Government SIGO oil mill at Kenitra in 1976, with a 120,000-ton annual capacity, cleared the way for more imports. Morocco also was the second largest U.S. soybean oil market in the region in 1977, with purchases of 5,355 tons. About two-thirds of the estimated 175,000 tons of oil imported in 1977 was in the form of soybean oil. Much of this comes from Spain, which exports oil crushed from imported soybeans (in great part from the United States)... Olive oil is by far the most important domestic oil in Morocco.

“Jordan: In 1977 the United States shipped Jordan 2,135 tons of soybean meal, the first such sale in several years,

and 217 tons of soybean oil. Prospects for further increases are brightest for soybean meal, reflecting rapid expansion in private-sector poultry production...

“Syria: No U.S. soybeans and products moved to Syria last year, although 5,000 tons of U.S. soybean oil under Public Law 480 Title I, and a small amount of soybeans were shipped in 1976...

“Iraq: The United States sold 10,000 tons of soybean meal to Iraq in 1977, making this the third largest soybean customer in the region. Further growth is likely as a result of heavy Government investment in poultry production and oilseed crushing plants...

“Lebanon: Before its civil war in 1975, Lebanon was the third largest outlet in the region for U.S. soybeans and products, taking about 22,000 tons of U.S. soybeans and 11,000 of U.S. soybean meal that year...

“Tunisia: So far, the United States has shipped to Tunisia only soybean oil, sales of which plummeted from 10,366 tons in 1975 to 179 in 1976 as a result of a ban on all vegetable oil imports in early 1976. This ban—intended to reduce large domestic supplies of olive oil—was relaxed in 1977, with exports recovering to 2,523 tons... Tunisia has no major crushing facilities for oilseeds...

“Libya: This market took 4,996 tons of U.S. soybean meal in 1977, its first such import from the United States. There is considerable potential for future exports of soybean meal, given Libya’s concentration on expanding poultry output and its shift from exclusive reliance on imports of complete poultry rations...

“Algeria: U.S. sales to Algeria in 1977 totaled 4,627 tons of soybean meal and 510 of soybean oil...

“Saudi Arabia: U.S. exports of soybean meal to Saudi Arabia have increased steadily, reaching 8,548 tons in 1977. Further growth will be determined by the pace of expansion in production of Saudi poultry and livestock (especially sheep). Efforts are being made to boost production of eggs and poultry—the latter from the current level of about 2 million birds... Currently, about 110,000 tons of meat are consumed domestically each year, with imports accounting for about half the total. Moreover, meat consumption is expected to increase by 5-6 percent annually from the present 16 kilograms per capital.

“Sudan: Total U.S. exports of soybeans and products to Sudan came to only \$52,000 in 1977. However, the future holds considerable promise, since Sudan has the greatest agricultural potential of any country in the Middle East and North Africa. Even now, Sudan is the largest oilseed producer in the region—producing cottonseed, peanuts, and sesame...

“Others: Among the seven remaining countries are the OPEC members, Kuwait, Oman, Qatar, United Arab Emirates, and Bahrain. All of these have per capita incomes well over the \$1,018 mean average in the Middle East and North Africa, but also have fewer than 1 million inhabitants.



Their high living standards make them potential markets for consumer-ready soybean oil and soy protein foods. Kuwait, the largest and most wealthy of these, has been a past customer for U.S. soybean meal, and is planning further development of its poultry industry. Yemen has a relatively strong agriculture but like its neighbor, South Yemen, has low per capita income and at present limited market potential.”

A map shows U.S. exports of soybeans and products in 1977 (estimates) to each of the above nations in the Middle East and North Africa. Address: U.S. Agricultural Attaché, Rabat, Morocco.

330. Belnap, David F. 1978. Soybean is Brazilian farmer's golden egg. *Los Angeles Times*. Aug. 20. Section VII. p. 1.  
 • **Summary:** Many sleepy little towns in southern Brazil have been transformed by soybean agriculture into modern rural centers. “The word spectacular is inadequate to describe the growth of soybean culture in Brazil during the past two decades. Average annual soybean production from 1961 through 1965 was 353,000 metric tons, and most of it was grown in the southernmost state of Rio Grande do Sul, where soybeans were planted for the first time in 1947. The take-off began in 1968, with an 85% increase in production over the 1961-65 average. Every year afterward, through 1977, soybean output climbed at an annual average rate of 40%, finally reaching 12.2 million metric tons from 17.3 million planted acres last year... (Soybean planting in Brazil is done in September through December, during the Southern Hemisphere's spring and early summer, and harvest is in March and April—late summer and early fall.)

“Two factors enhanced Brazil's position in soybean trade:

“-The United States exports only about half of its crop. The rest is consumed domestically... Brazil exports two thirds of its total output of soybeans and soy products.

“Brazil converts a relatively higher proportion of its soybeans into oil and meal than does the United States. In an average year, the United States stays far ahead in exporting the raw beans, but Brazil sells abroad more meal than the United States (5.5 million metric tons, compared with 4.5 million) and nearly as much oil (500,000 metric tons compared with 720,000)...

“Rio Grande do Sul continues to be the most productive soybean state, but Parana, once Brazil's chief coffee region, is closing in fast...

“Curiously, a government-backed drive to make the nation self-sufficient in wheat launched the soybean boom. Helped by official subsidies, farmers began to plant more wheat. But wheat is grown in the winter here, and wheat land used to lie fallow in summer, when rains made raising wheat impractical. Soybeans were soon being planted to take up the summer slack, and not long afterward, the tail began to wag the dog. Wheat today is a secondary crop...

“The soy boom was helped by another official project begun in 1968: a campaign to root out about 1.5 billion low-producing old trees on southern Brazil's coffee plantations. This freed millions of acres for field crops in Parana alone, and showed farmers the advantages of modern, mechanized agriculture. Soybeans are harvested with the same combines used for wheat, while coffee beans, everywhere in the world, still must be gathered by hand...

“Soybeans now rival coffee as Brazil's main source of export income. In 1974 and 1975, soybeans even exceeded coffee in export value. Coffee, once responsible for 80% of all Brazil's export income, nowadays accounts for only about 20%.

“The main source of oil and fats for human consumption in Brazil used to be lard. Today it's soy oil...

“Soybean cultivation's most important social impact has been a tremendous growth of rural cooperatives. Small farms were traditional in Brazil, but the soybean boom introduced a whole new agricultural system, tied to mechanization. With it came expansion of the cooperative movement. Today an estimated three quarters of Brazil's nearly 400,000 soy farmers are members of cooperatives...

“Brazil's main overseas markets for its soybeans and soy products are the European economic community, Spain, Iran, India, Eastern Europe—including the Soviet Union—and China.”

A map of Brazil shows that the major soybean producing states are all located in the southern part of the country.

331. Whigham, D.K.; Judy, W.H. 1978. International soybean variety experiment: Third report of results, 1975. *INTSOY Series* No. 15. x + 369 p. Aug. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following regions and countries: Africa: Algeria, Burundi, Cameroon, Congo, Dahomey, Egypt, Ethiopia, Gambia, Ghana, Ivory Coast, Lesotho, Mali, Mauritius, Niger, Reunion, Rhodesia (Salisbury), Rwanda, Senegal, Sierra Leone, Swaziland, Tanzania, Togo, Upper Volta, Zambia.

Asia: Afghanistan, Bangladesh, India, Indonesia, Korea, Nepal, Pakistan, Philippines, Sri Lanka, Taiwan, Thailand.

Europe: Hungary, Italy, Spain, Yugoslavia.

Mesoamerica: Bahamas, Belize, Costa Rica, Honduras, Jamaica, Martinique, Nicaragua, Panama, Trinidad & Tobago.

Middle East: Iran, Israel, Jordan, Lebanon, Saudi Arabia.

North America: United States.

Oceania: Fiji, Tahiti.

South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Guyana, Peru, Venezuela.

Note 1. This is the earliest document seen (Aug. 2008) concerning soybeans in Niger, or the cultivation of soybeans in Niger. On 3 July 1975 fifteen soybean varieties were

planted at Maradi, Niger; two days later the same 15 varieties were planted at Gaya, Niger. The research was conducted under the auspices of the Director, Institut de Recherches Agronomiques Tropicales (IRAT), Station de Tarna, B.P. 6, Maradi, Niger. At Maradi, Forrest gave the highest yield, 3,501 kg/ha and nine varieties gave yields of over 3,000 kg/ha. At Gaya, Jupiter gave the highest yield, 1,925 kg/ha.

Note 2. This is the second earliest document seen (Jan. 2002) for the cultivation of soybeans in French Guiana (12 Dec. 1975). On 12 Dec. 1975, cooperators Mr. J. Larcher and Mr. P. Midras (Institut de Recherches Agronomiques Tropicales, Station de Cabassou, B.P. 60, 97301 Cayenne, French Guiana), planted fifteen varieties of soybeans at Cayenne. Jupiter gave the highest yield, 3,445 kg/ha.

Note 3. This is the 2nd earliest document seen (April 2005) concerning soybeans in French Polynesia (or Tahiti), or the cultivation of soybeans in French Polynesia. This document contains the 2nd earliest date seen for soybeans on French Polynesia, or the cultivation of soybeans on French Polynesia (3 Dec. 1975). Thirteen varieties were tested at Papeete (capital of French Polynesia on the island of Tahiti), under the direction of Mr. Jean-Louis Reboul and Mr. Robert Yau-Akui, *Service de l'Economie Rurale*, B.P. 100, Papeete, Tahiti, French Polynesia. Davis gave the highest yield, 4,902 kg/ha.

This is the earliest document seen (Jan. 2005) concerning soybeans in Niger, or the cultivation of soybeans in Niger. This document contains the earliest date seen for soybeans in Niger, or the cultivation of soybeans in Niger (3 July 1975). Fifteen varieties were tested at Maradi under the direction of IRAT, Station de Tarna, B.P. 6, Maradi, Niger. Forrest gave the highest yield, 3,501 kg/ha. On 5 July 1975, fifteen varieties were tested at Gaya; Jupiter gave the highest yield, 1,925 kg/ha.

This document also contains an early clear date seen for soybeans in Senegal, and the cultivation of soybeans in Senegal (9 July 1975; one of two documents). Fifteen varieties were tested at Sefa under the direction of Mr. Jean Durovray, C.N.R.A., Sefa, Senegal. Jupiter gave the highest yield, 2,025 kg/ha.

This is the earliest document seen (Jan. 2005) concerning soybeans in Martinique, or the cultivation of soybeans in Martinique. This document contains the earliest date seen for soybeans on Martinique, or the cultivation of soybeans on Martinique (10 April 1975). Fifteen varieties were tested at Fort de France, under the direction of Mr. Daly, IRAT, Le Lamentin, B.P. 427, Fort de France, Martinique. Improved Pelican gave the highest yield, 2,154 kg/ha.

This is the earliest reliable document seen (March 2006) concerning soybeans in Togo, or the cultivation of soybeans in Togo. This document contains the earliest solid date seen for soybeans in Togo or the cultivation of soybeans in Togo (2 May 1975). On May 2 fifteen varieties of soybeans were

planted at Davié in southern Togo under the direction of Mr. J. Marquette, Le Chef de la Mission, IRAT au Togo, B.P. 1163, Lome, Togo. Davis gave the best yield, 3,563 kg/ha. On May 7 fifteen varieties were grown at Amoutchou; Jupiter gave the best yield, 3,667 kg/ha. On July 8 eleven varieties were grown at Kitangbao; Jupiter gave the best yield, 3,292 kg/ha. The source of the soybeans in each country was INTSOY for ISVEX trials. Address: College of Agriculture, Univ. of Illinois, Urbana-Champaign.

332. Missiaen, Edmond. 1978. Government incentives spur increased Brazilian soybean product exports. *Foreign Agriculture*. Oct. 16. p. 7-9.

• **Summary:** Brazil's rapid surge soybean meal and oil exports in the past few years is largely the result of Government incentives that favor exports of processed products and of Brazil's spectacular expansion in soybean crushing capacity. Brazil's export earnings from soybeans and products were over \$2,100 million in 1977, more than double the amount earned in either 1973 or 1974. Most of this growth has been the result of increased shipments of soybean meal and oil. Brazil's exports of unprocessed soybeans reached their peak in the 1975/76 marketing year (April-March) when 3.5 million tons were exported. In the meantime, meal exports have increased from 1.4 million tons in 1973/74 to over 5 million tons in 1977/78, and oil exports increased from 80,000 tons to 560,000 tons. The Brazilian value-added tax (ICM) on exported soybeans is 13%, compared with 9.6% for soybean meal (rising to 11.1% on Nov. 1) and zero for soybean oil.

Until November 1977, the value-added tax on soybean meal was only 5%. Total annual soybean crushing capacity has increased from about 2 million tons in 1971 to around 12 million tons during the current season. About one-half of total soybean crushing capacity consists of plants with 1,000 tons/day or more of capacity. A little over half of Brazil's total soybean crushing capacity is owned by private Brazilian firms. Another one-third of capacity is controlled by multinational firms and the remainder is owned by Brazilian cooperatives. The growth in domestic demand for soybean products in Brazil has been even more spectacular than the growth in exports. In recent years, domestic requirements have absorbed about 65% of Brazil's soybean oil availabilities and 20% of meal supplies.

The Brazilian Government controls the export flow of soybeans and products through a system of quotas designed to assure adequate supplies for the rapidly growing domestic market. The Government often imposes price ceilings on meal and oil sold on this market. Over the past 2-3 years, the Government-controlled trading companies, Interbras and COBEC, have been handling a growing share of soybean, meal, and oil exports. Most of Brazil's soybean export trade, however, is done on straight commercial terms and is expected to remain that way. Western Europe is by far the

largest market area for Brazilian soybean and soybean meal exports.

The most important single-country markets for Brazilian soybeans are Spain, the USSR, and the Netherlands. The largest individual country markets for soybean meal are the Netherlands and West Germany. The greatest market for Brazilian soybean oil exports are India and Iran. In 1977, 63% of all soybeans and 55% of all meal and pellets arriving at ports were truck transported. Rail transport accounted for 26% of soybean shipments and 37% of meal and pellets arriving at Brazilian ports. The ports of Rio Grande and Porto Alegre are the only ones able to receive barge traffic.

Note: This is the earliest document seen (Aug. 2000) that mentions the term “value-added” in connection with a tax on soybeans and soybean products. Address: U.S. Agricultural Officer, Sao Paulo.

333. Judy, W.H.; Whigham, D.K. 1978. International soybean variety experiment: Fourth report of results, 1976. *INTSOY Series* No. 16. x + 401 p. Oct. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following regions and countries: Africa: Algeria, Benin, Botswana, Burundi, Cameroon, Central African Empire, Congo, Egypt, Ethiopia, Gabon, Ghana, Ivory Coast, Lesotho, Mali, Niger, Nigeria, Rhodesia, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Upper Volta, Zaire, Zambia.

Asia: Bangladesh, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand.

Europe: Hungary, Italy, Poland, Portugal, Spain, Yugoslavia.

Mesoamerica: Bahamas, Dominican Republic, Jamaica, Mexico, Nicaragua, Puerto Rico, Trinidad & Tobago.

Middle East: Iran, Iraq, Israel, Jordan, Saudi Arabia.

North America: United States.

Oceania: New Caledonia, New Hebrides, Tahiti, Hawaii.

South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay.

Note 1. This is the earliest document seen (Aug. 2009) concerning soybeans in Botswana, or the cultivation of soybeans in Botswana. This document contains the earliest date seen for soybeans in Botswana, or the cultivation of soybeans in Botswana (3 Nov. 1976). On 3 Nov. 1976, under the direction of Ms. Lynn A. Miller (Mahalapye Rural Training Center, Box 300, Mahalapye, Botswana), twelve varieties of soybeans were planted at Mahalapye. Ransom gave the best yield, 3,244 kg/ha. On 25 Nov. 1976 sixteen varieties were planted at Gaborone. Davis gave the best yield, 1,668 kg/ha.

Note 2. This is the second earliest document seen (April 2004) concerning soybeans in Gabon, or the cultivation of soybeans in Gabon—but the first that gives details. This document contains the earliest date seen for soybeans in

Gabon, or the cultivation of soybeans in Gabon (30 Sept. 1976). Eight varieties of soybeans were grown at Ntoun, under the direction of Mr. J. van Amerongen and Mr. G. Van de Plas (Project CIAM, B.P. 5, Ntoun, Gabon). Jupiter gave the best yield, 1,159 kg/ha.

Note 3. This is the earliest document seen (March 2010) concerning soybeans in New Hebrides [later renamed Vanuatu], or the cultivation of soybeans in New Hebrides. This document contains the earliest date seen for soybeans in New Hebrides, or the cultivation of soybeans in New Hebrides (25 June 1976). Sixteen varieties of soybeans were grown at Port Vila, under the direction of Mr. B.L. Weightman (Dep. of Agriculture, Tagabe Agricultural Station, Port Vila, New Hebrides). Calland gave the best yield, 2,581 kg/ha. Port Vila, on the island of Efate (Éfaté), is the capital of Vanuatu.

Note 4. This document also contains the earliest date seen (Jan. 2001) for ISVEX soybean trials in the Central African Empire / Republic, or the cultivation of ISVEX soybeans in the Central African Empire / Republic (28 June 1976). Thirteen varieties of soybeans were grown at Bossangoa. Davis gave the best yield, 1,780 kg/ha.

The source of the soybeans in each country was INTSOY for ISVEX trials. Address: College of Agriculture, Univ. of Illinois, Urbana-Champaign.

334. Pelaez, R.; Walker, D.M. 1979. Milk replacers for preruminant lambs: Limiting amino acids in two soybean protein isolates determined with a change-over design. *Australian J. of Agricultural Research* 30(1):125-34. Jan. [15 ref]

• **Summary:** Methionine was the first limiting amino acid; Lysine and threonine were second limiting. The mean digestibility coefficient of nitrogen in isolated soy protein B (ISP-B) was 0.842, and the diets containing it were readily accepted by lambs. Address: 1. Departamento de Alimentacion, Facultad de Veterinaria de Leon, Leon, Spain; 2. Dep. of Animal Husbandry, Univ. of Sydney, NSW 2006, Australia.

335. American Soybean Association. 1979. American soybean farmers are giving the world an oil change (Ad). *Soybean Digest*. Feb. p. 34.

• **Summary:** This full-page ad shows many 55-gallon drums labeled “U.S. soy oil.” In the USA, “soy oil accounts for 83 percent of all vegetable oil consumed. And around the world, progress is being made to break down centuries-old taste preferences. American soy oil is beginning to replace rapeseed oil in Germany, olive oil in Spain and Italy, and peanut oil in France. Soy oil is the most significant economic contributor to our soybean profits. More than 40 percent of the total value of a bushel of soybeans is derived from the oil yield. Without question, soy oil market development is one of the keys to American soybean profitability. Your American



Soybean Association is conducting intensive market development activities in 76 foreign countries..." Address: 777 Craig Road, St. Louis, Missouri.

336. Brincker, A. 1979. Review of European legislation on vegetable protein in meat products. *J. of the American Oil Chemists' Society* 56(3):211-23. March. [33 ref]

• **Summary:** Contents: Abstract. Introduction: Comparison of compositional requirements for meat products, comparison of labeling requirements for meat products, comparison of provisions on vegetable proteins in meat products, vegetable protein in traditional meat products, vegetable proteins as binders, vegetable proteins as substitute for meat, vegetable protein in nontraditional meat products, prospects for the future (binders, substitutes for meat, limitations on the amount of vegetable protein, fortification of vegetable proteins, labeling).

Appendix I discusses the following countries: Austria, Belgium, Denmark, Federal Republic of Germany, Finland, France, Ireland, Italy, Luxembourg, The Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom. Within each country, any or all of the following topics are discussed: General compositional and labeling requirements, specific requirements for vegetable proteins in meat products, specific requirements for vegetable protein products, regulations concerning permitted nonmeat ingredients and raw chopped meat products, guidelines on analytical composition and raw meat materials, composition of traditional meat products, composition of nontraditional products, existing provisions concerning vegetable proteins in meat products, proposed provisions concerning vegetable proteins in meat products.

Appendix II gives a comparison of the basic approach to compositional requirements for meat products in these countries.

Appendix III gives the requirements for cooked Vienna sausages (not canned) in these countries.

Appendix IV gives a comparison of labeling requirements for meat products in these countries.

Appendix V gives a comparison of provisions of vegetable proteins in meat products in these countries. A photo shows A. Brincker. Address: Danish Meat Products Lab., Ministry of Agriculture, Howitzvej 13, DK-2000 Copenhagen F, Denmark.

337. J.F. [Janice Fillip]. 1979. In times of Plenty. *Whole Foods (Berkeley, California)*. July. p. 9-10.

• **Summary:** Discusses the work of Plenty (run by The Farm in Tennessee) in Guatemala and Tennessee. In Guatemala: "When an earthquake devastated Guatemala in 1976, some members of the Plenty team went there to assess the damage... Drawing on eight years of experience in soybean cultivation and soyfood production on The Farm, Plenty volunteers introduced the high-protein soybean to

local farmers in hopes of enhancing the Guatemalan diet. Experiments in adapting soybeans to tropical highland growing conditions captured the interest of local farmers who began planting soybeans from seeds donated by UNICEF. Plenty started teaching local women how to make soymilk and tofu with native utensils. Note: This earthquake, which struck Guatemala on 4 Feb. 1976, magnitude 7.5, killed 22,778 people.

"Funded by UNICEF, Plenty is now involved in construction of a soy dairy in Solola, the Cakchiquel capital, near Lake Atitlan. The dairy is expected to produce 100 pounds of tofu and 40 gallons of soy ice bean (soymilk ice cream) three times a week and to supply free ice bean to school lunch programs. The solar-powered soy dairy is designed to become a cottage industry for local people to produce low-cost, high-protein foods.

"At Plenty-On-The-Farm, a Village Technology training program provides instruction for Third World trainees in nutrition and soy production, agriculture, mechanics, village construction, radio communications and electronics, solar and water systems, primary health care and midwifery. Trainees are given free room and board at The Farm while they study. The program has already trained 27 people from Guatemala, Mozambique, West Germany, Portugal, South Africa, Brazil and India, and there is currently a backlog of people applying to study in the program."

338. Judy, W.H.; Hill, H.J. 1979. International soybean variety experiment. Fifth report of results, 1977. *INTSOY Series* No. 19. x + 285 p. Dec. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following regions and countries: Africa: Algeria, Cameroon, Egypt, Ethiopia, Ghana, Liberia, Mauritius, Morocco, Niger, Rhodesia (Salisbury; in today's Zimbabwe), Rwanda, Senegal, Somalia, Sudan, Swaziland, Tanzania, Togo, Upper Volta, Zaire, Zambia.

Asia: Bangladesh, Indonesia, Malaysia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand.

Europe: Czechoslovakia, Italy, Portugal.

Mesoamerica: Honduras.

Middle East: Israel, Saudi Arabia.

North America: United States.

Oceania: Fiji, Tahiti.

South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Paraguay, Peru, Surinam, Uruguay.

Note: This is the second earliest document seen (Feb. 2006) concerning soybeans in Liberia, or the cultivation of soybeans in Liberia. This document contains the second earliest date seen for soybeans in Liberia, or the cultivation of soybeans in Liberia (21 Sept. 1977). Sixteen varieties were tested at Monrovia. Improved Pelican gave the highest yield, 1,603 kg/ha. On 14 Dec. 1977, sixteen varieties were

tested at Suakoko. Calland gave the highest yield, 1,841 kg/ha. The source of these soybeans was INTSOY for ISVEX trials. Address: Univ. of Illinois, Urbana.

339. Bruijn, J.R.; Gaastra, F.S.; Schoeffer, Ivo. eds. 1979-1987. Dutch-Asiatic shipping in the 17th and 18th centuries. 3 vols. The Hague, Netherlands: Martinus Nijhoff. Illust. Index. 28 cm. Series: Rijks geschiedkundige publicatiën; Grote serie; 165-167.

• **Summary:** Volume 1. Introductory. Vol. 2. Outward-bound voyages from the Netherlands to Asia and the Cape (1595-1794). Vol. 3. Homeward-bound voyages from Asia and the Cape to the Netherlands (1597-1795; xi + 626 p.); published in 1979.

These three books are Nos. 165-167 in a larger series on related subjects.

Historical background on the Dutch Republic (1581-1795): After winning independence from Spain in 1648, the provinces of Holland, Zeeland, Groningen, Friesland, Utrecht, Overijssel, and Gelre formed a confederation known as the “Republic of the Seven United Netherlands.” All these provinces were autonomous and had their own government, the “States of the Province”. The States-General, the confederal government, were seated in The Hague and consisted of representatives from each of the seven provinces.

The Batavian Republic (Dutch: *Bataafse Republiek*) in the Netherlands, a period of French domination, and was the successor of the Republic of the United Netherlands. It was proclaimed on 19 Jan. 1795 and ended on 5 June 1806 with the accession of Louis Bonaparte to the throne of the Kingdom of Holland. The capital was in the Hague.

It was not until 1815 that the Netherlands truly became independent when the Congress of Vienna formed the “United Kingdom of the Netherlands.” The largest Dutch settlement abroad was the Cape Colony. It was established by Jan van Riebeeck on behalf of the Dutch East India Company at Cape Town (Dutch: *Kaapstad*) in 1652.

Soy is not mentioned in Vol. III because the cargo of the ships is not discussed. Contents of Vol. III: Introduction. List (in tabular form) of homeward-bound voyages (No. 5001-8401). Index of ship’s names. Index of personal names. Index of geographical names. Explanation of the column headings. The Introduction begins: “This book presents tables which give a virtually complete survey of the direct shipping between the Netherlands and Asia between 1595-1795. This period contains, first the voyages of the so-called *Voorcompagnieën* [forerunners of the VOC] and, then, those for an under the control of the *Verenigde Oostindische Compagnie* (VOC). The survey ends in 1795. That year saw the end of the regular sailings between the Netherlands and Asia, since, following the Batavian revolution in January, the Netherlands became involved in war with England. The last outward voyage left on 26 December 1794. After the news

of the changed situation in the Netherlands was received in Asia, the last homeward voyage took place in the spring of 1795. The VOC itself was disbanded in 1798.

“In total 66 voyages of the *Voorcompagnieën* are listed...” Of the VOC voyages, “there were in total 4722 outward and 3359 homeward.”

“The sources of the journeys consist primarily of the archives of the VOC in the *Algemeen Rijksarchief* in The Hague. They are, on the one hand, the so-called ‘Uitloopboeken’ and ship registers, and on the other, the ‘Overgekomen Brieven en Papieren’ (OBP’s). The latter contain the regular on the arrival and departure of ships in Batavia and other Asiatic harbours.”

Most of Vol. III consists of one long table (a two-page spread) which contains the following columns: (1) Voyage: Incl. Voyage number (starting with 5001.1, the first homeward voyage), name of the ship and of the master / captain. (2) Tonnage: The volume of the ships is given in metric tons. Note: 1 *last*–2 metric tons; *lasten* is the plural form of *last*. (3) Built: The year in which the ship was built. (4) Yard: “The place where the ship was built. The chambers of the VOC had their own yard. ‘A’ refers to Amsterdam, ‘Z’ to Zeeland, ‘D’ to Delft, ‘R’ to Rotterdam. ‘H’ to Hoorn, and ‘E’ to Enkhuizen. (5) Chamber: “With the outward voyages, this column gives the [name of] the chamber which equipped the ship; with the homeward, the chamber to which the ship was addressed. There is no entry in this column for ships organised by the *voorcompagnieën*. (6) Departure: Gives the date and place of departure from Europe, Asia, or the Cape of Good Hope. A date in the form 03-02-1645 refers to 3 Feb. 1645 (European form of date writing). (7) Call at the Cape: Gives the date of arrival at (above) and the date of departure (below) from the Cape of Good Hope. “In General no distinction is made between Table Bay and False Bay. Some ships sailed past the Cape (“no call”). (8) Arrival: The date and place of arrival. (9) On board: The number and types. For the homeward voyages three columns are given: (a) The number on board at departure. (b) The number dying en route to the Cape. (c) The number on board in departing the Cape. (9) Invoice value: The total value of the ship’s cargo. (10) Particulars: Additional information not found in the previous columns. (11) Corresponding number: Denotes the next homeward voyage in volume II or III.

From where did these ships depart in Asia? From Bali (starting 25 Feb. 1597). From Bantam, a city and former sultanate on Java (starting 12 Jan. 1599). From Djaratan, Java (starting 4 Feb. 1601). From Atjeh (now spelled Aceh) on the northern tip of Sumatra (starting 29 Nov. 1601; the place where Islam was first established in Southeast Asia). From Madagascar (1604). From Masulipatnam (now spelled Machilipatnam), a port in Andhra Pradesh, in southeast India (starting 12 May 1616). From Jacatra (later named Batavia in 1619 by Jan Coen now; Jakarta) (starting 11 March 1618). From Coromandel [southeast India] (starting 15 Oct. 1619).

From Batavia (near Jakarta) (starting 9 July 1621; the main Dutch port of departure switched from Bantam to Batavia in about 1621. Thereafter, during the 1600s, the great majority of Dutch homebound ships depart from Batavia). From Surat (in Gujarat, India) (starting 23 April 1625). From Gamron (in Persia / Iran) (starting 25 Dec. 1634). From Negombo (a trading port 37 km north of Colombo, mid-western Sri Lanka) (starting 11 Jan. 1640).

Where did these ships arrive in the Netherlands? In Texel (starting 11 Aug. 1597. Today, this is an island in the Netherlands, in the province of North Holland. It is the biggest and most populated of the Frisian Islands in the Wadden Sea). In Zeeland (starting 31 May 1600). In Middelburg (Flushing in English) (starting 28 Dec. 1599; today the capital of the province of Zeeland). In Vlissingen (starting 25 Aug. 1602; in the southwestern Netherlands. In the 17th century Vlissingen was a main harbour for ships of the Dutch East India Company {VOC}). In Goeree (The southernmost delta island of the province of South Holland, Netherlands) (starting 13 Oct. 1606). etc. Address: Netherlands.

340. Steiner, Stan. 1979. *Fusang: The Chinese who built America*. New York, NY: Harper & Row. 259 p. Index. 20 cm. [80\* ref]

• **Summary:** Contents: I. The Chinese who discovered America. II. The Chinese who built America. III. The Chinese who became America. Epilogue. Bibliography.

“On a bold voyage in the fifth century [458 A.D.], several Buddhist missionaries may have landed on the shores of America by mistake...” One of the priests, named Hui shen, told of the Kingdom of Fusang [America?] located 20,000 li (about 7,000 miles) east of Tahan. His account appears in the 41st Book of Chüan, in the 230th volume of the *Great Chinese Encyclopedia*, compiled by Liang court historians from 502 to 556 A.D. He wrote that the people of Fusang were civilized, could write, made paper from the bark of a tree, domesticated cattle with very long horns and drank their milk. In 1716 the first European scholar translated the story of Hui shen, In 1885 Edward Vining published 8 translations of Hui shen’s texts and related works; this plus the analysis totaled nearly 800 pages. The key question is “Where was Fusang?” Some say off Japan, where the Ainu live. Some say Sakhalin (p. 3-9).

In 138 B.C. the Emperor Wu Ti of the Han dynasty sent an ambassador / minister, Chang Ch’ien, to the West. Now called the Marco Polo of China, he was gone for 12 years, and wandered into the empire of Alexander the Great. Joseph Needham, the great British authority on Chinese history, wrote: “We did not discover China; on the contrary, China discovered us...” Chang Ch’ien traveled to the West more than 1,500 years before Marco Polo traveled to China.

Fa Hsien, a Chinese Buddhist monk, traveled to India in 399 A.D.

“It was the English addiction to tea that led to the Chinese addiction to opium and to the trade that was the harbinger of the collapse of both their empires. In 1666 the East India Company imported a mere 23 lb of tea to England; by the late 1600s it was importing 20,000 lb annually. England’s insatiable thirst for tea became a severe drain on Britain’s royal exchequer and it had to be paid for in millions of pounds of silver sterling. So opium poppies were grown in India under the supervision of the British government, the opium (much stronger than the traditional Chinese kind) was manufactured by the East India Company under a royal charter of the British government, and the opium was shipped to China—in violation of Chinese law—under the protection of the British fleet. The revenues were used to pay for Britain’s tea. In 1773 the East India Company was granted the monopoly of the opium trade and in 1779 it was granted the monopoly of its manufacture. It was during those years that smuggling opium into China increased dramatically. It was the American colonist’s rejection of Chinese tea that increased England’s need for opium revenues. All this led to the Opium Wars. England invaded China and won the right to free trade in opium.

Of the Chinese who came to America, almost all came from Kwangtung province in the south, and almost all of those came from a handful of counties around Canton, especially Chung-shan and Toishan. The emigration began amid the despair and defeat of the Opium Wars, and amid the triumphant, rising hopes of Chinese nationalism in the Taiping Rebellion.

In 1519 Ferdinand Magellan (lived ca. 1480-1521), a Portuguese navigator sailing under the flag of Spain, landed in the Philippines. That started the triangle of trade between China, the Philippines, and Mexico. The first Chinese came to Mexico on Spanish galleons in 1565 from Manila, in the Philippines. Most of these galleons were built by the Chinese, especially the Cantonese, based on their great sea-going junks of the Ming dynasty [see Zheng He], some of which weighed 10 times as much as Columbus’ flagship. They landed in Acapulco (a port 200 miles south of Mexico City and later called “ciudad de los Chinos”), and by 1635 there was a large Chinese population in Mexico, especially in Acapulco, Mazatlán, and Mexico City. This China Trade ended in 1815.

Manila was the gateway to America. “In 1586 there were said to be ten thousand Chinese in Manila, a majority of the city’s population.” By 1636 it was almost 30,000 and by 1749 it was 40,000. In all those years there were not more than a few hundred Spaniards in the entire city. The men of Canton largely built the city of Manila.

In 1788 some 50-70 Chinese built one of the first English forts on the Pacific coast of America (p. 93). More than 100 pioneers from China were settled on the northwest Pacific coast by the late 1700s. They preceded by almost 2 decades the famed Lewis and Clark expedition, which set



forth to “discover” the Pacific in 1804. In Jan. 1848, when gold was discovered at John Sutter’s sawmill (“Sutter’s Mill” at Coloma) located 45 miles northeast of New Helvetia (Sutter’s Fort) in Sacramento, there were only a few hundred Chinese in California. In 1852 the Chinese joined the Gold Rush. They called California the Golden Mountain. By 1852 there were 20,000 or more Chinese in California, and by 1860 there were 30-50,000, mostly young men from Kwangtung and comprising 10% of the state’s population. Some came as merchants to sell goods to the gold miners, some as coolies or contract laborers. The 1870 census counted 34,933 Chinese miners, or 25% of all miners in the state. The Chinese built the railroads in the West. They were considered very strong, hard workers. Many became fishermen and farmers. In 1886 the California Bureau of Labor estimated that 87.5% of “all labor on farms” in California was Chinese.

“In the late 1880s there were said to be nearly 110,000 Chinese residents on the sparsely populated frontiers of the West. But 30 years later there were barely more than 60,000. Nearly half of the western pioneers had been terrorized into leaving their homes. Many were massacred and excluded by harsh, discriminatory laws. In 1882, five years after accepting as a gift the statue of liberty that welcomed European immigrants, the U.S. Congress enacted the Exclusion Act, which prohibited any Chinese man who worked with his hands or was a laborer from coming to the USA. All Chinese who were already residents were forever barred from becoming citizens.

The Chinese were the single largest nationality in the West in the frontier days, comprising at least one-quarter of the population of California and a greater part of many of the remote western territories.

One large California town populated only by Chinese was Locke. Founded in 1912, it had 1,500 residents by 1915.

341. *Soybean Digest*. 1980. Soy [protein food] demand grows in Spain. May/June. p. 40.

• **Summary:** “Here’s a case study of how to develop a market. Exports of U.S. soybeans to Spain tripled from 701 metric tons of soy vegetable protein in 1976 to nearly 2,000 metric tons in 1979. When market development work began, it faced several challenges: high quotas and tariffs on texturized vegetable protein (tvp), government regulations on soy protein identification and a fragmented industry with no organized government contact. First step by ASA: organize importers and help them develop a responsible food-ingredient group. The National Vegetable Protein Association formed in 1978. This group successfully appealed government ingredient requirements and gained liberalization of tvp imports. Duty on tvp was reduced from 47% to 11%. Other projects: soy protein educational program for pediatricians and dieticians and seminars on soy protein for Spanish decision-makers. Officials expect continuing

efforts to help increase the tvp market to over 10,000 metric tons by 1986.”

342. *Soya Bluebook*. 1980-1994. Serial/periodical. St. Louis, Missouri: American Soybean Assoc.

• **Summary:** A directory and information book (general and statistical) for the soybean production and processing.

Titled *Soybean Blue Book* from 1947-1964; *Soybean Digest Blue Book Issue* from March 1965 to March 1972; *Soybean Digest Blue Book* from March 1973 to 1979; *Soya Bluebook* from 1980 to 1994.

In 1987 the *Soya Bluebook* contained seven major sections: Organizations (incl. Associations), Soy Directory (Crushers, Soyfoods, Industrial Products), Soybean Manufacturing Support Industries, Marketing and Auxiliary Services, Soy Statistics, Glossary, Standards and Specifications. Well indexed, with color maps. In the early 1980s the Bluebook started to include many more foreign soyfood manufacturers.

The book contains many tables, including: “World Soybean Production,” which gives area and production in specified countries (1974-1980). In 1980 this included: North America: Canada, Mexico, United States. South America: Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay. Europe: Bulgaria, France, Hungary, Romania, Spain, Yugoslavia. Soviet Union. Africa: Egypt, Ethiopia, Nigeria, South Africa, Tanzania, Uganda, Zaire. Asia: Burma, China (Mainland), Taiwan, India, Indonesia, Iran, Japan, Kampuchea [Cambodia], Korea (north), Korea (South), Philippines, Thailand, Turkey, Vietnam. Oceania: Australia. World total.

In early 1988 the American Soybean Association sold the *Soya Bluebook* to Soyatech, owned by Peter Golbitz. His first print run was 8,800 copies. Yellow pages were added. In Dec. 1989 Soyatech announced that in 1988 estimated readership was 10,265 in 55 countries. 33.6% of the buyers were soybean processors / manufacturers, 28.7% were importers, exporters, transporters or marketers, 15.0% were suppliers of soybean processing or handling equipment and manufacturing support services, 9.9% were consultants, booksellers, or periodicals, 8.7% were organization or government agencies, and 4.1% were colleges, universities, libraries, and information centers. By region, 64.3% were sold in North America, 15.2% in Europe, 9.1% in Asia / Pacific / Oceania, and 9.1% in Latin America.

The 1991 *Soya Bluebook* appeared in Aug. with a new larger (8½ by 11-inch) format and 264 pages. The indexing system is more complete and the pages are tabbed for easy access to each section. The “reference” section was expanded by adding nutritional information on soyfoods, a new chart of soyfoods products, and soybean oil trading standards.

*Health Foods Business*. 1992. Nov. p. 218. *Soya Bluebook* now reports its circulation to be 3,000.

Talk with Joy Froding of Soyatech. 1995. Jan. 12. The

1994 print run of Soya Bluebook was 2,300 copies. An estimated 4 people read each copy.

Price of the Soya Bluebook (1 book sent to USA, Canada, or Mexico): 1992 = \$28 (if paid before June 1; \$38 afterward). 1993 = Same price. 1994 = \$38 (no prepayment discount; Available July 1994; this book has fold-out indexing tabs and 272 pages. The order form announcing the '94 Soya Bluebook states: "For 47 years Soya Bluebook has served as *the* noted information source for the world's soybean industry"). Starting in Jan. 1994 four issues of *Bluebook Update* are available free of charge to all who subscribe to or are listed in *Soya Bluebook*. 1995-96 = \$38 (\$48 after 1 June 1995; then in Nov. 1995 the price is raised to \$58; incl. indexing tabs, 292 pages). This 1995-96 issue is titled "Soya Bluebook Plus: the annual directory of the world oilseed industry." Crops featured on the front cover are "soya, corn, cottonseed, palm, canola, rapeseed, and sunflower." Address: St. Louis, Missouri; Bar Harbor, Maine (After Jan. 1988).

343. **Product Name:** [Tofu, and Soymilk].

**Manufacturer's Name:** Unimave Tofu.

**Manufacturer's Address:** Rua Mouzinho da Silveira 25, 1200 Lisboa, Portugal.

**Date of Introduction:** 1980.

**New Product–Documentation:** Letter from Sjon Welters. 1982. April 16. "In Portugal some macrobiotic centres are busy in promoting soyfoods as part of the macrobiotic diet. They produce tofu and soymilk on a small scale. This macrobiotic centre is very active and did have a lot of success and publications. A friend who studied at Manna for a while, José Parracho is planning to make tempeh and tofu in Portugal. The business will be Quinta da Portugesa in Setubal."

Letter from Miguel de Abreu in Belgium. 1989. Oct. 2. His profession is a natural foods, macrobiotic, vegetarian cook. He began in April 1978, when he started cooking at Unimave, a vegetarian macrobiotic cooperative in Lisbon, Portugal. "Around 1980 we started making tofu and soymilk at Unimave on a community scale... Today I am living in [Oostduinkerke] Belgium with my wife and we would like to start making tofu" and tofu products.

Note: This is the earliest known commercial soy product made in Portugal.

344. Caraballo de Pérez-Quirante, Carmen. 1980.

Introducción a la vitacultura [Introduction to vitaculture]. Zaragoza, Spain: Librería General. 47 p. No index. 29 cm. [Spa]

• **Summary:** About nutrition, health, and vegetarianism. Under "Substitutions" (p. 24) soya, lecithin, and gluten are mentioned. Soya is also mentioned on pages 27, 38-39. Address: Vitacultura, asesora de praxis de Felipe do Torres, antropónomo.

345. Doi, Tadao; Takeshi, Morita; Chonan, Minoru. 1980. Hôyaku Nippo jisho [Vocabulary of the language of Japan]. Tokyo: Iwanami Shoten. xxxiv + 862 p. 27 cm. [Jap; Por]

• **Summary:** This is a Japanese-language translation of the original 1603 edition, *Vocabulario da Lingua de Iapam*, the second earliest dictionary of the Japanese language compiled by Europeans. Soy-related terms in this dictionary, which are translated from the original hard-to-read Portuguese into modern Japanese, are described in detail at the reference for the original 1603 dictionary, which see.

In the Forward, the author notes that this is the entire translation of the Nagasaki edition of the Japanese Portuguese Dictionary. The original title is *Vocabulario da Lingoa de Iapam com a declacaração em Portugues* (Japanese dictionary with explanation in Portuguese), published in 1603 by the Japanese Society of Jesus (Nihon Iezuzu-kai). In 1604 a second dictionary was published, titled *Arte da Lingoa de Iapam Composta Pello Padre Iaaod Rodriguez* (1604-1608).

Christian priests traveled by boat to Japan to teach the Japanese Christianity. As a result, they left many historical documents. Francis Xavier first arrived in Japan in 1549 and only 54 years later his group published this remarkable Japanese dictionary. The year 1603 was also the year that Tokugawa Ieyasu became the shogun (Seiitaishogun, or highest ranking samurai), founding the Tokugawa Shogunate or Edo period. In Japanese history it was the turning point at which the country changed from the medieval period to the modern one. This dictionary is a very unique mirror which reflects this period and is regarded as an important document that raises many questions in Japanese cultural history. The dictionary is indispensable in Japanese linguistic history since it contains many Japanese words of the period with explanations in Portuguese. In those days the Japanese had dictionaries that focused on Chinese characters (kanji) and simple dictionaries for waka and renka poems. This dictionary picked up a wide range of words from daily conversation, organizing and defining them in modern dictionary form. The original edition was stored in a secret place in Europe, inaccessible to Japanese, who therefore had to largely depend on a 19th century French translation by Leon Pajes. A rotogravure edition of the book stored at Oxford University entered Japan during the Taisho period (1912-1926) and was studied. Only recently was a facsimile copy of the original edition published, and it is being used increasingly.

This dictionary was produced by the Japanese Society of Jesus [Jesuits] to further their goal of spreading Christianity. The 1603 dictionary was developed to help the priests understand dialects, lower-class speech, and the confessions of the local common people. The 1604 dictionary focused on the speech of the upper classes and more educated people. Thus the 1603 dictionary collected words the priests needed

to understand, while the 1604 dictionary collected those that they wanted to use.

346. Sano, Rinji. 1981. Minami no tōfu, kita no tōfu: Tōfu kasutera no kokyō [Southern tofu, northern tofu: The birthplace of tofu kasutera]. *Daizu Geppo (Soybean Monthly News)*. May. p. 36-40. [Jap]

• **Summary:** The Japanese word *kasutera* comes from the Portuguese *castella* meaning a spongecake. It is probably named after the kingdom of Castile, which is now in Spain. Japanese kasutera is a damp, rich, sweet spongecake with a light, delicate texture. It is made from flour, eggs, malt syrup, and a mixture of finely granulated large-crystal sugar.

In Yokote city, Akita prefecture, scraps of tofu are sometimes added to the ingredients when making this delicious and popular spongecake; it is served with tea.

347. Bader, Kenneth. 1981. Re: History of the American Soybean Association. Letter to William Shurtleff at Soyfoods Center, July 25—in reply to inquiry. 1 p. Handwritten, without signature.

• **Summary:** Dr. Bader and staff answered six questions: (1) In what years were each of the ASA overseas offices opened? Tokyo, Japan 1956. Hamburg, Germany 1969, and again in 1969. Taipei, Taiwan 1970. Brussels, Belgium 1970. Mexico City, Mexico 1971. Vienna, Austria 1974. Madrid, Spain 1976. Seoul, Korea 1979. Singapore 1979.

(2) What is the present size of the ASA overseas staff? 50. St. Louis staff? 110. Total American staff? 134.

(3) What was ASA membership in 1955? 5,400. In 1960? 5,900. In 1970? 12,368. What is present ASA membership? 20,028.

(3) How many soybean growers does the ASA represent in the 24 states having checkoff programs? 510,000.

(4) What is meant by the term “Third Party Services” in your annual budget? It is your main source of income! “It is the value of funds and services in joint projects provided by soybean and related trade organizations, private firms, institutes, and other parties. In other words, if ASA invests \$10,000 in a soy oil promotion project and it is matched by \$20,000 in the same project by a manufacturer, we count the \$20,000 a ‘third party funds.’”

(5) When was the Human Nutrition Center opened in Mexico? Early 1980. What are a few of its main activities related to soyfoods? “Identify and introduce acceptable soy food dishes in Latin America. Train nutritionists on soy products. Work with governments and institutions on soy nutrition.” Address: CEO, American Soybean Assoc., St. Louis, Missouri.

348. Shurtleff, William; Aoyagi, Akiko. 1981. History of Cargill, Inc. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 8 p. Sept. 8. Unpublished typescript. Available online at [www.soyinfocenter.com](http://www.soyinfocenter.com).

• **Summary:** A comprehensive history of the subject.

Contents: Introduction: Oldest company, last to enter the industry, now the largest. Early years (1865-1939): Origin in about 1865, description of company, 1920's and 1930's. 1940-1959: Entry into soybean crushing in 1942, four plants by April 1945, six plants by Sept. 1947, seven plants by 1955 and move into international grain market, rapid expansion to lead in 1957, first industrial oil refining. 1960-1980's: 1960 situation, started overseas in Spain in 1965, 3 European plants, 9 foreign feed plants by 1969, big financial disclosure in 1969, prosperity and controversy in the 1970's, new plants, Brazil operations and government loan, 1973 controversy setting off soybean boycott, Tradax, government requirement for grain companies to report big orders, 20 plants on 5 continents in 1975, world's largest grain trading company, diversification, move into vegetable oil refining, 14 U.S. and 6 overseas plants in 1980, enviable position of having plants in U.S.-Brazil-Europe triangle. Address: Lafayette, California. Phone: 415-283-2991.

349. Judy, W.H.; Jackobs, J.A.; Engelbrecht-Wiggans, E.A. 1981. International soybean variety experiment: Sixth report of results, 1978. *INTSOY Series* No. 21. Nov. xi + 305 p. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following regions and countries: Africa: Algeria, Botswana, Cameroon, Egypt, Ethiopia, Gabon, Ghana, Malawi, Morocco, Rwanda, Senegal, Somalia, Sudan, Tanzania, Upper Volta, Zaire, Zambia, Zimbabwe.

Asia: Bangladesh, Taiwan, India, Indonesia, Korea, Malaysia, Nepal, Pakistan, Sri Lanka, Thailand.

Europe: Italy, Poland, Portugal.

Mesoamerica: Costa Rica, Dominican Republic, Guatemala, Honduras.

Middle East: Iran, Iraq, Saudi Arabia, Turkey.

North America: United States.

Oceania: Fiji, Tahiti.

South America: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Paraguay, Peru, Venezuela.

Results of the first ISVEX trials in Morocco are reported. Soybeans were grown at three sites: (1) Berkane. Date planted: 22 May 1978. Cooperator: M.A. Yacoubi. Best yield: Harcor 3,724 kg/ha. (2) Gharb. Date planted: 13 May 1978. Cooperator: M.A. Yacoubi. Best yield: Elf 3,046 kg/ha. (3) Tadla. Date planted: 12 June 1978. Cooperator: Nadah Driss. Best yield: Crawford 3,370 kg/ha. Address: Univ. of Illinois, Urbana.

350. **Product Name:** [Emulsoy 200 Mesh Soy Flour].

**Manufacturer's Name:** Aceites y Proteinas S.A. (“Acepresa”).

**Manufacturer's Address:** Repelega, Portugalete, Vizcaya, Spain.



**Date of Introduction:** 1981.

**New Product–Documentation:** Soy Bluebook. 1981. p. 64; 1986. p. 87. Note: This is the earliest known commercial soy flour product made in Spain.

351. **Product Name:** [Aceprosa Lecithin].

**Manufacturer's Name:** Aceites y Proteinas S.A. (Aceprosa).

**Manufacturer's Address:** Repelega, Portugalete, Vizcaya, Spain.

**Date of Introduction:** 1981.

**New Product–Documentation:** Soy Bluebook. 1981. p. 56.

352. **Product Name:** [Lecithin].

**Manufacturer's Name:** Aceterias Reunidas de Levante S.A. (ARLESA).

**Manufacturer's Address:** Castell de Pop, 33-Nazaret, Valencia 11, Spain. Main office: Avda. Generalísimo, 61-8a p. Madrid 16.

**Date of Introduction:** 1981.

**New Product–Documentation:** Soy Bluebook. 1981. p. 56; 1983. p. 59. Main office is now P\* de la Castellana, 143-8\*p. Madrid 16.

353. **Product Name:** [Soy Flour].

**Manufacturer's Name:** ARLESA–Extrasur.

**Manufacturer's Address:** Carretera del Coper, S/N, Punta del Verde, Sevilla, Spain.

**Date of Introduction:** 1981.

**New Product–Documentation:** Soy Bluebook. 1981. p. 64.

354. **Product Name:** [Tagol Soy Flour].

**Manufacturer's Name:** Tagol, Companhia de Oleaginosas do Tejo Sarl.

**Manufacturer's Address:** Ave. Republica 44, 4 Esp. Lisboa 1, Portugal.

**Date of Introduction:** 1981.

**New Product–Documentation:** Soy Bluebook. 1981. p. 64.

355. Wood, Brian J.B. 1982. Soy sauce and miso. *Economic Microbiology* 7:39-86. Jan. A.H. Rose, ed. Fermented Foods. [50 ref]

• **Summary:** Contents: 1. Introduction. 2. The preparation of soy sauce: Introduction, preparation of raw materials (the beans, wheat), mixing, koji, moromi. 3. Of beans, microbes, and miso: Beans, microbes, miso. 4. Trade in soy sauce: Introduction, statistics. Table 1 (p. 64-66) shows exports of soy sauce in 1978, in tonnes (metric tons) from Hong Kong, Korean Republic, Singapore, Japan, and total, to almost every country in the world (with each country's population in millions), grouped by region as follows:

1. North America: Canada, USA (#1)–Regional total imports: 6,052.3 tonnes.

2. South and Central America [and Caribbean]: Argentina (#3 in region), Bolivia, Brazil, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico (#2), Nicaragua, Panama, Paraguay, Surinam, Venezuela (#1), Granada, Jamaica, Trinidad and Tobago, total. Former Dutch West Indies–Regional total imports: 1,046.4 tonnes.

3. Europe: Austria, Belgium, Czechoslovakia, Denmark, Finland, France (#4 in region), Germany (West #3), Greece, Italy, Netherlands (#2), Norway, Portugal, Spain, Sweden, Switzerland, UK (#1), USSR–Regional total imports: 3,017.7 tonnes.

4. Near and Middle East: Bahrain (#3), Egypt, India, Iran (#2), Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia (#1), United Arab Emirates, Yemen Arab Republic–Regional total imports: 1,193.5 tonnes.

5. Far East and Western Pacific: Brunei, Hong Kong (#3 in region), Indonesia, Japan, Korea (South), Macao, Malaysia (#2), Philippines, Sabah (#1; A state of Malaysia from 1963; Formerly British North Borneo), Sarawak (A state of Malaysia from 1963), Singapore, Taiwan, Thailand–Regional total imports: 3,139.4.

6. Pacific and Australasia: Australia (#1 in region), Cook Islands, Christmas Islands, Fiji, Guam (#2), Nauru, New Caledonia, New Hebrides, New Zealand, Oceania n.c.s. (#3), Papua New Guinea, Portuguese Timor, Samoa and Tonga, Solomon Islands, Tuvalu (Ellis Island), U.S. Oceania–Regional total imports: 1,647.5 tonnes.

Note: This is the earliest document seen (March 2010) concerning soybean products (soy sauce) in Kiribati (Christmas Islands), in Nauru, in Qatar, in Portuguese Timor (later renamed Timor-Leste [East Timor]) or in Tuvalu. This document contains the earliest date seen for soybean products in Kiribati (Christmas Islands), in Nauru, in Qatar, Portuguese Timor, or in Tuvalu (1978); soybeans as such have not yet been reported.

7. Africa: Algeria, Canary Islands, Ethiopia, Gambia, Ghana, Kenya, Libya, Malagasy, Malawi, Mauritius (#2 in region), Nigeria, South Africa (Republic of, #1), Sudan, Réunion Islands (#3), Tanzania, Zaire. Other African countries–Regional total imports: 365.7 tonnes. World total imports: 15,731.5 tonnes, of which 6,192.8 tonnes from Hong Kong, 1,233.5 tonnes from South Korea, 1,713.6 tonnes from Singapore, 6,591.6 tonnes from Japan. The value in pounds sterling and in pounds sterling per tons of soy sauce is given for each exporter.

Other tables show: (2) Soy sauce exports (in tonnes and value) each year from 1976 to 1976 from Hong Kong, South Korea, Singapore, and Japan. A large percentage of Hong Kong's exports are re-exports (probably from China). (3) Total soy sauce exports from Japan, 1976-1978, by container type, with amount and value. (4) Soy sauce and

miso production in Japan every 5 years from 1965 to 1978 (in tonnes). (5) Soy sauce and miso production in Japan for export in 1976, 1977, and 1978. Miso production (in tonnes) averaged about 40% of soy sauce production, and miso exports (in tonnes) averaged about 13% of soy sauce exports. (6) Imports of soy sauce into Hong Kong, Singapore, and the USA from exporting countries in 1978 (with figures for exports from China in 1976 and 1977). (7) Re-exports of soy sauce (made in China) from Hong Kong and Singapore in 1978 to major importing countries worldwide, by region, by country. Small countries that are the destination of this soy sauce include: Honduras, Nicaragua, Panama, Venezuela, Trinidad and Tobago, Former Dutch West Indies [also called Netherlands Antilles; they are part of the Lesser Antilles and consist of two groups of islands in the Caribbean Sea: Curaçao and Bonaire, just off the Venezuelan coast, and Sint Eustatius, Saba and Sint Maarten, located southeast of the Virgin Islands. The islands form an autonomous part of the Kingdom of the Netherlands], Pakistan, Saudi Arabia, United Arab Emirates, Brunei, Sabah, Sarawak, Fiji, Nauru, Oceania (non-U.S.), Oceania (U.S.), Papua, Samoa and Tonga, Solomon Islands, Ghana, Malagasy Republic, Togo. Total from Hong Kong: 2,945.3 tonnes, and from Singapore 109.5 tonnes.

(8) Exports of miso (in tonnes) from South Korea and Japan in 1978 to major importing countries worldwide, by region, by country. The leading importers are: USA (622), Saudi Arabia (353), Singapore (66), Bahrain (64), Netherlands (38), Iran (29), Iraq (29) France (28), German Federal Republic (23), Smaller importers include: Chile, Guyana, Surinam, Bangladesh, Iran, Iraq, Jordan, Kuwait, Qatar, Saudi Arabia, United Arab Emirates, Yemen Arab Republic, Sabah, Fiji, Guam, New Hebrides, Papua New Guinea, Samoa, Solomon Islands, Algeria, Canary Islands, Ghana, Kenya, Libya, Mozambique, South Africa Republic, Zaire.

Note: This is the earliest document seen (June 2007) concerning soybean products (miso) in Qatar. This document contains the earliest date seen for soybean products in Qatar (1978); soybeans as such have not yet been reported.

(9) Exports of miso from South Korea and Japan in 1976, 1977, and 1978 (quantity and value each year; no importing country names are given).

5. Tour of South East Asia: Technical and scientific aspects, trade aspects. 6. Acknowledgments. References

The chapter on Trade states: Soy sauce and soy paste (miso) are traded between all countries of South East Asia. The Korean Republic's exports nearly quadrupled in tonnage. The Kikkoman Company's production facility in Wisconsin produced 21,6000 tonnes of soy sauce in 1978. This was equal to 3 times the total exports from Japan in the same year. Japan's total share of the world soy sauce market remains very healthy. Miso exports are still

small in comparison with soy sauce. On a rising market Japan's exports still only represent 0.2% of its annual miso production; "clearly there is considerable room for expansion here."

Miso is of greater relative importance to Korea than it is to Japan. Among the European countries, Belgium and Holland import the greatest amount of miso on a per capita basis. Spain imports a fair amount of miso. The U.S.A. and Canada had total miso imports totaling about 10% of their soy sauce imports.

"In Thailand, there are about 50 soy sauce factories, the majority of which are small, producing less than 100 kilolitres per year, although it should be noted that most of them also produce soybean paste and soybean cheese [probably tofu]. The total annual consumption of soy sauce in Thailand is estimated at about 6,000 kilolitres (about 7,200 tonnes).

"In Malaysia, there are about 140 soy sauce factories producing in total an estimated 5.5 million gallons of soy sauce per year according to the proprietor of a leading brewery in Kuala Lumpur. This is about 21,000 tonnes per annum" (p. 84). Address: Dep. of Applied Microbiology, Univ., of Strathclyde, Glasgow [Scotland], U.K.

356. Lauser, Greg C. 1982. History of Cargill's involvement in the soybean processing industry. Minneapolis, Minnesota. 5 p. March 15. Unpublished manuscript.

• **Summary:** Soybean processing: 1942–Cargill entered the soybean processing business with the acquisition of expeller plants in Springfield, Illinois (sold in 1950), and Cedar Rapids (east), Iowa. Note: These two plants were purchased from Ike Sinaiko and Joe Sinaiko respectively, but probably in 1943.

1943–Cargill acquired Plymouth Processing Company's plant and grain elevator at Ft. Dodge, Iowa (sold in 1971 [to Land O'Lakes]).

1945–The company acquired from Honeyamead solvent extraction plants in Spencer and Cedar Rapids (west), Iowa. The solvent-extraction process is used in modern plants today.

1946–Cargill acquired the Washington, Iowa, soybean crushing plant and began crushing flax seed at a plant it built at Port Cargill in Savage, Minnesota. The same year, the company acquired from the Falk Corporation a flax processing plant in Minneapolis. Since 1967, that plant also has been crushing sunflower seeds.

1947–The company opened a soybean crushing plant at Savage, Minnesota.

1950–Cargill built its first plant specifically designed to crush soybeans in Chicago to serve domestic oil and meal markets. In 1956, a refinery was built adjacent to the crushing plant that produces industrial refined non-edible oil used in paints and other protective coatings and in vinyl products. Cargill also acquired a flax crushing plant in

Philadelphia that was closed as a crushing plant in 1953.

1957–Cargill opened a soybean processing plant in Memphis, Tennessee. A second plant was added adjacent to the first in 1970.

1959–Cargill expanded the scope of its soybean crushing activities to the Southeast by opening a facility in Norfolk, Virginia, and acquired a plant in Sioux City, Iowa, from Sioux Industries.

1960–The Wichita, Kansas soybean crushing plant was acquired from the Soy Rich Company.

1961–The company acquired the Des Moines, Iowa soybean crushing plant from Spencer-Kellogg Co. In 1967, Cargill opened its first domestic salad oil refinery adjacent to this crushing plant.

1965–Cargill began crushing soybeans overseas at its new plant in Tarragona, Spain. The company opened a second crushing plant in 1968 in Amsterdam, the Netherlands. A third seed crushing plant [named Soja-France, with Dominique de Clerq as chairman of the board and general manager] was opened at St. Nazaire, France, in 1970. A crushing plant at Reus, Spain, also was added in 1970 and Australian cottonseed crushing operations were acquired in 1972.

1967–The company opened the Gainesville, Georgia, soybean processing plant. A refinery, Cargill's first to produce hydrogenated or "hardened" oil for the Southeastern food manufacturing industry, was built adjacent in 1979.

1970–Cargill built the Fayetteville, North Carolina, crushing plant and a refinery was added in 1976.

[1971–Soybean crushing plant at Fort Dodge, Iowa, sold to Land O'Lakes.]

1973–Soybean processing complex began operations at Ponta Grossa, Brazil.

1975–Acquired plant in Osceola, Arkansas.

1976–Soybean plant was built at Barcelona, Spain.

1977–Soybean plant constructed and operations began at Brest, France.

1978–The company opened a soybean processing plant in Sidney, Ohio, to serve domestic meal and oil markets. This facility was the company's first soybean processing plant designed to burn coal as its source of power.

1980–Construction began on vegetable oil refinery adjacent to Wichita soybean crushing plant and operations started in late 1981. A crushing plant also was acquired in Antwerp, Belgium.

1981–Company acquired a soybean crushing and vegetable oil refinery complex in Hartsville, South Carolina.

1982–Cargill acquired a soybean crushing plant in Monte Alto, Brazil.

**Summary. Soybean Crushing:** The company now operates soybean processing plants in the United States, the Netherlands, Belgium, France, Spain, Brazil. The plants range in capacity from 20,000 to nearly 120,000 bushels a day. In the U.S., the company operates 15 plants

in Iowa, Illinois, Minnesota, Kansas, Virginia, North Carolina, South Carolina, Tennessee, Georgia, Arkansas and Ohio. It operates 6 U.S. refineries located in Gainesville, Georgia; Fayetteville, North Carolina; Des Moines, Iowa; Hartsville, South Carolina; Chicago, Illinois and Wichita, Kansas. Address: Public relations, Cargill, P.O. Box 5625, Minneapolis, Minnesota 55440.

357. *Foreign Agriculture*. 1982. Imports of U.S. soybean oil could stage comeback in 1982. March. p. 21.

• **Summary:** U.S. soybean oils have been virtually cut out of Morocco's import market for oilseeds the past couple of years because of stiff competition from other suppliers, most notably Spain.

358. *Foreign Agriculture*. 1982. Portugal's increase in crushing capacity to stimulate soybean imports. March. p. 23.

• **Summary:** New oilseed crushing equipment coming on stream during the first quarter of 1982 will just about double Portugal's crushing capacity, pushing the daily total to about 3,000 tons. Soybean imports are expected to more than double—rising to 750,000 tons in 1982 from 300,000 tons in 1981.

359. Welters, Sjon. 1982. Re: Recent developments with soyfoods in Europe, and ties with macrobiotics. Letter to William Shurtleff at Soyfoods Center, April 16. 6 p. Typed, with signature on letterhead (photocopy).

• **Summary:** This letter, whose letterhead reads "Manna Natuurlijke Levensmiddelen," contains names and addresses of many new soyfoods companies, many of them started by people interested in macrobiotics. Names and addresses of the following companies are given:

Tofu Denmark (in Valby, run by Per Fruergaard, a macrobiotic), Bernard Storup, Ab & Paulien Schaft (Dutch, setting up a small shop in Bailliestavy, France, to make miso, shoyu, natto, and koji), Traditions du Grain (Jean Luc Alonso is setting up a macrobiotic tempeh shop in Ivry France; they will start this summer), Paul Jones (Tofu shop in London), Saskia de Jong (may make miso in Ireland), de Brandnetel (tofu shop in Antwerp, Belgium), Jonathan (makes tofu, ganmo, seitan, mochi in Ekeren, Belgium. Run by J. v. Ponseele), Seven Arrows (Leuven, Belgium; making tofu), Lima Foods (now sell miso made at their plant and farm in France), Witte Wonder (Den Haag, Netherlands), De Morgenstond (Bakkeveen, Netherlands), Jakso (Heerwaarden, Netherlands. Run by Peter Dekker. The first and only shop making tempeh from organic soybeans), Firma Lembekker (Amsterdam), Unimave (Lisbon, Portugal), Jose Parracho (Setubal, Portugal), Swame [sic, Swami] Anand Svadesha (Furth im Wald, West Germany), Bittersuess (Cologne, West Germany. Attn: Thomas Kasas/Karas). Three distributors of soyfoods and natural foods in Germany are



YinYang (Berlin), Rapunzel (Heimraadshofe), and Mutter Erde (Werbelen). In Finland: Luonnonruokakauppa AUMA (Helsinki). In Switzerland: Verena Krieger of Sojalade (Engelberg, tofu shop), Hans Rudolph Opplinger (Cham, tofu shop), Marty Halsley (Nyon, tofu & tempeh), Restaurant Sesam (Bern). P. Ton van Oers is a Dutch priest who works in Kananga, Zaire. The natives have grown soya for 10 years and he is thinking of making tofu and soymilk from them.

"In Great Britain the East West Centre is very active in promoting soyfoods. As a part of the Kushi Institute program they have home-scale processing, in which tofu, tempeh, and miso-making are taught by Jon Sandler [Sandifer?]. He is the tempehmaker of the EWC too at Community Health Foundation, 188 Old St., London EC1. In the Netherlands, a great deal of soyfoods promotion is done by the East West Center and Manna. As you probably know, Manna was the first to introduce miso, tamari, shoyu, tempeh, tofu and koji to the larger public and we are still the main promoters of soyfoods as part of a more natural, vegetarian, and economic diet. Manna has been followed by a lot of other distributors of natural and health foods. We have two competitors in the tofu business: Witte Wonder and De Morgenstond.

"At the moment I'm the only teacher giving lectures on homescale miso-, tofu-, tempeh-, shoyu-, tamari-, natto-, and koji-making in the Netherlands. Mainly at the East West Centre and sometimes at different places in the country. People are starting to get interested."

Note: This is the earliest document seen (Jan. 2003) concerning the work of Swami Anand Svadesha of West Germany, and of Thomas Karas of Bittersuess (Cologne, West Germany). Address: Stichting Natuurvoeding Amsterdam, Meeuwenlaan 70, 1021 JK Amsterdam-N, Netherlands. Phone: 020-323977.

360. 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; Spa]

• **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 proteína 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. Pastisoya—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.

361. **Product Name:** [Tempeh].

**Manufacturer's Name:** Jose Parracho Tofu.

**Manufacturer's Address:** Quinta da Portuguesa, Fieguesia da Annuciada, Setubal, Portugal.

**Date of Introduction:** 1982 July.

**New Product—Documentation:** Letter from Sjon Welters. 1982. April 16. "In Portugal some macrobiotic centres are busy in promoting soyfoods as part of the macrobiotic diet... A friend who studied at Manna for a while, José Parracho is planning to make tempeh and tofu in Portugal. The business will be Quinta da Portuguesa in Setubal."

Soyfoods Center Computerized Mailing List. 1982. July 23. Owner: Jose Parracho.

362. Lucas Meyer GmbH. 1982. Re: Lecithin. Form filled out and returned to William Shurtleff at Soyfoods Center; undated. 1 p. Questions are numbered and typed. But answers are handwritten and unsigned.

• **Summary:** To answer your questions: "1. Lecithin was first used in commercial margarine in 1925/26, experimentally

by small margarine manufacturers in Hamburg, Germany. 4. Approximately 6% lecithin is found in egg yolk. 7. The 3 largest manufacturers of lecithin in Europe, in order of size, are: By quantity, Unimills, Div. of Unilever N.V., is largest. Lucas Meyer is second. And N.V. Vamo Mills is third.

“Lucas Meyer is number 1 by product range and worldwide sales. Lucas Meyer is producing lecithin in Germany, Italy, the Netherlands, France, Spain, the U.K., and in Decatur, Illinois.” Address: Ausschlaeger Elbdeich 62, D-2000 Hamburg 28, West Germany. Phone: 78-1701.

**363. Product Name:** [Tofu].

**Manufacturer's Name:** Jose Parracho Tofu.

**Manufacturer's Address:** Quinta da Portugesa, Fieguesia da Annuciada, Setubal, Portugal.

**Date of Introduction:** 1982 September.

**New Product–Documentation:** Soyfoods Center Computerized Mailing List. 1982. Sept. 17. Owner: Jose Parracho. Note: This way of writing the company name and address are probably correct.

**364. Product Name:** [Tofu].

**Manufacturer's Name:** Shogun Produtos Aliment.

**Manufacturer's Address:** R. Gen Joao de Almeida, 1300 Lisboa, Portugal. Phone: 644-868.

**Date of Introduction:** 1982 September.

**New Product–Documentation:** Soyfoods Center Computerized Mailing List. 1982. Sept. 17. Owner: Joaquim Reis & Francisco Varatojo.

**365. Product Name:** [Lecithin].

**Manufacturer's Name:** Oleaginosas Espanolas, S.A.

**Manufacturer's Address:** Nunez de Balboa, 108, Madrid-6, Spain.

**Date of Introduction:** 1982.

**New Product–Documentation:** Soy Bluebook. 1982. p. 59.

366. Dunn, John R.; Reynolds, B.J.; Eversull, E.E.; Skinner, R.A.; Thurston, S.K. 1982. Cooperative involvement and opportunities in oilseeds. *ACS Research Report* No. 13. v + 47 p. 28 cm. [28 ref]

• **Summary:** A very important and original report showing the relationship between all aspects of soybeans and other oilseed crops in the USA, and between cooperative and noncooperative soybean processors. Contents: Highlights and recommendations. Oilseed crop production: Soybeans, cottonseed, peanuts, flaxseed, sunflowerseed. Overview of cooperative oilseed system: Cooperative oilseed flows, cooperative organizational approaches, vertical integration by individual cooperatives, horizontal coordination by groups of cooperatives, vertical coordination by groups of cooperatives. Oilseed crushing: Soybeans, cottonseed, sunflowerseed / flaxseed, peanuts, potential new locations

for cooperative crushing, parts inventory for processing cooperatives. Processing plant output: Soybean plant output, cottonseed mill output. Processing plant costs: Soybean plant costs, cottonseed plant costs, economies of scale. Raw product marketing. Oilseed pricing mechanisms. Transportation of oilseeds and oilseed products: Cooperative control of transportation modes, transportation by cooperative soybean processors. Refining, product manufacturing, and marketing: Demand for vegetable oil products, vegetable oil refining, increasing cooperative refining activity, marketing of vegetable oil products, manufacturing and marketing meal products, cooperative brand name oilseed products, retail product quality assurance association. The export markets for U.S. oilseeds: Global demand for oilseeds, global oilseed processing, world oilseed trade flows. Cooperative involvement in oilseed exporting: cooperative export flows, level of cooperative involvement, considerations for expansion of cooperative exporting, advantages and risks for cooperatives in oilseed exporting, the need for unified cooperative export efforts. Challenges for oilseed cooperatives: Rail transportation, energy, growth, competitive pressures and the need for coordination. Selected oilseeds references. Appendix tables.

Tables related to soy: (1) Regional shares of U.S. regional soybean production; Averages for 1959-69, 1970-79, 1976-79. (6) Soybean crushing capacity; total cooperative and noncooperative. Cooperative share of crushing capacity, 1971-1979 crop years. (7) Number of soybean crushing mills, U.S. total, co-op, and non-coop. Average mill capacity; U.S., co-op and non-co-op, 1971-1979 crop years. (8) Soybean crushed, U.S. total, cooperative crush, nonco-op crush, cooperative share of total crush, 1971-1979 crop years. (9) Utilization of soybean crushing capacity; U.S. overall average, noncooperative average, 1971-1979 crop years.

(10) Soybean crushing capacity shares and cooperative shares of crushing capacity, by region, 1979. (11) Soybean crushing capacity and proportion of soybean production which may be crushed within each region, 1979. (12) Structural characteristics of the domestic soybean processing industry in terms of plant numbers and capacities, 1979. (16) Production of soybean oil and oil products by cooperatives, 1971-1979 crop years (Million pounds and percentage; Crude oil, degummed oil, lecithin and by-products, refined oil, hydrogenated oil). (17) Soybean meal production by cooperatives, 1971-1979 marketing years (Thousand tons and percentage; Total, high protein meal, low protein meal, mill feed production).

(20) Processing costs for cooperative soybean processing plants, 1971-1979, alternative years. (24) Soybean receiving methods by cooperative plants, 1971-1979 crop years (by rail, cooperative owned truck, other truck). (25) Soybean meal shipment methods by cooperative plants, 1971-1979 (by rail, co-op truck, other truck, barge).

(26) Soybean oil shipment methods by cooperative plants, 1971-1979 (by rail, truck, barge). (27) U.S. utilization of soybean oil, by products, by crop years, 1964-1979 (million lb): Shortening, salad and cooking oil, margarine, other edible, total food, total non-food, total domestic disappearance.

(30) Total and per capita consumption of fats and oils, food and industrial products, USA, 1963-1979 (million lb and per capita) (butter, lard, margarine, shortening, edible oils, all [oleaginous] food products, all industrial products, all products). (31) Margarine: Fats and oils used in manufacture, United States, 1965-1979 (incl. soybean, cottonseed, peanut, corn, coconut, safflower, other vegetable, lard, beef tallow). (32) Shortening: Fats and oils used in manufacture, United States, 1965-1979 (incl. soybean, cottonseed, peanut, etc.). (34) Selected oilseeds, vegetable oils, and oilseed cakes and meals: value of U.S. exports, annual 1973-1979. (35) Major U.S. oilseed and products exports, 1973-1979 (Soybeans, sunflowerseed, cottonseed, peanut). (36) Global soybean annual crushing capacities of major markets, 1979 (Soybean importing countries: Belgium & Luxembourg, Denmark, France, Italy, Netherlands, UK, West Germany, Spain, Poland, Yugoslavia, Soviet Union, Japan, Korea {Rep. of = South}, China {PRC}, Taiwan, Mexico, subtotal 42%. Soybean exporting countries: USA, Brazil, Argentina, subtotal 58%). (37) U.S. soybean exports by region or country of destination, 1973-1979.

(40) Volumes of soybeans handled by regional and interregional cooperatives and regional cooperative share of total farm soybean sales, 1972-1979 marketing years. (41) Soybean shipments to cooperative and noncooperative port elevators, 1973-1979. (42) Soybean shipments to ports by port area, by regional cooperatives, 1973-1979 (Atlantic, Gulf, Great Lakes, Pacific, total). (43) Percent of regional cooperatives' soybean sales shipped to port areas 1972-1979. (44) Cooperative port elevator capacities and share of total capacity, by port area, 1980.

Figures: (1) Bar chart: Oilseed production by commodity for selected years, 1959, 1969, 1979. (2) Map of oilseed production areas, USA, 1979. (3) Cooperative export channels for raw oilseeds. (4) Cooperative channels for oilseed products. (5) Cooperative coordination paths (Complete integration, vertical integration, single activity, intercooperative coordination). (6) Bar chart: Oilseed crush shares by commodity for selected years (1959, 1969, 1979). (7) Bar chart: Oilseed production percentage crushed domestically by commodity for selected years. (8) Map: Cooperative oilseed processing plants, 1979. (9) Soybean products. (10) Flow chart: Vegetable oil refining process. (11) Map: Edible fats and oils refining plants, with maximum capacity by region, 1975. Continued. Address: USDA Agricultural Cooperative Service (ACS). Phone: 202-475-4929.

367. Leneman, Leah. 1982. *Dieta vegetariana para adelgazar* [Slimming the vegetarian way]. Madrid, Spain: EDAF. 95 p. [Spa]\*

• **Summary:** This is the Spanish edition of *Slimming the Vegetarian Way*, first published in the United Kingdom in 1980. Address: 19 Leamington Terrace, Edinburgh EH10 4JP, Scotland.

368. Shurtleff, William; Aoyagi, Akiko. 1983. History of soybeans and soyfoods in Europe, including the USSR. Soyfoods Center, P.O. Box 234, Lafayette, CA 94549. 109 p. Jan. 21. Unpublished typescript. Available online at [www.soyinfocenter.com](http://www.soyinfocenter.com).

• **Summary:** A comprehensive history of the subject. Contents: Historical overview. History of soybeans and soyfoods: 1597 to 1960, 1960-1980's: Imports and tariffs, oil, meal and meat consumption increase, exports, 1973 embargo, new interest in soybean production, modern soy protein products (Munich 1973), soyfoods movement. Austria. Belgium-Luxembourg. Denmark. France. Germany. Greece. Ireland (including N. Ireland). Italy. Netherlands. Portugal. Spain. Sweden. Switzerland. United Kingdom (England, Scotland, Wales, N. Ireland). Eastern Europe. USSR. Address: Lafayette, California. Phone: 415-283-2991.

369. *Soyfoods*. 1983. Soyfoods mini-boom underway in Europe. Winter. p. 8-9.

• **Summary:** "This year we became aware that the kind of developments that took place in the U.S. in 1977-78 are now taking place in Europe with the sudden increase in the number of soyfoods companies," reports Bill Shurtleff of The Soyfoods Center. 'Historically speaking, this will probably be the most important event for the soyfoods industry in 1982. Europe is coming on strong and it's a tradition of soyfoods that goes back 130 years that is now being revived.'

"Most of the impetus for soyfoods in Europe apparently stems from the vigor of the macrobiotic community. Per Fruergaard started Tofu Denmark in Valby and has encountered legal problems regarding the use of nigari. In Paris, France, Bernard Storup purchased a Takai tofu system; Ab and Paulien Schaft are setting up a small plant in Baillestavy to make miso, shoyu, natto, and koji; in Ivry, Jean Luc Alonso's macrobiotic center, Traditions du Grain, prepares for tempeh production.

"In the British Isles, Paul Jones' Tofu Shop in London, England, has been active since 1981 while Community Health Foundation, also in London, promotes homescale tofu, tempeh, and misomaking. In Dublin, Ireland, Jane O'Brien gives tofu cooking classes, has published a tofu cookbook and is considering commercial production.

"The macrobiotic movement is strong in Belgium where de Brandnetel, a large Antwerp-based distributor of natural foods, operates a tofu shop in the rear of their retail store. Jonathan Company in Ekeren makes 3000 pounds of tofu



weekly, along with seitan, mochi, soups, canned foods, and soymilk. Seven Arrows in Leuven is another small tofu shop in operation in Belgium.

"In the Netherlands Manna was the first company to introduce soyfoods to the public and is now an important promoter. Manna's John Welters (who provided much of this information) lectures on homescale soy processing and reports interest and sales are rising as are the number of magazine articles on soyfoods. Manna itself markets tofu spreads and distributes a joint equipment price list with Takai Company of Japan. Witte Wonder in The Hague makes tofu, as does De Morgenstond in Bakkeveen, while Peter Dekker's Jakso produces tempeh. In Portugal, Unimave promotes soy as part of the macrobiotic diet and makes small amounts of tofu and soymilk; Jose Parracho in Setubal is starting a self-sufficient center involving tofu and tempeh production.

"In Soyen, West Germany, Wolfgang Furth-Kuby, who published *Das Tofu Buch* (by William Shurtleff) in German, is interested in tofu production at his Sojaquelle. Tofu producers are Swame [sic, Swami] Anand Svadesha in Furth-im-Wald, Thomas Kasas [sic, Karas] who installed a tofu system last summer at his Bittersuess [later Soyastern] in Cologne, and Alexander Nabben in Munich.

"In Sweden Tim Ohlund and Ted Nordquist have been operating Aros Sojaprodukter since early 1981 in Örsundsbro using a Takai pressure cooker system and vacuum packaging. In Rimini, Italy, Gilberto Bianchini makes tofu at Community Foods. And Switzerland is the home of four soy companies including Restaurant Sesam in Bern, an active macrobiotic center with homescale tofu and seitan production; Marty Halsey makes tofu in Nyon; Hans Opplinger produces tofu in Chan; and Verena Krieger operates Sojalade in Luzern (Lucerne).

"Sojalade, whose tofu output at mid-summer 1982 was 1000 pounds weekly, is a company launched mainly on the results of an article Ms. Krieger published ('Yesterday Steak, Tomorrow Tofu') in a Swiss Sunday magazine. Krieger then established her shop to meet the expected tofu demand stirred up by her article. Swiss national television ran a 30 minute feature on soybeans this year in which Krieger made a brief demonstration of 5 tofu dishes. 'Since then tofu has been a favorite child of the media,' she says, adding that tofu appeared in the pages of *Blick*, a mass market newspaper."

Photos show: (1) European representatives at the international Soyfoods Come West conference in Seattle, Washington: Gilberto Bianchini, Marina Casazza (Italy); Joanna White (Switzerland); Kym Olsen (England); Wolfgang Furth-Kuby (W. Germany); Tim Ohlund (Sweden); Roger Kayes (England). (2) Ted Nordquist and Tim Ohlund of Aros Sojaprodukter, Sweden's first tofu company.

370. Wilson, David E. 1983. Re: Soybeans in Europe, especially Spain. Letter to William Shurtleff at Soyfoods Center, April 23. 2 p. Typed, with signature on letterhead.

• **Summary:** EEC import taxes on soy oil are as follows: 10% on crude edible, 15% on refined edible, 5% on crude technical/industrial, 8% on refined technical. Special consideration is given to developing nations where the tax on crude technical is reduced to 2.5%

The main importers of crude Spanish soy oil in 1981 were (in tonnes = metric tons): Turkey 104,000, Tunisia 71,443, Morocco 70,749, Yugoslavia 41,000, Pakistan 12,600. The main importers of refined Spanish soy oil in 1981 were: Egypt 20,175, Turkey 19,101, France 6,698.

Soy oil imports to Western Europe dropped sharply starting in 1960 because of the development of a soybean crushing industry there.

The main food use of soya in Spain is as a meat extender. Legislation is pending for other uses. There is a reluctance to accept vegetable protein. Spain and Portugal will join the EEC after Jan. 1985. Address: American Soybean Assoc., Regional Director, Iberia, Africa & Middle East, Piquer #7, Madrid-33, Spain. Phone: 202 9142.

371. Arnoux, Maurice. 1983. 1981 [European soybean] breeders' meeting at Novi Sad (Yugoslavia) and Iregszemcse (Hungary). *Eurosoya* No. 1. p. 57-58.

• **Summary:** "This informal meeting was attended by soyabean breeders representing institutions from 9 countries in Southern Europe, cooperating in the FAO network."

"Doctors Bogdan Belic (Novi Sad) and Erno Kurnik (Iregszemcse) had prepared a comprehensive programme for the 4-day meeting. The participants were thus able to take the utmost advantage of the excellent organization of their meetings and visits, which, moreover, took place in a very cordial atmosphere.

The following people attended the meeting: Drs. Bogdan Belic (Yugoslavia). M. Hrustic (Yugoslavia). D. Jockovic (Yugoslavia). M. Vidic. (Yugoslavia). A. Fossati (Switzerland). F. Borrero (Spain). P. Parrini (Italy). A. Vidal (France). R. Ecochard (France). R. Szyrmer (Poland). J. Bohm (Federal Republic of Germany). S. Dencescu (Romania). E. Kurnik (Hungary). Address: France.

372. Borrero Fernandez, A. 1983. La soja en Espana [The soybean in Spain]. *Eurosoya* No. 1. p. 55. [Spa]

• **Summary:** Starting in 1969, interest in the cultivation of soybean in Spain began to intensify, independent of previous inaction without success. As a consequence of that, cultivation was introduced gradually, reaching 25,000 ha in the 1974 campaign. Address: INIA, Apartado de Correos No. 334, Sevilla, Spain.

373. Cejudo-Fernandez, Jeronimo. 1983. Futuro de la soja en Europa [The future of soya in Europe]. *Eurosoya* No. 1. p. 7-8. Presentation to FAO Consultation on the European Cooperative Network on Soybean, Seville, Spain, 5-8 Oct. 1982. [Spa]

• **Summary:** Spain, with more than 3 million tonnes of imports and subsequent consumption of corresponding flours, presents in this aspect a record which is difficult to surpass, close to 85 kg per inhabitant and a sustained growth of 65% during the last ten years.”

“With respect to Spain, during the years 1965 to 1980 the consumption of total protein per capita per day grew from 79 grams to 95 grams, an increase of 20%, but of these proteins, animal proteins increased from 29 grams to 53 grams, an increase of 83%.

“The consumption of meat increased from 25 kg per capita per year to 70 kg, an increase of 145%. That of eggs increased 60% and that of milk 70%. This signifies a substantial change in the dietary habits of the population, a change which brings us closer to the consumption level of the western countries but with a very different structure in regard to the types of meats consumed.”

“Two thirds of France’s meat consumption comes from beef and pork and only 14% from chicken. In Italy nearly 25% of meat consumption is in the form of chicken, making Italy, after Spain the country which consumes the most chicken.”

“In 1969 a commission was created to promote the cultivation of soybeans under the direction of Puerta Romero who at that time was already involved with the subject.”  
Address: Seville, Spain.

374. Jackobs, Joseph A.; Staggs, M.D.; Erickson, D.R. 1983. International soybean variety experiment: Seventh report of results, 1979. *INTSOY Series* No. 24. viii + 211 p. July. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following countries: Afghanistan, Algeria, Argentina, Bangladesh, Bolivia, Burma, Chile, China (Taiwan, ROC), Colombia, Cuba, Czechoslovakia, Ecuador, Egypt, Ethiopia, Fiji, French Guiana, Gambia, Ghana, Guatemala, Guinea, Iraq, Korea, Malawi, Malaysia, Mexico, Morocco, Nepal, Pakistan, Paraguay, Peru, Philippines, Portugal, Puerto Rico, Rwanda, Somalia, Sri Lanka, Sudan, Syria, Tahiti, Thailand, Turkey, United States, Zaire, Zambia, Zimbabwe.

Note: This document contains the 2nd earliest clear date seen for soybeans in Guinea, and the cultivation of soybeans in Guinea (1979, probably in May). Sixteen varieties were tested at Foulaya. CH-3 gave the highest yield, 2,690 kg/ha. The source of these soybeans was INTSOY (at the University of Illinois, USA) for ISVEX trials. Address: College of Agriculture, Univ. of Illinois, Urbana-Champaign.

375. *Soybean Update*. 1983. Portugal liberalizing soybean trade. Dec. 12.

• **Summary:** Portugal has recently decided to allow private imports of soybeans; Previously the Portuguese government has served as the sole importer. This will likely increase U.S. demand for soybeans, and will give Portugal’s processing

industry more access to the soybean market and lead to increased competitiveness within the crushing industry.

Portugal currently imports about 700,000 tonnes (metric tons) of soybeans. Estimates are that this figure could rise to 1 million tonnes with the liberalization of oilseed trading, which is scheduled to start in July 1984.

376. Hymowitz, T.; Harlan, J.R. 1983. Introduction of soybean to North America by Samuel Bowen in 1765. *Economic Botany* 37(4):371-79. Dec. [48 ref]

• **Summary:** The soybean, a domesticate of China, was first introduced to North America in 1765 by Samuel Bowen, a seaman employed by the East India Company, who brought soybeans to Savannah, The Colony of Georgia, from China via London. Bowen claimed that he was a prisoner in China for nearly 4 years (probably between 1759 and 1763) and was carried 2,000 miles from place to place through the interior of the country. In 1764 Bowen arrived in Savannah. On 30 March 1765 he married Miss Jeanie (Jane) Spencer, daughter of William Spencer, the Collector of Customs in Savannah. “This gained Samuel Bowen instant respectability.” On 14 May 1765 Bowen purchased a 450-acre tract of land at Thunderbolt, a few miles East of Savannah, from Grey Elliott. His plantation, named “Greenwich,” became the center of his farming and manufacturing enterprises. Bowen also purchased an 84-acre tract of land near this Thunderbolt property from John Mulryn; he called it Macas (Macao) Island.

In the spring of 1765 Bowen did not have land available to sow seeds. Therefore, he asked Henry Yonge, the Surveyor-General of Georgia, to plant soybean seed that he had brought from China. These were the earliest known soybeans grown in North America. From 1766 Mr. Bowen planted soybeans on his own plantation, Greenwich. From these soybeans, Bowen made soy sauce and soy-based vermicelli, which he patented in 1767 and was exporting to England by 1770. Table 1 (p. 377) shows exports of sago, soy sauce (in quart bottles), and vermicelli from Savannah, Georgia (1766-1775). He exported 162 quarts of soy sauce in 1770-1771, 60 quarts in 1772-1773, 36 quarts in 1773-1774, and 800 quarts (200 gallons) in 1774-1775. Bowen’s soy sauce was probably relished in London. In May 1774 he also exported peanuts, sesame seed, and saffron blossoms. Samuel Bowen traveled to London in 1766, returning to Savannah in November. “He must have had a triumphant welcome in Savannah and most certainly his status as an entrepreneur among his fellow Georgians increased, for Samuel Bowen was awarded a gold medal from the Society of Arts, Manufactures, and Commerce and received a present of 200 guineas from King George III.”

Note from Prof. Hymowitz. 2012. Dec. 26. “Bowen received 200 guineas from the King as a prize. Bowen was also involved in a 100 guinea transaction however it had nothing to do with the prize.”

It was the opinion of Dr. John Fothergill, the famous English physician and botanist, that the Society should award Mr. Bowen the gold medal based on tests conducted by the Society's agricultural committee. "Samuel Bowen was introduced to King George III by Lord Dartmouth, who was the president of the Board of Trade and a Lord of the Privy Council."

Bowen's exports probably ended or were drastically reduced by the Revolutionary War starting in early 1776. He made two more trips to England in 1769 (to Gosport) and 1774 (to Cowas). Bowen died in 1778, probably shortly before his will was probated on Sept. 12 of that year.

When and how did Samuel Bowen travel to China? On 8 Feb. 1758 he signed on as a seaman on the *Pitt*, headed for the East India Trading Company's factory in Canton, China. At 600 tons, the *Pitt* was the largest ship to sail from England to China since the first ship, the *London*, went to Macao in 1635. After a brief stop at Madras, India, the *Pitt* was accompanied by a two-masted tender, the *Success*, which assisted the *Pitt* through uncharted waters, until it arrived in Canton, China, on 16 April 1759. About two months later, on 13 June 1759, Bowen boarded the *Success*, which sailed north to Ningpo, then on to Tientsin. Also on board was James Flint, an employee of the East India company since 1736, and now the Company's Chinese interpreter. Mr. Flint left the *Success* at Tientsin on 29 July 1759 and returned to Canton via an overland route, arriving about 43 days later, on Sept. 10.

The voyage of the *Success* became a major international incident in both China and England, because the Emperor had prohibited foreigners from trading outside of Canton. James Flint was eventually imprisoned by the Chinese at Macao from Dec. 1759 to Nov. 1762, then banished from China forever by the Emperor Ch'ien-lung. The *Success* was never heard of again. Bowen claimed that he was a prisoner in China for nearly four years and that he was carried 2,000 miles in the interior of China. Bowen returned to London in late 1763. On 10 Nov. 1763 he received £28 and 11d for his services on board the *Pitt*. But six days later, on Nov. 16, he petitioned the Court of Directors of the East India Company to redress a grievance concerning his wages and imprisonment in China. The court ordered that he be paid £19 and 10d more. In total, from 1748 to 1864, Bowen earned about £80 in wages as a seaman for the East India Company from 1758-1764. By contrast, James Flint earned a minimum of £8,500 from 1760-1766. Of Flint's total, £6,500 was in commissions as a supercargo and £2,000 was for the hardships he underwent (primarily imprisonment for almost 3 years) and future opportunities missed because of banishment.

The second soybean introduction to North America was by Benjamin Franklin. In 1770 he sent seeds from London to the botanist John Bartram in Philadelphia, Pennsylvania. This was 5 years after Samuel Bowen's introduction.

Bowen was interested in making a starch powder to substitute for sago power, which he found so widely used in China. He wrote on 17 Sept. 1766 that in Georgia he had found the vegetable that produced this powder. However Dossie (1768-1771) reveals that Bowen used the root of a vegetable to make a substitute for sago powder, and Bonner (1964) concludes that the sago substitute was made from sweet potatoes [*Ipomoea batatas*].

Note 1. Maps of the area show that Savannah and Thunderbolt are in northwestern Georgia, very near the southern tip of South Carolina and quite near the Atlantic Ocean. Yonge (pronounced Young) probably grew America's first soybeans on Skidaway Island (Hymowitz, pers. comm., 27 May 1989). This island is located about 10 miles southeast of Thunderbolt (which is 8 miles southeast of the center of present-day Savannah), on the coast of the Atlantic Ocean in Georgia, at the confluence of 3 rivers. Both Skidaway Island and Thunderbolt are in Savannah's "coastal low-country area." The Wilmington River runs along the northern side of both Thunderbolt and Skidaway Island. In 1765 and 1766 Skidaway Island and Thunderbolt were both located in Christ Church Parish, Colony of Georgia. The first counties in Georgia were created in 1777; at that time Christ Church Parish became part of Chatham County.

Note 2. This document contains the earliest date seen for soybeans in Georgia, or the thirteen colonies (which later became the United States of America), or the cultivation of soybeans in Georgia, or the USA (spring 1765). Address: Dep. of Agronomy, Univ. of Illinois, Urbana-Champaign, Urbana, Illinois.

377. EUVEPRO. 1983. Vegetable proteins survey of legislation in European countries. Brussels, Belgium. 47 p. 30 cm.

• **Summary:** Contents: Preface. EEC Countries: Belgium, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Ireland, United Kingdom. Other European countries: Austria, Finland, Norway, Portugal, Spain, Sweden, Switzerland. Summary of vegetable protein legislation in European countries (chart).

About 3 pages (range 1-6) are devoted to the legislation in each country. The United Kingdom (6 p.) has the following typical contents: General. Meat products. Cured meats. Spreadable products. Bread. Bakery and confectionery products. Dietetic foods, baby foods. Fish products (see also Spreadable products). Dairy products. Pasta products. Soups and sauces. Novel protein foods ("There is an 'in principle' agreement to nutritional equivalence for vegetable protein foods which simulate meat"). Address: 19, rue de l'Orme, B-1040 Brussels, [Belgium].

378. **Product Name:** [Lecithin].

**Manufacturer's Name:** Kelsa S.A.



**Manufacturer's Address:** El Burgo, La Coruna, Spain.

**Date of Introduction:** 1983.

**New Product–Documentation:** Soya Bluebook. 1983. p. 59.

379. *USDA Plant Inventory*. 1983. Plant material introduced January 1 to June 30, 1980 (Nos. 436991 to 443013). No. 188, Part I. 529 p.

• **Summary:** Soybean introductions: *Glycine max* (L.) Merrill. Fabaceae.

“Donated by Dr. N.I. Korsakov, Division of Grain Legume Crops, N.I. Vavilov Institute of Plant Industry, Leningrad, Soviet Union.” All these varieties are designated “VIR” (Vavilov Inst.).

437069-437085. Amur Region and Far East

437124-437128. Gurijscaja and Imeretinscaja, Georgian SSR.

437129A-B. Irkutsk Region (Oblast) of Russia.

437130-437134. Gibril ASS, Kazakh SSR.

437135-437148. Khabarovsk Province, USSR [on right bank of Amur River]

47149-437171. Krasnodar Province, USSR.

437172-437175. Kuybyshev Region, USSR.

437176-437178. Latvian SSR.

437179-437188. Lithuanian SSR.

437189-437303. Bel'tscaja, Bessarabea, Biruintsa, Brynzenscaja, Corichevava, CSchi, Dobruzanca, Errj, Moldavscaja, Rajner, Scorospelca, Staroucrainea, Vengerca nizcaja, Vysocoroslaja, Moldavian SSR.

437304. Moscow Region. 437305-437312. North Osetian [Ossetian] ASSR (An autonomous republic in the southeastern Russian SFSR on the north slopes of the Central Caucasus Mountains, bounded on the north by Stavropol Kray; Renamed Alania in 1991; capital Vladikavkaz).

437313-437315. Novosibirsk Region, USSR.

437316-437520. Primorsky Province, USSR [Maritime Province in Russian Far East, bordering on Sea of Japan, China and North Korea. Administrative center and soybean port: Vladivostok].

437521. Stavropol Province, USSR.

437522. Tshuvashskaja ASSR.

437523-437524. Turkmen SSR.

437525-437549. Ukrainian SSR.

437550. Uzbek SSR (later Uzbekistan).

437551-437552. Voronezh Region, USSR.

437553-437813. Peoples Republic of China.

437814-438273. China, Northeast [formerly Manchuria] incl. Charbin [Harbin], Elita, Manczurscaja.

438274-438295. Japan (many named varieties).

438296-438309. South Korea (Republic of Korea).

438310-438312. North Korea.

438312-438341. Algeria.

438342. Argentina.

438343-438513. Australia, Bulgaria, Canada,

Czechoslovakia, France, West Germany, East Germany, Hungary, India, Indonesia, Israel, Italy, Morocco, Nepal, Netherlands, Poland, Portugal, Romania, Sweden (13 Fiskeby varieties), United States (26 named varieties), Yugoslavia.

440913. Wild soybean from China. “Donated by Kirin Academy of Agricultural Sciences, Kungchuling, Kirin Province. Received through W.O. Scott, Dep. of Agronomy, Univ. of Illinois, Urbana. Received March 1980. Collected 1979.

440927-440943. *Glycine canescens* F.J. Herman. From Australia. “Donated (but not collected) by T. Hymowitz, Dep. of Agronomy, Univ. of Illinois, Urbana. Received Aug. 1979.

440944-440974. *Glycine clandestina* Wendl. From Australia. Donated by T. Hymowitz.

440975. *Glycine falcata* Benth. From Australia. Donated by T. Hymowitz.

440976-440977. *Glycine latrobeana* (Meissn.) Benth. From Australia. Donated by T. Hymowitz.

440978-440980. *Glycine latifolia* (Benth.) Newell & Hymowitz. From Australia. Donated by T. Hymowitz.

440981. *Glycine tabacina* (Labill.) Benth. From Fiji. Donated by T. Hymowitz. Collected 1930. Sigatoka, Viti Levu, Fiji. Collected by Greenwood. Wild.

440982-440997. *Glycine tabacina* (Labill.) Benth. From Australia. Donated by T. Hymowitz.

440998-441011. *Glycine tomentella* Hayata. From Australia. Donated by T. Hymowitz.

441012-441013. *Glycine tomentella* Hayata. From China. Donated by T. Hymowitz.

441339-441383. *Glycine max* (L.) Merr. Soybean. From Indonesia (East Java, Central Java, West Nuca Tenggara [West Nusa Tenggara, incl. Lombok and Sumbawa islands, in eastern Indonesia]). Donated by S. Djojoderdjo and Soebekti, Univ. of Gadjah Mada, Jogjakarta [Yogyakarta].

442003-442004. From China, Peoples Republic of. Donated by Institute of Crop Breeding and Cultivation, Chinese Academy of Agricultural Science, Beijing. Received through G. Liang, Dep. of Agronomy, Kansas State Univ. [Manhattan, Kansas], March 1980.

442005-442021. From South Korea. “Donated by Applied Genetics Laboratory, Korea Atomic Energy Research Inst., Seoul Received through R. Loiselle, Plant Gene Resources of Canada, Ottawa.

442022-442045. *Glycine max* (L.) Merr. Soybean. From Poland. “Donated by Plant Breeding and Acclimatization Inst., Radzikow / Warszawy. Some also from the Soviet Union and Yugoslavia.

442834. *Glycine max* (L.) Merr. Soybean. From China, Peoples Republic of. “Donated by T.C. Tso, Tobacco Laboratory, USDA, Beltsville, Maryland.” Collected from a market near Quilin, Kwansi Province.

Note: In Part II: 445842-445849. From. Thomas A.

Lumpkin, Zhejiang Academy of Agricultural Sciences, Hangzhoe, Zhejiang, China. Address: Washington, DC.

380. Jackobs, Joseph A.; Smyth, C.A.; Erickson, D.R. 1984. International soybean variety experiment: Eighth report of results, 1980-1981. *INTSOY Series* No. 26. xi + 234 p. Feb. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following regions and countries: (For the years 1980/1981): Algeria, Argentina, Azores, Bangladesh, Bhutan, Bolivia, Brazil, Brunei, Burundi, Cameroon, Chile, China [actually AVRDC, Shanhua, Taiwan], Colombia, Costa Rica, Czechoslovakia, Ecuador, Egypt, Ethiopia, Fiji Islands, French Guiana, Gabon, Ghana, Guatemala, Guinea-Bissau, India, Indonesia, Iraq, Korea, Lesotho, Liberia, Libya, Madagascar, Malaysia, Mali, Mauritius, Mexico, Morocco, Mozambique, Nepal, New Caledonia, Pakistan, Panama, Paraguay, Peru, Philippines, Portugal, Puerto Rico, Rwanda, Saudi Arabia, Somalia, Sri Lanka, Sudan, Surinam, Tanzania, Thailand, Turkey, United States, Upper Volta, Uruguay, Vietnam, Zaire, Zambia, Zimbabwe.

(For the year 1979): Belize, Pakistan, Turkey, Vietnam.

Note 1. This is the earliest document seen (Aug. 2009) concerning soybeans in Guinea-Bissau, or the cultivation of soybeans in Guinea-Bissau.

This document contains the earliest date seen for soybeans in Guinea-Bissau, or the cultivation of soybeans in Guinea-Bissau (21 May 1981). Sixteen varieties were tested at Granja Prabris, Bissau. ICA Tunia gave the highest yield, 1,225 kg/ha.

Note 2: This document contains the 2nd earliest date seen (May 2010) for the cultivation of soybeans in Brunei (19 May 1981). Sixteen varieties were tested at Biray Research Station by cooperator W.T.H. Peregrine. UFV-1 gave the highest yield, 2,577 kg/ha.

Note 3: This is the earliest document seen (Feb. 2006) that describes soybean variety trials in Bhutan. On 30 April 1980 sixteen varieties were planted under the supervision of Mr. Heinz Burgin at the Rural Development Project Demonstration Farm, Bumthang, Bhutan. DeSoto gave the highest yield, 729 kg/ha. The source of all these soybeans was INTSOY for ISVEX trials.

381. Halter, Fran. 1984. A committed tofu true-believer spreads the word about the curd. *Gazette (The) (Quebec)*. March 5. [Eng]

• **Summary:** Norbert Argiles, age 43, of Unisoya in Quebec “is philosophically dedicated to placing tofu in every household refrigerator.” A native of Catalonia, a region in Spain, he has been preaching the nutritive value of tofu since the 1960s. “In 1978, Argiles decided to quit talking and start acting on the value of the high-protein food. He left a job in quality control at a major Montreal aircraft-engine manufacturer and invested a total of \$7,000 to open the first

Quebec-based business to produce tofu on a large scale.

“‘When I first started, I used to go to stores and people looked at me like I was selling moon rocks,’ said the 43-year-old businessman... ‘But patience and a strenuous sales effort have convinced them of the value of tofu.’”

“Unisoya Inc.’s plant, nestled in the picturesque Laurentian community of Prevost, 75 kilometers north of Montreal, is a converted warehouse and the simple executive office is housed in a trailer.” To finance his fledgling operation, Argiles sold granola bars and unsweetened canned fruit on the side. “Unisoya is now producing an average of 5,000 pounds of tofu a week, up from 200 pounds a week at the start of the operation five years ago. The tofu wholesales at \$1 a pound in 15-pound pails, or slightly more in prepackaged pound blocks.

“Sales for fiscal 1983 ended May 31 were \$200,000. Argiles projects that the figure will increase 30 to 60 per cent in fiscal 1984 as Unisoya develops new markets in the province and begins to sell to a major grocery chain with stores across Quebec... Argiles estimates Unisoya’s market share might be as high as 40 per cent, but competition from several new Quebec tofu producers, which have recently entered the market, has left him with little profit... Argiles spent \$15,000 last year to promote tofu and said he hopes that once he makes ‘a breakthrough’ in public awareness, tofu will become a dietary staple.”

Each week Argiles uses 3,500 lb of locally grown soybeans that have not been treated with chemicals. His water comes from a well drilled below his tofu factory. Address: Canada.

**382. Product Name:** [Rice Koji].

**Foreign Name:** Koji.

**Manufacturer’s Name:** Miso Produções.

**Manufacturer’s Address:** Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

**Date of Introduction:** 1984 March.

**Ingredients:** Rice.

**Wt/Vol., Packaging, Price:** 500 gm.

**New Product–Documentation:** Letter from Miguel Azguime, owner. 1989. Oct. 31. The rice koji is sold in bulk or in 500 gm plastic bags. From it they make amazake and miso. Labels. 1989, received. 1.75 inches square. Black on white.

**383. Product Name:** [Tofu].

**Foreign Name:** Tofu (Proteína Vegetal de Soja) or Requeson de Soja.

**Manufacturer’s Name:** Zuaizto.

**Manufacturer’s Address:** Calle Diputación 5\* Piso, Calle Correría 39 Bajo, 01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.

**Date of Introduction:** 1984 March.

**Ingredients:** Spanish-grown soybeans [habas de soja],





water, and magnesium from the sea [magnesio marino].

**New Product—Documentation:** Dear clients. 1985. May 1. Letter from Zuaizto to clients introducing tofu and seitan. Soya Bluebook. 1985. p. 83, 101. Letter from Javier Arocena on letterhead. 1986. Sept. 10. "I've been working in the last four years making tofu, seitan, and tempeh, in a craftsman way, in the north of Spain, in the Basque country." Label. 1984, undated. 4.75 by 2.5 inches. Self adhesive. Green, yellow, and black on white. Illustration of birds over a soybean field, decorations like vines climbing a tree. "Free of toxins, saturated fats, cholesterol, preservatives, and colorings. Loaded with all the essential amino acids, minerals, and vitamins." Label No. 2. 1987, undated. 3 by 4 inches. Self adhesive. Light green on white. "Tofu. Proteina Vegetal a Base de Soja." How to make tofu at home. 2 pages, with 8 photos. Leaflet. Tofu. A traditional food for the future. 3 panels with 3 recipes.

Letter from Javier Arocena. "I started to work with soy in 1982 on a family scale and in 1984 on an industrial level. I started to sell tofu and seitan in March 1984."

Letter from Javier Arocena. 1992. Dec. 14. In June 1988, his company moved to Plaza Santa Maria, 2-1.º Izda., 01001 Vitoria-Gasteiz.

Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. Zuaizto Proteinas Vegetales. Owner: Javier Arocena Aramburu. Director: José Ignacio Orlando. C/Uritiasolo, 9, E-01006 Vitoria-Gasteiz. No tours. Soybeans from Brazil via importer in Rotterdam (Netherlands). Buys 600,000 tons. Variety Monarca which gets him 1.6 kg of tofu per kg of soybeans. Production plant covers 300 square meters.

2004 Jan. Dawn Toscano update: Javier is now a major "stock holder." Jose's cell phone: 605-729-857, home +34 945 40 3085.

384. *Soybean Update*. 1984. Spain, Portugal steady markets, Africa opening up. April 9.

• **Summary:** David Wilson, market development director for

the mid-East, the Iberian Peninsula and Africa, notes that "tremendous" growth potential exists in some African countries, most notably the North African countries of Algeria, Tunisia, Egypt, and Morocco, says Wilson.

"Spanish purchases of U.S. beans have remained around 3 million tonnes, not far from the record of 3.2-3.3 million. The Portuguese market has held steady at around 600,000-700,000 tonnes.

"Wilson points to Algeria, with a population of around 50 million people, as one of the most promising new markets for the U.S."

385. Traeger, Fred W. 1984. Spain: U.S. share of soybean meal market slipping. *Foreign Agriculture*. April. p. 23.

• **Summary:** Last season both Spain's imports and exports of soybean meal were at an all-time high. A large proportion of Spain's imports were Brazilian pellets, which were bagged in Spain and re-exported, chiefly to Mediterranean countries. The U.S. share of Spain's soybean meal market declined to a low of 9% in 1982/83. The strong U.S. dollar and stiff Brazilian competition are likely to continue to hamper sales. Address: Agricultural Counselor, Madrid.

386. Cunningham, Isabel S. 1984. Frank N. Meyer: Plant hunter in Asia. Ames, Iowa: Iowa State University Press. xviii + 317 p. Illust. (31 black-and-white photos). General index. Taxonomic index. 24 cm. [70 ref]

• **Summary:** An extremely well researched and well written book about America's greatest and most colorful plant explorer, who introduced many soybean varieties to the USA. These include: PI 19184 and PI 19186, both received by the USDA in Aug. 1906.

Contents: Maps. Preface. Acknowledgments. Setting the stage: 1. The past is prologue. 2. In the beginning. 3. Rendezvous with destiny. The first expedition: 4. Stranger in China. 5. The first winter. 6. Journey to the north. 7. The journey continued. 8. Assignment to the Wu Tai Shan. 9. The riches of Shantung (Shandong). 10. A harvest for America. 11. A plant explorer at home. The second expedition: 12. Europe revisited. 13. Bridge to Asia. 14. Delay and frustration. 15. Privation and postponement. 16. The Tien Shan. 17. The Altai Mountains. 18. The alfalfa project. 19. The Volga to the Potomac. 20. Interlude in America. The third expedition: 21. Peking (Beijing) via Siberia. 22. A delayed journey. 23. The long march begins. 24. The border of Tibet (*Xizang*). 25. Lanchow (*Lanzhou*) and return. 26. Departure via Chekiang (*Zhejiang*). 27. Home by a southern route. The fourth expedition: 28. Peking (Beijing) via Japan.



29. *Terra sancta*. 30. The wild pears. 31. Impasse in Ichang (I-ch'ang or Yichang). Journey's end: 32. Aftermath. 33. His contemporaries speak. 34. Meyer's legacy today. 35. Envoi. Appendixes: A. Meyer's plant introductions. B. Meyer germplasm available today. C. Recipients of the Meyer Medal. Notes. Bibliography.

"Ever since Marco Polo's return from fabled Cathay [in 1295] Westerners had longed for the horticultural treasures of China, where earth's richest flora had survived untouched by the Third Ice Age that had covered much of Europe and North America. The Chinese government, however, had limited foreigners for centuries to the open ports of Canton and Macao. After the Opium Wars of the 1840s resulted in greater privileges for Westerners, Robert Fortune, a Scottish plant hunter, spent nineteen years near the treaty ports, occasionally managing to travel two hundred miles into the interior disguised as a Chinese beggar with shaved head and pigtail. Later, amateurs like the French missionary-botanist Father Armand David and the Irish consular official Dr. Augustine Henry collected dried herbarium specimens of many new plants, revealing the richness and variety of China's flora" (p. 6).

At the beginning of the 20th century, a new window of opportunity opened for plant explorers in China. The crushing defeat of the Boxer uprising and the Chinese government in 1901 by the European powers, gave these powers a chance to extend their influence. Plant hunters could finally travel with a fair degree of safety into western China. In 1899 Veitch and Sons, a famous English nursery firm, sent a young collector named Ernest H. Wilson to find the ornamentals described by Father David. Wilson collected seeds of three hundred species, nine hundred pressed specimen, and thirty-five Wardian cases of living plants before he returned to England in 1902. Realizing that agricultural exploration would yield equally great rewards, David Fairchild, head of the infant Foreign Seed and Plant Introduction Section of the USDA, eagerly anticipated sending an explorer to China. But first he needed to find the right man to search vast areas, identify useful plants, and transport them to America.

"In 1889 Beverly T. Galloway, head of the Division of Plant Pathology of the USDA, had brought nineteen-year-old David Fairchild to Washington to join five plant pathologists who were working in attic rooms of the old red brick department building. Galloway's Wisconsin classmate, P. Howard Dorsett, soon joined the group. A little later, Fairchild's Kansas State classmate, shy and scholarly Walter T. Swingle, arrived with his growing library of agricultural references in five or six languages. Seeking an opportunity to learn about the flora of foreign countries, Fairchild accepted a Smithsonian fellowship to study in Europe. Aboard ship he met Barbour Lathrop, a well-to-do gentleman who later took him on an extended tour of the Pacific and showed him fruits, grains, and ornamental plants that could be valuable in

America. Returning to Washington in 1897, David Fairchild knew exactly what he wanted to do with his life.

"With the help of W.T. Swingle, he conceived a plan to divert twenty thousand dollars of the funds appropriated for the wasteful Congressional Seed Distribution Service in order to finance a section for the specific purpose of introducing new and useful crops into the United States. He enthusiastically presented this idea to the secretary of agriculture, James Wilson, who approved the plan and asked him to organize the new section. Housed on the fifth floor under the eaves of the old Department of Agriculture building and staffed by one teenage secretary, the Foreign Seed and Plant Introduction Section became a reality when Congress passed the revised appropriation bill in July, 1898."

"Though David Fairchild traveled for the next several years as a special agent of the Foreign Seed and Plant Introduction Section, he never forgot his hope of sending a long-term plant explorer to China. In England he visited Augustine Henry to try to persuade that distinguished amateur botanist to return to Asia as a collector for the Department of Agriculture. Though Dr. Henry declined Fairchild's offer, his enthusiastic account of the unexplored fertile plains and useful plants of the western Chinese provinces made a deep impression on David Fairchild.

"He returned to Washington in 1903, determined to initiate agricultural exploration in the Orient. By this time the Foreign Seed and Plant Introduction Section had become a part of the Bureau of Plant Industry directed by Beverly T. Galloway. Galloway agreed that the collector Fairchild sought must be a good botanist who could recognize those plants that were both new and useful; a practical gardener who could gather and transport live material—scions and cuttings as well as seeds; and a man of great endurance who could tolerate all sorts of physical discomforts and walk thousands of miles where no roads existed. Choosing a plant hunter who combined these qualifications became Fairchild's chief concern" (p. 7-8).

In June 1904 Fairchild "began a series of visits to experiment stations and individual correspondents who were testing plants being introduced by the USDA. In Boston [Massachusetts], he called on Charles Sprague Sargent, the director of Harvard's world-famous Arnold Arboretum. Though these two men devoted their lives to related goals, their personalities offered a sharp contrast. Sargent, a Bostonian of ample means, assured social position, and established reputation, was strong-willed and often sarcastic, while the younger man from the Kansas prairies attracted friends everywhere because of his diplomacy and enthusiasm. Sargent mentioned that he was negotiating for the services of E.H. Wilson, who was making his second journey to the Orient for Veitch and Sons. Because of the rivalry that was developing between these two leaders in American plant exploration, this information spurred Fairchild's desire to send a collector to China" (p. 8).

When Fairchild returned to Washington, DC, in October 1904, he had still not met or even heard of Frank N. Meyer. Meyer had arrived in Washington, DC, on 20 Aug. 1901 with a letter of introduction from Hugo de Vries to Erwin F. Smith. Smith found Meyer a modest job as a gardener in the USDA greenhouses in Washington, DC.; here Meyer worked for about 10 months—from 23 Oct. 1901 to 31 Aug. 1902. Then resigned, left Washington, DC, and for the next 4 years he traveled to Mexico and across the USA, stopping to work for the USDA in various places.

For some time, Adrian J. Pieters, who had befriended Meyer and was also of Dutch extraction, and who had directed the Foreign Seed and Plant introduction office during the last months of Fairchild's travels abroad, had been thinking of recommending Meyer to Fairchild as the man Fairchild sought. Eventually Pieters made his recommendation. Similar strong recommendations came to Fairchild from Erwin Smith, Galloway, and George Oliver, Meyer's supervisor in the greenhouses. "In March [1905] Fairchild asked Pieters to wire Frank Meyer to ask whether he would be interested in going to China as an agricultural explorer. At last Fairchild had made his decision; time would test the wisdom of his choice" (p. 9).

In Sept. 1905: "En route by sea to Tientsin [Tianjin], at Chefoo (Yantai) Meyer called on Dr. Yamei Kin and Mrs. John L. Nevius, the widow of a medical missionary who had introduced Western fruit trees there. These ladies, friends of David Fairchild, shared their considerable knowledge of the flora of northern China and showed Meyer several fine gardens. They also invited him 'to take many a cup of tea' and to eat a typical Chinese dinner" (p. 32).

"Fairchild (p. 108) requested twelve more tins of the roasted soybean coffee. He had served it to Mrs. Fairchild and Mrs. Bell without their realizing that it was not 'the ordinary coffee used by our family.'"

Talk with Isabel Cunningham. 1998. Aug. 1. Much of the story of how Fairchild and Meyer met is told in Fairchild's superb book, *The World Was My Garden* (1938). See p. 315 etc. Address: 212 Wardour Dr., Annapolis, Maryland 21401. Phone: 301-268-2384.

387. Gregg, N. Taylor. 1984. Hagi: Where Japan's revolution began. *National Geographic* 165(6):750-72. June.

• **Summary:** The story of the how and why the Meiji Reformation began, in order to meet the challenge of Commodore Matthew C. Perry and the West while holding fast to revered tradition. One hero of the story is Shoin Yoshida who, as a young samurai had asked Commodore Perry in 1854 to take him to America. He was convinced that Japan needed to study Western technology to survive. Perry refused and, following the course of honor, he turned himself in and was imprisoned. On 21 Nov. 1859, at age 29, he was executed by the shogun. One feudal domain, the *han* of Choshu, one town, Hagi, and one school, Yoshida's Shoka

Sonjoku, were always near the center of the struggle to restore the emperor to power and topple the inept Tokugawa shogunate.

Inserted in this issue is a superb 4-page chronology of Japan titled "Historical Japan." On the other side is an equally fine map of Japan, extensively annotated with key events.

1543—The first Europeans known to have set foot on Japan were three Portuguese shipwrecked on Tanega Shima (located a little southeast of the southern tip of Kyushu). Western commerce, guns, and Christianity arrive with Portuguese traders.

1549—A Jesuit mission headed by St. Francis Xavier landed at Kagoshima and was given permission to preach. By 1614 Christian missionaries could claim 300,000 followers throughout Japan.

1639-1854—Nagasaki, in southwestern Kyushu, was a Christian stronghold and the only port that allowed foreigners—Dutch and Chinese traders. Address: National Geographic Illustrations Staff.

388. Higgins, Holly S. 1984. Soybean exports to Spain-Portugal spell stiffer product competition. *Foreign Agriculture*. Aug. p. 19-21.

• **Summary:** "U.S. soybean exports to Spain and Portugal have grown steadily in recent years, but U.S. exporters of soybean products—meal and oil—are now facing stiffer competition from these countries—primarily because of policy changes to aid domestic producers.

"Spanish and Portuguese production of soybean meal and oil now exceeds domestic requirements and the surplus is being exported to the world market.

"However, despite efforts to boost domestic production of oilseed crops, both Spain and Portugal continue to depend on imported soybeans to meet their feed requirements.

"Drought conditions reduced production of domestic oilseeds in 1983—notably sunflowerseed—in both countries. Yet over the past few years, increased oilseed crushings for livestock and poultry feed have produced a surplus of vegetable oil and, more recently, protein meal.

"This excess production led to the policy changes as farm officials in Spain and Portugal attempt to protect domestic olive oil and oilseed producers.

"Spain has emerged as the world's third largest exporter of soybean oil, behind the United States and Brazil. Portugal, with its own protectionist policies, has made a similar shift, and in 1982, it became an exporter of soybean meal.

"U.S. Processors' Group Files Petition: In response to the protectionist measures in both countries, the National Soybean Processors' Association (NSPA) in April 1983 filed a petition with the office of the U.S. Trade Representative (USTR) under Section 301 of the Trade Act of 1974, alleging that Spain and Portugal maintain policies which burden and restrict U.S. trade in soybean products.

"In May 1983, the USTR accepted portions of the NSPA petition and a public hearing was held in June to consider trade issues. Bilateral consultations under GATT Article XXII were held in Spain and Portugal in late 1983. Based on these talks, further information exchanges and consultations should take place shortly. U.S. exports to Spain of oilseeds and products, consisting mostly of soybeans and soybean meal, were valued at \$549 million in 1983, compared with \$721 million in 1982. Those to Portugal totaled \$222 million in 1983 versus \$177 million the year earlier, with the major products being soybeans and sunflowerseed.

"A closer look at the oilseed sector in these two countries follows:

"Spain—Olive oil is Spain's traditional vegetable oil for domestic consumers. Because yields normally fluctuate as much as 25 percent from year to year, the government's policy has concentrated on protecting Spain's olive oil producers through price supports, direct subsidies and tax rebates on exports.

However, as the Spanish livestock and broiler industries expanded over the years, large amounts of competing vegetable oils came onto the Spanish market as byproducts of oilseeds crushed for protein meals.

"Domestic Expansion in Sun Oil Output: In addition to increased soybean oil production from imported soybeans—mostly from the United States, Spain's efforts to promote alternate oilseed crops resulted in a dramatic increase in sunflowerseed oil production. Rapidly expanding demand and the emergence of cheaper vegetable oils on the Spanish market led to a relative decline in olive oil consumption.

"The government's traditional policy of protecting olive oil producers needed revamping to keep olive oil consumption at high levels.

"Soybean Oil Consumption Limited by Quota System: Spain established a domestic marketing quota in 1976 to restrict the consumption of soybean oil. Originally set at about 240,000 tons, the quota has been progressively reduced to the current level of 90,000 tons. These marketing quotas are announced each autumn after taking into account estimated olive oil and sunflowerseed oil production and consumption levels. Any residual vegetable oil requirements are allocated to soybean oil. Although marketing quotas have reduced Spain's consumption of soybean oil, total vegetable oil consumption has increased substantially. Meanwhile, both sunflowerseed oil and olive oil have benefited. The share of the traditional staple, olive oil, rebounded to 44 percent in 1982/83 while that for the relative newcomer, sun oil, rose to 33 percent. Together, these two oils are expected to account for more than 80 percent of Spanish vegetable oil consumption in 1983/84.

"Spain Continues To Export Soybean Oil: Because soybean oil in excess of the marketing quota must be exported, Spain's soybean oil exports have risen dramatically over the past 10 years. They averaged only about 60,000 tons

annually in the early 1970s before peaking at 478,000 tons in 1981/82.

"Spanish soybean oil exports are expected to decline for the second straight time this year to 390,000 tons. But, they still benefit from tax rebates and preferential export financing schemes designed to enhance Spain's competitiveness on the world market. Spanish oil competes with the U.S. counterpart in such markets as Morocco, Tunisia and Yugoslavia.

"Oilseed Policies Avoided in EC Accession Talks:

"This past February, officials of the European Community (EC) presented Spanish negotiators with a declaration on agriculture outlining the EC position on Spanish membership. However, they avoided any proposals on vegetable oils and oilseeds, which are to be discussed at some future date.

"Spain's current domestic oilseed policy of extensive subsidies, taxes and quotas is a major issue yet to be worked out in accordance with the EC's Common Agricultural Policy (CAP). Plans call for negotiations to be completed in 1984, with Spain's accession to take place in January 1986.

"Portugal—The most significant development in Portugal's oilseed industry in recent years has been the growth of a government-supported crushing industry.

"Given negligible local production of oilseeds, imports of soybeans (chiefly from the United States) and sunflowerseed have increased. At the same time, imports of protein meal for feed purposes have fallen dramatically.

"Procurement and price policies, as implemented by the government oilseed monopoly IAPO (The Olive and Oilseed Institute), have brought about these changes, which made Portugal self-sufficient in protein meals and a surplus Producer of vegetable oils in 1983.

"To keep vegetable oil stocks at reasonable levels and to help olive oil producers, the Portuguese government controls the vegetable oil market through domestic pricing programs that ensure healthy margins for the crushing industry.

"Oilseed Production Off; Imports Up: Drought conditions in the major sunflowerseed producing areas have cut Portugal's oilseed production forecast nearly in half for 1983/84. However, domestic output of sunflowerseed and safflowerseed represents less than 2 percent of Portugal's annual oilseed crushing needs.

"The country's rapidly expanding crushing capacity pushed total oilseed imports, especially soybeans, to a record high in 1982/83, with soybean imports peaking at 638,000 tons. Imports are forecast to decline in 1983/84 to 600,000 tons due to reduced world supply as well as Portugal's economic recession and foreign exchange problems.

"The United States has always been a major supplier of soybeans to Portugal.

"In 1981/82, roughly 97 percent of Portugal's soybeans came from the United States. Because of a strong dollar and reduced Commodity Credit Corporation (CCC) credit



guarantees, the U.S. soybean share is projected to fall slightly in 1983/84.

“Excess of Meal and Oil: Portuguese imports of protein meal are projected at only 40,000 tons in 1983/84, down 75 percent from 1980/81.” Address: Oilseeds and Products Div., FAS. Phone: 202-447-6234.

389. *SoyaScan Notes*. 1984. Early tofu manufacturers in Europe, listed chronologically by country (Overview). Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** All of the following started making tofu before 1985. Countries with the earliest tofu manufacturing are listed first. The month production started, when known, is given after a slash following the year. Thus 1911/06 is June 1911.

France: Usine de la Caséo-Sojaine (run by Li Yu-ying) 1911/06, Two or three tofu shops in and around Paris, including 1-2 at Colombes 1964/03. Alimentation Japonais Osaka 1972, Le Bol en Bois 1975/12, La Roussellie 1978/02, Institut Tenryu 1981/01, SOY (Société Soy) 1982/06, Les Sept Marches 1982/09, Sojatour Tofu Shop 1982/09, Ets. Co-Lu 1983/06, Lagadec Tofu 1983/06, Soja d'Oc 1983/10, Nyingma Dzong 1983/11, Tofu Kuehn 1983?, Sojagral Ouest 1984/12.

Netherlands: Vanka-Kawat 1958, FA. L.I. Frank: Frank Soya 1959?, Heuschen B.V. 1964, Firma Post & Teekman 1965, Stichting Natuurvoeding Amsterdam (renamed Manna Natuurvoeding B.V. in 1982) 1977/09, Hwergelmir: Foundation for a Natural Life 1979/07, Firma Ergepe 1981/01, Stichting Oost West Centrum 1981/01, Michel Horemaus Tofu 1981/01, Witte Wonder Products 1981/04, De Morgenstond 1981/12, Soy-Lin or F.M. Lin 1982/09. Jakso: Center for Agriculture & Craftsmanship (later called Yakso) 1983/06, Vuurdoop 1983/07.

England, UK: Dragon & Phoenix Co. 1966, Wong Chung 1975 or before, Lung Kee 1975 or before, Full of Beans Wholefoods 1978/08, Paul's Tofu & Tempeh 1981/01, Yu's Tofu Shop 1981/01, Cauldron Foods Ltd. 1981/09, The Regular Tofu Co. Ltd. 1981/12, Bean Machine (Wales) 1982, Hong Kong Supermarket 1982/09, Stewart Batchelder Tofu 1983/06.

Belgium: Etablissements Takanami (Takanami Tofu Shop) 1976, Jonathan P.V.B.A. 1977/01, De Brandnetel 1979/07, Unimave Tofu 1980, Aversano Tofu Shop 1981/01, Alternatur 1981/01, Seven Arrows Tofu 1982/04, 1983/10, Vajra 1983/11.

Switzerland: La Moisson 1978, Le Grain d'Or 1981/01, Genossenschaft Sojalade (later renamed Genossenschaftstofurei) 1981/09, Soyana 1982/02, Soy Joy 1982/04, Restaurant Sesam 1982/04, Opplinger Tofu 1982/09, Natural Products Promo Carouge 1982/09, Joya 1982/09, Centre Macrobiotique de Lausanne 1982, Osoja: La Maison du Tofu (later renamed Tofushop Centanin SA) 1983, Tofurei Pfannenstiel 1983/11, Thieu's Soja Spezialitaet

1983/11, Conserves Estavayer S.A. (Sold at Migros Supermarkets) 1984/06, Galactina Ltd. 1984/11, Berner Tofurei 1984?

Italy: Roland A. di Centa 1978, Gilberto Bianchini of Centro Macrobiotico ed Alimentazione Organica (Community Food). Renamed Centro Macrobiotico Tofu 1978/11, Ohnichi Intl. Foods Co. Lotizzazione Industries 1982/09, Circolo L'Aratro 1982/09, C.D.S. Pianetta Terra Soc. Coop. A.R.L. 1982/12, Aldo Fortis Tofu 1983/06, Fondazione Est-Ouest 1983/06.

Germany: Svadesha Pflanzen-Feinkost 1979, Alexander's Tofu Shop [Nabben] 1981/01, Biogarten 1981/01, Auenland Tofu & Soja Produkte 1982/03, Tofuhaus Belsen (renamed Yamato Tofuhaus Sojaprodukte in Jan. 1984) 1982/07, Thomas Karas und Ingeborg Taschen (associated with Bittersuess; renamed Soyastern Naturkost GmbH in Dec. 1985) 1982/11, Albert Hess Tofuhaus Rittersheim (Later in Tiefenthal) 1983/07, Tofukost-Werk TKW GmbH 1984/05, Christian Nagel Tofumanufaktur 1984/08, Sojatopf (renamed Soto in April 1989) 1984/09.

Austria: Weg Der Natur 1980/05, Tofurei Wels (renamed Schoen Tofurei in 1987) 1982, SoyVita Austria 1983/05, Taiwan Restaurant 1983/06, Walter Brunnader Tofu 1983/06, Soyarei-Erich Wallner Tofu 1983/06, Tofurei Ebner 1983/11, Soyarei Wallner Ebner 1984/02, Fernkost Markt Nippon Ya Kondo GmbH 1984/02, Naturkostladen 1984/02, Sojarei Ebner-Prosl 1984/04, Sojvita Produktions GmbH 1984/06.

Sweden: Aros Sojaprodukter 1981/02.

Denmark: Tofu Denmark (Soy Joy?) 1982/03, Dansk Tofu 1983/06.

Portugal: Unimave Tofu 1980, Shogun Produtos Aliment. 1982/09, Jose Parracho Tofu 1982/09, Próvida Lda. 1984.

Spain: Zuaitzo 1984/03.

390. Jackobs, J.A.; Smyth, C.A.; Erickson, D.R. 1984. International soybean variety experiment: Ninth report of results, 1982. *INTSOY Series* No. 27. xiv + 103 p. Dec. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following countries: (For the year 1982) Afghanistan, Azores, Bangladesh, Burma, Cameroon, Chile, China (Taiwan, ROC), Colombia, Cyprus, Dominican Republic, Ecuador, Egypt, French Guiana, Gabon, Ghana, Guatemala, Indonesia, Ivory Coast, Korea, Madagascar, Mauritius, Mexico, Morocco, Mozambique, Nepal, New Caledonia, New Hebrides, Nicaragua, Pakistan, Paraguay, Portugal, Puerto Rico, Reunion, Rwanda, Saudi Arabia, Senegal, Somalia, Sudan, Swaziland, Thailand, Turkey, United States, Uruguay, Vietnam, Yugoslavia, Zaire, Zambia, Zimbabwe.

(For the year 1981) Australia, Rwanda.

391. **Product Name:** [Proti {Soymilk}]. Later renamed Purana].

**Foreign Name:** Proti, Purana.

**Manufacturer's Name:** Ralston Purina España, S.A.

**Manufacturer's Address:** c/ Aribau, No. 125, 08021 Barcelona, Spain. Phone: (93) 202 21 25.

**Date of Introduction:** 1984 December.

**Wt/Vol., Packaging, Price:** Tetra Brik Aseptic carton.

**How Stored:** Shelf stable; refrigerate after opening.

**New Product–Documentation:** Color photo on cover of Journal of the American Oil Chemists' Society. Dec. 1984, and on page 1784 of the same issue. Front panel shows stylized rolling hills planted to soybeans, with a blue sky overhead. Blue on yellow letters at top of package state: Bebida 100% vegetal (100% non-dairy beverage). At the bottom is written: "No colorings or preservatives."

Talk with European soymilk producer. 1990. April 19. This product is made and packaged in Spain. It is distributed by a company that is linked with Ralston Purina and that distributes Purina Protein products. This soymilk is based on isolated soy proteins and produced in a dairy. It has had some success because it was the first soymilk available in Spain at a reasonable price, in part because they have custom/tariff protection.

Letter (fax) from Hernadette Dechamps, American Soybean Assoc., Madrid. 1990. May 23. "The only company known to be manufacturing soymilk now in Spain is Ralston Purina España, S.A. (gives address and phone). The product, previously named Proti, is currently sold under the name of Purana."

392. **Product Name:** [Tofu, Soymilk, and Soy Sprouts].

**Manufacturer's Name:** Próvida Lda.

**Manufacturer's Address:** Rua 28 de Setembro 12–Corteça, 2715 Sintra, Portugal. Phone: (1) 927.05.40.

**Date of Introduction:** 1984.

**New Product–Documentation:** Letter from Miguel Azguime, owner of Miso Producoes. 1989. Nov. 30. This company started making soyfoods in Portugal in 1984 and is currently in operation.

Article in SoyaFoods (ASA, Europe). 1991. 2(2):4–5. The executive director of Provida is now Mr. Alcino Rodrigues de Sousa. The company is now located at Quinta dos Linhais, Cortegaca, 2715 Pero Pinheiro. It is said to be the only tofu manufacturer in Portugal, and it makes 2,000 kg/month of tofu. "Provida also packs textured soya protein (meat extender) and would like to produce soya milk as well."

393. Tetra Pak International. 1984. Tetra Pak V.I.P. Brochure (or Visitors Guide). Lund, Sweden. 46 p. 20 x 5 cm.

• **Summary:** This narrow booklet, out of print by 1990, contains a chronology of main events connected with aseptic packaging. V.I.P. Guides published after 1984 did not include this time line.

1944. The first development work starts on creating a

package for milk that requires a minimum of material and gives maximum hygiene. This results in the principal on which the tetrahedral carton is based. Development work continued from 1944–1951.

"1951. AB Tetra Pak is formed in Sweden. The new packaging system, presented to the press in May 1951.

"1952 the first Tetra Pak machine was placed for a commercial operation in Sweden.

"1959. Development works starts on Tetra Brik, the new rectangular carton.

"1961 Oct. The first machine for filling bacteria-free milk aseptically is exhibited at a press conference in Bern, Switzerland." Note: All the company's machines prior to this date had been non-aseptic! The features of the packaging were low cost and hygienic. Much of the milk in Europe at this time was still sold unpackaged, in bulk.

"1963. March. Tetra Brik, the rectangular carton [non-aseptic], comes into commercial use in Medallia?, then in Stockholm, Sweden, later in the year.

"1964. The first AT machine [making aseptic tetrahedron packages] to be installed outside Europe is placed in Lebanon.

"1965. Deliveries of machines for aseptic filling gather speed—the trend towards longlife milk as a supplement to pasteurized starts in Europe and in several of the developing countries.

1968. The ½-litre Tetra Brik is introduced in Bochum, West Germany. The first version of Tetra Brik Aseptic is set up for field trials at Thun in Switzerland.

"1969. The first series of Tetra Brik Aseptic machines is ready for delivery. A new type of machine, the AT-1000, is introduced and the first deliveries go to Spain. Completion of the two-year delivery plan comprising 7 complete conversion lines and 25 aseptic filling machines for the Soviet Union.

"1974. Tetra Brik Aseptic is introduced in North America by Laiterie Cité in Canada. Concentrated juice is packed in 200 ml Brik Aseptic cartons and becomes a major dairy product.

"1979. Tetra Pak delivers the first aseptic Tetra Brik machine to the People's Republic of China, for chrysanthemum tea and sugarcane juice.

"1980. On exhibition at the DLG Fair in Frankfurt, West Germany, is the first Tetra King machine for 500 ml packages. Also presented is the new generation of aseptic Tetra Brik machines, AB 8. This machine has a capacity of 5,000 cartons per hour, made possible by a new sterilization bath.

"The market for portion packs continues to grow and a special space-saving aseptic Tetra Brik machine, AB 9, is now available for small volumes."

The original tetrahedron package, developed by the founder, Dr. Rausing, was originally called the Tetra Pak. Then the brick-shaped package, developed later, was called the Tetra Brik, and the company was named Tetra Pak, and

the tetrahedral pack was renamed the Tetra Standard.

Concerning the “aseptic process”: It was developed years before by Dole for a canning system. Then it lay dormant for a while. Address: Sweden.

394. Kunkel, Gunther. comp. 1984. Plants for human consumption: An annotated checklist of the edible phanerogams and ferns. Koenigstein, West Germany: Koeltz Scientific Books. xiv + 393 p. No index. 22 cm. [42 ref]

• **Summary:** A comprehensive work which considers roughly 12,650 species, of over 3,100 genera belonging to 400 families of flowering plants and ferns. Four soybean species are listed (with much poor or missing information):

“*Glycine max* (L.) Merr.—Originated in Southern Asia? [sic], much cultivated; The Soybean, young sprouts eaten as a vegetable; beans eaten in salads or cooked, made into flour for bread, soups, cakes, and other things, also a substitute for coffee; refined oil serves for cooking.

“*Glycine soja* (Sieb. & Zucc.) (?)—a questionable species of similar applications.

“*Glycine tomentella* Hayata—Australia?; said to be edible (?)”.

“*Glycine wightii* (R. Grah. ex Wight & Arn.) Verdc.—trop. Africa & Asia; leaves cooked in pot herbs.” Address: Viator (Almeria [Almeria]), Spain.

395. *Soybean Update*. 1985. Checkoff-funded export promotion at work: Tunisia. Jan. 14.

• **Summary:** “Problem: Although Tunisia has a flock of 3.5 million female sheep, Tunisian sheep producers still follow ancient practices in managing their sheep, thus limiting and slowing down the growth in sheep productivity. Tunisian lamb and mutton production can’t meet the growing consumer demand for these products.

“Program: As a follow-up activity to a Soybean Association seminar, a team of Tunisian sheep producers recently visited sheep farms and coops in Spain to study more modern sheep-raising practices. The team saw that adequate feed rations with soybean meal and/or soy protein concentrates play an important part in sheep productivity.

“Results: By showing Tunisian sheep farmers the modern methods of raising sheep, the Soybean Association hopes to increase Tunisian demand for soybean meal by 12,000-15,000 tonnes. That’s equivalent to 556,680-895,850 bushels of soybeans.”

396. Malafia Granhao, Sergio. 1985. Re: Work with soyfoods in Portugal. Letter to William Shurtleff at Soyfoods Center, June 13. 2 p. Handwritten. [Eng]

• **Summary:** “I am a student at the Chemical Engineering Department of the University of Porto (Porto, Portugal). “I am getting a degree in Bioengineering and I’m doing a preliminary project about soyfood.”

“Here are the names and addresses of institutions in

Portugal that work with soyfood: (1) Piramide, Rua do Breimer 50, 400 Porto, Portugal. Piramide already produces some kinds of soyfood but is going to start to make tempeh; (2) Suribachi, Rua do Bonfirm 136/40, 4300 Porto, Portugal; (3) Trigramma, Rua do Centro Cultural, 5-r/c, 1700 Lisboa, Portugal. Address: Rua da Cruz 111 r/c esq., 4200 Porto, Portugal.

397. Leysen, Roger. 1985. Re: The largest soybean crushers in Europe. Letter to William Shurtleff at Soyfoods Center, Aug. 6—in reply to inquiry. 2 p. Typed, with signature on letterhead.

• **Summary:** The following are estimates based on Dr. Leyson’s extensive contacts in the industry. The four largest soybean crushers, in descending order of size, are:

Cargill, approx. 9,500 tonnes/day. Five plants; 2 in France, and 1 each in Belgium, Netherlands, and Spain.

Unilever, approx. 7,100 tonnes/day. Three plants; 1 each in Netherlands, West Germany, and Switzerland.

Vandemoortele, approx. 5,500 tonnes/day. Two plants, both in Belgium.

Continental Grain, approx. 3,000 tonnes/day. Two plants; 1 each in the UK and Italy.

Information on the quantities of soybeans crushed each year in individual countries is only available from the different national oilseed processors’ associations. Statistics for the EEC crush are available from FEDIOL. The picture is now becoming extremely complicated since most plants have been equipped or are being equipped for multi-seed crushing operations. The crushing of locally-grown rapeseed and sunflowerseed is interesting because of the crushing subsidies from the EEC; they compensate the price difference with the prevailing world price. Address: Market Manager Fats and Oils, American Soybean Assoc., Brussels, Belgium. Phone: 217 20 75.

398. Jackobs, Joseph A.; Smyth, C.A.; Erickson, D.R. 1985. International soybean variety experiment: Tenth report of results, 1983. *INTSOY Series* No. 28. xiv + 113 p. Sept. (College of Agric., Univ. of Illinois at Urbana-Champaign).

• **Summary:** In the ISVEX trials, soybeans were tested in the following regions and countries (For the year 1983): Algeria, Argentina, Bangladesh, Bolivia, Burma, Cameroon, Chile, Colombia, Costa Rica, Cuba, Dominica, Ecuador, Egypt, El Salvador, Gabon, Gambia, Ghana, Guatemala, Guinea-Bissau, Honduras, Indonesia, Korea, Laos, Madagascar, Mali, Mexico, Morocco, Nepal, Pakistan, Paraguay, Peru, Philippines, Portugal, Puerto Rico, Saint Lucia, Senegal, Somalia, South Africa, Sri Lanka, Sudan, Thailand, Turkey, United States, Upper Volta, Venezuela, Yugoslavia, Zaire, Zambia, Zimbabwe.

(For the year 1982): Brazil, Burma, Cuba, Italy, Peru, Turkey, Zaire.

In Dominica, on 19 Nov. 1983, with Plenty Canada



serving as the cooperator, 16 varieties of soybeans were planted at the Royal Botanical Gardens, Roseau. Jupiter gave the highest yield, 676.8 kg/ha.

399. Viegas, Cristina A.; Sá-Correia, I.; Novais, J.M. 1985. Nutrient-enhanced production of remarkably high concentrations of ethanol by *Saccharomyces bayanus* through soy flour supplementation. *Applied and Environmental Microbiology* 50(5):1333-35. Nov. [16 ref]  
**• Summary:** Adding soy flour to a simple medium led to a rise in the specific growth rate and viable cell concentration of *Saccharomyces bayanus* during fermentation. By adding 4% soy flour (weight/volume) to a simple medium with 300 gm of glucose per liter, it was possible to reach 12% (wt/vol) ethanol in 64 hours. Address: Lab. de Engenharia Bioquímica, Instituto Superior Técnico, 1096 Lisbon Codex, Portugal.

400. **Product Name:** [Tempeh (Fresh, or Canned), and Tofu & Tempeh Pate (Spreads, 8 Varieties)].  
**Manufacturer's Name:** La Sojeria, S.C.  
**Manufacturer's Address:** Carretera de Vic Km. 30, 08180 Moia (near Barcelona), Spain. Phone: (93) 830 1123.  
**Date of Introduction:** 1985 December.  
**Wt/Vol., Packaging, Price:** Can.  
**New Product–Documentation:** Letter from Javier Arocena of Zuaizto, Spain. 1992. Dec. 14. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

Form filled out by Laura Cami and Mario Rimoldi of La Sojeria. 1993. Feb. 13. Their company began making soyfoods in Dec. 1985. These products were introduced at that time. They now make about 200 lb/month of fresh and canned tempeh. The spreads are preserved in glass, with a twist-on lid, and sterilized.

Leaflet sent by Allan Brown of Noble Bean, Ontario Canada. 1998. Jan. "Tempeh de Soja." Contents of this Spanish-language leaflet: Telephone: 340 43 62. Que es? Cuáles son sus cualidades? Cómo prepararlo? Recipes for: Tempeh frito. Rellenos. Tempeh hervido o al vapor. Tempeh a la crema. Tempeh cacciatore. Allan writes: "These folks make fresh tempeh in Barcelona." They learned how from The Farm and from Allan in Canada. Form filled out by Mario Rimoldi. 2001/07. His company still exists at the above address but he stopped making tempeh in March 1996.

401. **Product Name:** [Lecithin].  
**Manufacturer's Name:** Oleaginosas Espanolas S.A. (OESA).  
**Manufacturer's Address:** Puerto de Barcelona, Muelle de Contradique s/n, Barcelona, Spain.  
**Date of Introduction:** 1985.  
**New Product–Documentation:** Soya Bluebook. 1985. p. 79.

402. **Product Name:** [Lecithin].  
**Manufacturer's Name:** Sociedad Iberica de Molturación S.A. (SIMSA).  
**Manufacturer's Address:** Plaza de Chamberi, 8-7\*, Madrid 28010, Spain.  
**Date of Introduction:** 1985.  
**New Product–Documentation:** Soya Bluebook. 1985. p. 79.

403. **Product Name:** [Lecithin].  
**Manufacturer's Name:** Sociedade Iberica de Oleaginosas SARL (IBEROL).  
**Manufacturer's Address:** Apartado 5109, 1702 Lisbon Codex, Portugal.  
**Date of Introduction:** 1985.  
**New Product–Documentation:** Soya Bluebook. 1985. p. 79.

404. **Product Name:** [Soya Milk].  
**Manufacturer's Name:** Zuaizto.  
**Manufacturer's Address:** Calle Diputacion 5\* Piso, Calle Correria 39 Bajo, 01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.  
**Date of Introduction:** 1985.  
**New Product–Documentation:** Soya Bluebook. 1985. p. 85; 1986. p. 104. Letter from Javier Arocena (on letterhead). 1986. Sept. 10.

405. **Product Name:** [Soyburger, and Okara's Croquette].  
**Manufacturer's Name:** Zuaizto.  
**Manufacturer's Address:** Calle Diputacion 5\* Piso, Calle Correria 39 Bajo, 01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.  
**Date of Introduction:** 1985.  
**Ingredients:** Tofu, okara.

**New Product–Documentation:** Soya Bluebook. 1985. p. 83, 101. Letter from Javier Arocena. "I started to work with soy in 1982 on a family scale and in 1984 on an industrial level. I started to make hamburgers of tofu and seitan in about Nov. 1987, but they didn't sell very well."

Note: This is the earliest Spanish-language document seen (Nov. 2014) that mentions a meatless burger–Soyburger.

406. Blanchet, R. 1985. Production, cultural practices and utilization of soybean in Europe. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 1207-14. [14 ref]  
**• Summary:** Contents: Ecological characteristics of Europe: Temperature, water availability, soils. Some general agricultural characteristics of southern Europe. Production. Main cultural practices. Utilization. Main research problems: Adaptation to cool temperatures and long days, drought

tolerance and water use efficiency, nitrogen nutrition and interactions with water status, other problems. Conclusions. References.

"The Soviet Union has for a long time been the main producer, followed by Romania. In 1973, only Bulgaria, Yugoslavia and Spain were significant soybean producers. Production increased greatly during the past decade in Romania, Bulgaria and Yugoslavia. In the Yugoslavian plain of Voivodina high yields are obtained (about 2.5 t/ha in 1982). These three countries intend to extend and increase production.

"Hungary, where the important work of mapping environmental zones and maturity groups has been completed, has started production. More recently, soybean production also started in Italy (mainly in the Po Valley, here good yields are obtained), and to a lesser extent in France, Czechoslovakia, and Greece. Some small production occurs in other countries: Poland, East and West Germany, Austria, Switzerland, Portugal. All these countries have research programs. So, in general, production is not great in Europe, but it has increased quite significantly during the past ten years."

Note: This document contains the earliest clear date seen for the cultivation of soybeans in Greece (1985). Address: Institut National de la Recherche Agronomique (INRA), Centre de Recherches de Toulouse, Station d'Agronomie, B.P. 12, 31320--Castanet-Tolosan--France.

407. Huyser, Wipada S.; Meyers, William H. 1985. European policy impacts on the soybean sector. In: R. Shibles, ed. 1985. World Soybean Research Conference III: Proceedings. Boulder, Colorado: Westview Press. xxiii + 1262 p. See p. 57-65.

• **Summary:** Contents: Description of the model. Analytical method. Hypothesis 1: A 20 percent reduction of the corn threshold price in the EC [European Community]. Hypothesis 2: A 20 percent import tariff on soybean and soybean meal imports in the EC. Hypothesis 3: A 20 percent reduction of the corn threshold price in Spain. Hypothesis 4: A 10 percent per year depreciation of the U.S. dollar. Summary. References. Address: 1. Economist, International Monetary Fund, Washington DC; 2. Assoc. Prof., Dep. of Economics, Iowa State Univ., Ames, IA.

408. Juvik, Gail A.; Bernard, R.L.; Kauffman, H.E. 1985. Directory of germplasm collections. 1. II. Food legumes (Soyabean). Rome, Italy: International Board for Plant Genetic Resources. 53 p. Co-sponsored by INTSOY. [11 ref]

• **Summary:** Soybean germplasm collections worldwide are listed (with address and number of accessions) in the following countries: Argentina, Australia, Austria, Bangladesh, Bolivia, Brazil (2 collections), Bulgaria, Canada, China (14 collections), Taiwan (3), Colombia, Czechoslovakia (2), France (4), Germany (East), Germany

(West), Greece, Hungary (2), India (8), Indonesia (3), Italy, Japan (5), Korea (South, 2), Malaysia, Nepal, Nigeria, Papua New Guinea, Paraguay, Philippines, Poland, Portugal, Romania, Spain, Sri Lanka, Thailand (2), Turkey, USSR, United Kingdom, USA (5), Uruguay, Venezuela, Vietnam (2), Yugoslavia, Zambia, Zimbabwe.

The world's largest soybean germplasm collections are as follows: AVRDC, Tainan, Taiwan (12,200 accessions), National Seed Storage Laboratory (NSSL), Fort Collins, Colorado, USA (10,880), Univ. of Illinois, Urbana, IL, USA (8,368), Jilin Academy of Agricultural Sciences, Jilin, China (4,800), N.I. Vavilov All-Union Institute of Plant Industry (VIR), Leningrad, Moscow (4,700), All-India Coordinated Research Project on Soybean, G.B. Pant Univ. of Agriculture and Technology, Pantnagar, India (4,022), Suweon, South Korea (4,020), Tsukuba, Japan (3,741). USDA, Stoneville, Mississippi, USA (3,000).

A world map (p. 9-10) shows (1) The sites of all soybean germplasm collections, (2) the range of ancient cultivation of the soyabean (East and Southeast Asia), (3) range of the wild soybean (*Glycine soja*; in China and Japan), and (4) range of perennial *Glycine* (Australia, Papua New Guinea, Philippines, Taiwan, Melanesia, and Micronesia).

This document is "Available free to developing countries, but restricted distribution to developed countries." Address: 1&3. INTSOY, Univ. of Illinois at Urbana-Champaign; 2. USDA-ARS, Dep. of Agronomy.

409. Viegas, Cristina A.; Sá-Correia, I.; Novais, J.M. 1985. Rapid production of high concentrations of ethanol by *Saccharomyces bayanus*: Mechanisms of action of soy flour supplementation. *Biotechnology Letters* (Kew, England) 7(7):515-20. [16 ref]

• **Summary:** "The supplementation of a simple medium with 2% soy flour increased the final ethanol concentration and the rate of fermentation by *Saccharomyces bayanus*. This improvement could not be attributed to an increase of ethanol tolerance of yeast cells but to the satisfaction of nutritional deficiencies." Address: Laboratório de Engenharia Bioquímica, Inst. Superior Técnico, 1096 Lisboa Codex, Portugal.

410. British Arkady Co. Ltd. 1985? What's in a name? The story of Arkady. Skerton Rd., Old Trafford, Manchester, England. 5 p. Undated. Unpublished typescript. Double spaced.

• **Summary:** "To find the origins of Arkady ADM Iberica we have to go back eighty years or more. Our story begins in the United States of America where Mr. George S. Ward had begun to build up what was to become the most important group of bakeries in that country." Ward was unable, even after extensive tests, to get bread of a standardized quality from his various bakeries. One bakery gave persistently better results than the rest. To find a solution he sought

the help of the Mellon Institute of Industrial Research at the Univ. of Pittsburgh [Pennsylvania]. Its director was Robert Kennedy Duncan, who formerly held the chair of Industrial Chemistry at the Univ. of Kansas. The ensuing investigation showed surprisingly that the quality of the bread was dependant on the quality of the water used to make the dough. Small amounts of dissolved minerals could have a big effect on the activity of the yeast in the dough and the ultimate bread quality. So Ward developed a 'magic powder,' a simple mixture of mineral salts, and added it to standardize the quality of water in all his bakeries. Soon he was producing the best bread in America.

"By way of a tribute and in gratitude to a great scientist, George S. Ward asked permission of Robert Kennedy Duncan to name the powder after him or rather after the initials of his name R-K-D. So Arkady bread improver was born."

Eventually Ward allowed the Fleischman Yeast Co. to make Arkady powder and to distribute it with their yeast. This was an excellent commercial arrangement and soon it was well known to bakers throughout America. All this happened before 1913.

During World War I Robert Whympers, a major in the British Army and in charge of all British bakeries in France, noticed that American soldiers were enjoying bread of much better quality than the British soldiers and that the reason for the difference was the magical Arkady powder... In 1920 production of Arkady began in a tiny section of the Baker Perkins factory in Willesden in London.

"The product was excellent, bakers liked it, soon there was the need to build an entirely new factory with increased production capacity. This was established in Old Trafford, Manchester (near the home of the celebrated Manchester United Football team) in 1923. This growth was rapid, the size of the factory doubled in 1929 and again in 1936 and there has been continuous expansion right up to the present day.

"Sales were not just confined to England, the Arkady product was so good that their use quickly spread to other countries. From the technological and information center in Manchester grew up a number of thriving satellite companies. In the years between 1930 and 1939, the British Arkady Company established 'Arkady' companies in France, Scandinavia and Germany. Only the Deutsche Arkady Company survived the trauma of the 1939-45 war eventually leaving the ownership of the British Arkady Company. Later the Deutsche Arkady Company joined with Ireks to become Ireks-Arkady. There is only this historical connection between Ireks-Arkady and the British Arkady Company. No commercial contacts exist today and indeed the companies actively compete in some parts of the world...

"Arkady-ADM-Iberica is a joint company bringing together the knowledge and experience of three great companies: ADM—a giant among food processing companies

world wide and manufacturers of Arkady products in America; RIBA—established in Barcelona for years, intimate knowledge of Spanish cereal technology; British Arkady—the company which brought the first Arkady product to Europe 65 years ago, and has been in the forefront of bakery technology ever since." Address: Manchester, England. Phone: 061-872-7161.

411. *Soybean Update*. 1986. U.S. will retaliate against EC. March 31.

• **Summary:** U.S. government may withdraw tariff bindings on European products in response to EC restrictions on U.S. oilseed products in Portugal.

412. *Soybean Update*. 1986. U.S. retaliates against EC with quotas and higher tariffs. April 7.

• **Summary:** Although supportive of Spain and Portugal's entry into EC, U.S. imposes a quota on European white wine in response to oilseed quotas imposed in Portugal.

413. Borrero, A. 1986. Mapa nacional de produccion de soja-España [National map of soybean production-Spain]. *Eurosoya* No. 4. p. 100-02. April. Includes full-page color map. [Spa; Eng]

• **Summary:** "Preliminary considerations: This report has been conceived as an approximation to the request of 1976 Soybean Conference in Toulouse (France) for the drawing of a map representative of comparable ecological situations in Europe. It is based on the results obtained in the comparison of soybean varieties experiments at different locations between 1969 and 1972, that were completed later by more detailed studies as well as on the evolution of the crop in the commercial aspect.

"Climatological data: This map is based on data from several meteorological stations such as Sevilla, Cordoba, Badajoz, Alcala de Henares (Madrid), Zaragoza, Tortosa (Tarragona), Valladolid and La Coruna.

"These data correspond to the growing season period (from May to October), and they are referred to the values of the mean daily temperature, the sum of the monthly mean temperature, average rainfall per month, monthly average relative humidity, daily number of hours of sunny sky, maximum possible hours of sunshine, and evaporation of an uncovered surface of water.

"Conditions of the crop development: Spain offers a large diversity of environmental conditions in relation to climate, temperature and rainfall, as well as in the soil characteristics and altitude. That causes a large heterogeneity of the different varieties that influence the crop, even for near locations.

"On the other hand, artificial irrigation is necessary in most parts of the area destined to soybean crop because of the limited rainfall, with the exception of the some rich southern dry lands (Jerez de la Frontera) and the humid dry



lands of the northern part of the country (Burgos, Vitoria, northern Coast).

“The economic competition with other crops giving larger incomes and profits at the actual prices, has avoided the implantation of soybeans in those areas although it is possible to grow soybeans in those dry lands from the agronomical point of view. Therefore, the soybeans are grown under artificial irrigation and they are located along the river valleys in their larger proportion.

“The soybeans may be sown as a first crop in all regions or as a second crop in a large part of the country.

“Actually, due to economic reasons, 90% of planting are as a second crop after harvesting wheat or barley and after other crop such as beans, peas or potatoes.

“Varieties distribution: The different areas where soybeans are grown have been approximately delimited in the map, indicating the diversity of variety groups used.

“For each area, the varieties of later maturity groups are used as a first crop, and the earlier or intermediate maturity groups are sown as a second crop.\*

“Types of regions of cultivated soybeans: According to the productivities that are obtained in different areas, these have been classified in three categories. These productions are influenced not only by the soil characteristics and climate but also by the level of knowledge and experience of the farmers about this crop in each region, and by the perfection of the cultivation methods consequently.

“In order to give an idea about the level of mean production that is reached in the different regions, we include the following indicative figures:

“As a main crop:

“First region 3,000–4,000 kg/ha.

“Second region 2,000–2,500 kg/ha

“Third region 1,000–2,250

“As a second crop:

“First region 2,000–3,000 kg/ha.

“Second region 1,500–2,000 kg/ha

“\* Note.—This first approximation might be completed and refined in the future.” Address: Direccion General de Investigacion y Extension Agrarias, Apartado 1196, Sevilla, Spain.

414. *Soybean Update*. 1986. Portugal seeks increase in soybean oil consumption quota. June 30.

• **Summary:** Portugal’s soybean oil consumption quota is currently 50,000 tonnes. Spain will fulfill its 90,000 tonne soybean oil consumption quota for 1986, but proposes to tax the oil content of imported beans.

415. American Soybean Association. 1986. *Soya Bluebook* ‘86. St. Louis, Missouri: American Soybean Assoc. 278 p. July. Index (bold face type indicates advertiser). 22 cm.

• **Summary:** Contents: Index of advertisers (p. 4). Soybeans: Your profit opportunity, by Dr. Kenneth L. Bader, CEO,

ASA (p. 5). Organizations (by country, within each country alphabetically): For each gives the name, address, contact person, year founded, number of members, objectives and activities, publications. Countries are: USA, Australia, Austria, Bangladesh, Belgium, Brazil, Canada, England, Germany (Federal Republic of), Finland, France, Hungary, India, Indonesia, Italy, Ivory Coast, Japan, Malaysia, Mexico, Netherlands, Norway, Philippines, Portugal, Senegal, Spain, Sweden, Taiwan, Turkey, Yugoslavia, Zaire, Zimbabwe. U.S. agricultural education, research & extension (by state; mainly state agricultural / land-grant colleges), ASA international offices and world regions (colored world map and photo of each country director), government trading agencies.

Soy directory: Oil extraction plants / refineries (alphabetically by state in USA, then by country), soyfoods / edible soy products manufacturers (lecithin, soy flour, soy grits, soy protein concentrates & isolates, textured soy protein, binders, extenders, simulated meat products, soy oil products {margarine, shortening, cooking / salad oil, salad dressings}, soyfoods—beverages [soymilk], frozen desserts, soy sauce, tempeh, tofu, whole soybean snacks {soynuts}, other soy-based foods), within each product by country, producers of soy products for industrial manufacturers (by products, etc.): Industrial lecithin, industrial soy flour / soy protein, industrial soy oil, soy sterols and tocopherols, soybean fatty acids.

Soybean manufacturing support industries: Manufacturing equipment & supplies, soybean processing equipment & supplies, manufacturing services. Marketing and auxiliary services: Brokers, financial services, forwarding agents, marketing consultants, trading companies, transportation, warehousing—export / import.

Soy statistics (tables & graphs): Soya conversions [weights & measures], metric conversions, temperature conversions. U.S. soybean planting and harvesting dates (by state). U.S. soybean acreage, yield and production, 1925–1985 (by year). U.S. soybean planted acreage by state (1970–1985). U.S. soybean harvested acreage by state (1970–1985). U.S. soybean yield by state (1970–1985). U.S. soybean production by state (1970–1985). U.S. soybean production major crops (1920–1985): One graph each for soybeans, corn, wheat, and cotton. U.S. harvested acreage of major crops (1920–1985): One graph each for the big 4. U.S. yield per acre of major crops (1920–1985): One graph each for the big 4. Argentine soybean area, yield and production by province (1975–1986). Brazilian soybean area, yield and production by province (1975–1986). Canadian soybean production: Acreage, yield, production, farm price and value (1950–51–1984–85). Canadian soybean production and utilization (1950–1984, year beginning Aug. 1): Production, imports, supplies, exports of beans, processed for oil and meal, soy oil produced, soybean oilcake produced. World soybean production: Area and production in specified

countries and the world total (1980/81–1985/86). Soybean production by major countries (one graph, 1925–1985): U.S., Brazil, PRC [China], Argentina. Share of world soybean production [percentage] by major countries (one graph, 1925–1985): Big 4. Soybean acreage by major countries (one graph, 1925–1985): Big 4. Share of world soybean acreage [percentage] by major countries (one graph, 1925–1985): Big 4. U.S. soybeans: Supply, disposition, acreage, yield and price (1970–1986). Soybean usage in the U.S. for crush and exports (one graph, 1925–1985, million bushels). U.S. soybean exports: Percent of total usage (one graph, 1925–1985). Argentine soybeans and products (oil and meal): Supply and disposition (1975/76–1986/87). Brazilian soybeans and products (oil and meal): Supply and disposition (1975/76–1986/87). Prices of U.S. soybeans, No. 1 yellow: Average price per bushel, Illinois country shipping points (by year and month, 1950–1984, dollars). Prices of U.S. soybeans received by farmers: Average price per bushel (by year and month, 1950–1984, dollars). U.S. soybean price support operations (1945–1985, incl. CCC). U.S. soybean crop value: U.S. and major producing states (1925–1985): Illinois, Iowa, Indiana, Ohio, Missouri, Minnesota, Arkansas. Fold-out color map of U.S. soybean acreage by county. U.S. farm marketings of soybeans: Percent of open market farm sales by month (1975/76–1984/85). Map of U.S. soybean processing plants. Value of U.S. soybean products per bushel and crush margin (1950–1984): Soy oil, soybean meal, soybean price (received by farmers, No. 1 yellow Illinois), margin (ditto). U.S. soybean meal: Prices paid by farmers–44% protein, dollars per 100 lbs, by year and month (1950–1984). U.S. soybean meal: Average wholesale price–44% protein, dollars per ton, bulk Decatur, Illinois, by year and month (1950–1984). U.S. soybean meal: Beginning stocks, production, exports and domestic disappearance, by year and month, thousand short tons (1978/79–1984/85). U.S. soybean cake and meals: Supply, disposition and price (1977–1985): Soybean, cottonseed, linseed, peanut. Major world protein meals: Supply and utilization (1981/82–1985/86; Production, exports, imports, consumption, ending stocks): Soybean, cottonseed, rapeseed, sunflowerseed, fish, peanut, copra, linseed, palm kernel. World major oilseeds: Supply and utilization (1981/82–1985/86). World major vegetable and marine oils: Supply and utilization (1981/82–1985/86). Prices of U.S. soybean oil: Soy oil, domestic crude, average cents per pound in tank cars at Midwestern mills, by year and month (1950/51–1984/85). U.S. soybean utilization, by year (1960–1984): Food–Shortening, margarine, cooking and salad oils, other edible, total. Nonfood–Paint and varnish, resins and plastics, fatty acids, other inedible (incl. soap), total. Total domestic utilization. U.S. soybean oil value as percent of total soybean value (1930–1985). Note: Peaked at about 55% in 1930, fell to about 32% in 1980–81. U.S. soybean oil: Supply, disposition and price (1960–1985). U.S.

edible fats and oils: Supply and disappearance (1978–1985): Coconut, corn, cottonseed, lard, palm, peanut, soybean, sunflower, tallow (edible). U.S. exports of soybeans, by year and month (1953–1984). U.S. soybean exports by port and country of destination (Sept. 1984–Aug. 1985): Ports are–St. Lawrence Seaway, Lakes, Atlantic, Gulf (by far the largest), Pacific, Interior. U.S. exports: Soybeans–Volume of exports by country of destination (in metric tons) and total value (1981–1985). U.S. exports: Soybean oil–Volume of exports by country of destination (in metric tons) and total value (1981–1985). U.S. exports: Soybean oilseed cake and meal–Volume of exports by country of destination (in metric tons) and total value (1981–1985). Map of U.S. soybean exports by port areas: Sept. 1984–Aug. 1985 (1,000 bushels). U.S. exports of soybean, cottonseed and sunflowerseed oils: U.S. commercial and P.L. 480 exports–Volume of exports by region and country of destination (in metric tons) and total value (1979/80–1984/85; year beginning in October). U.S. exports: Soybean oil–P.L. 480, Title I and III, volume (in metric tons) and value (in \$1,000) by country of destination (FY 1981–1985). U.S. exports of soybean and cottonseed oils: U.S. commercial and P.L. 480 exports (1950–1984, million lbs; incl. P.L. 480 as a percentage of the whole). Brazilian exports of soybeans and products to major countries (1,000 metric tons; 1976–1984). Graph of soybean & product exports by major countries (U.S., Brazil, Argentina) (soybean equivalent; 1970–1985). Graph of world share of soybean & product exports by major countries (U.S., Brazil, Argentina) (1970–1985). Note: U.S. share has fallen from 95% in 1970 to about 50% in 1984.

Glossary: General terms, soy protein terms. Standards & specifications: NSPA, Association of American Feed Control Officials (AAFCO), USDA (definitions and grades). Index. Address: P.O. Box 27300, St. Louis, Missouri 63141.

416. Arocena, Javier. 1986. Re: Brief history of the soyfoods company Zuitzo in Spain. Letter to William Shurtleff at Soyfoods Center, Sept. 10. 2 p. Typed, without signature on letterhead. [Eng]

• **Summary:** “I’ve been working for the last 4 years making tofu, seitan, and tempeh, in a craftsman way, in the North of Spain, in the Basque country. Unfortunately in all of Spain we are only two people making those kind of products, even if slowly, slowly, people are asking us more and more for them every day. I have graduated in biology, and so have a background in what I am doing. I’ve really found myself useful for the rest of the world, and enjoy my life and work... I’d like to ask if there is any possibility of working for a short time (a summer or a month) in a place where I could learn how to make miso, tamari, natto, sufu, and soynuts.” Address: Zuitzo, Correria, 39–01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.

417. Chandler, William U. 1986. The changing role of the

market in national economies. *Worldwatch Paper* No. 72. 57 p. Sept. 22 cm. [71\* ref]

• **Summary:** Contents: Introduction. Efficiency in Agriculture. Efficiency in energy use. The equity question. Changing reliance on markets. Conclusion.

“From the end of World War II until recently, centralized state-planning served as a model for almost half the world. Newly independent Third World countries faced with the choice between centralized control and market orientation usually chose the former. That their foreign rulers had been capitalists turned them against market systems...”

“The world today is poised at a turning point in economic management. The abrupt Chinese shift to market mechanisms is the most dramatic example, not only because of the vast population affected, but because of the reform’s spectacular early successes. Many African nations, plagued with agricultural decline, have begun to extend market incentives of agriculture. Latin American nations, plagued with debt, have moved to sell off state-owned companies. The World Bank has helped spur this movement by providing technical advice and financial assistance.”

In terms of grain productivity, the countries with the highest land productivity are the UK (6.6 tonnes/ha), France (6.0), Hungary (5.4), East Germany (4.5), and the USA (4.4). The countries with the highest labor productivity (in metric tons per worker per year) are the USA (160.3), the UK (57.3), France (34.2), West Germany (29.2), and Hungary (23.6). All of these countries (including Hungary, but excepting East Germany) have market-oriented economies. Countries with a centrally planned agricultural sector generally fall far behind in these two crucial measures. The leaders are East Germany (4.5 / 14.9), Soviet Union (1.4 / 8.5), and Yugoslavia (4.2 / 5.2). “Agricultural productivity has fallen in virtually every centrally planned nation over the last 20 years. Farm productivity continues to increase in market-oriented nations.

“The Hungarian model holds important lessons for the rest of the world, for it shows that market economics can work even in the absence of private land ownership, as long as the producers effectively control their work. It was the Hungarian experiment, moreover, that paved the way for the Chinese reforms.”

“Hungary, the most market-oriented country in Eastern Europe, and possibly the most responsive to quality-of-life issues, developed an alternative to central planning called the New Economic Mechanism. Initiated in 1968 by János Kádár, it resembled both in name and substance the New Economic Policy of Lenin who, in frustration with the failure of centralization, introduced some market mechanisms in the Soviet Union just before his death. Stalin later abolished these... three-fourths of Hungarian agricultural land is state- or cooperative-owned... Hungarian farms are run mainly by cooperatives... the cooperatives ‘are real cooperatives,’ meaning that they are self-managing. The cooperatives, not

the central state apparatus, decide what they will grow and how they will grow it.”

“The two Germanies make an interesting comparison of market-oriented and centrally planned agriculture... West German land and labor productivity,... exceed East Germany’s by 20 percent and 100 percent, respectively.”

“Post-Mao China provides a rare and vast laboratory for testing the effect of greater reliance on market mechanisms in agriculture. China before 1978 typified Soviet-style agriculture. But in December 1978, the Chinese decided to switch to market-oriented agriculture. The shift boosted grain output by a third between 1978 and 1985, and provided improvements in per capita consumption that stand in marked contrast to Soviet trends. The shift also doubled oilseed production and raised meat production 80 percent. Significantly, this growth was achieved along with a 4 percent reduction in cultivated area, as highly erosive land was idled, and a decline in water and pesticide use. Shifting to the market spurred a dramatic increase in fertilizer use, a near doubling within the eight-year span. The increases in output and efficiency translated into higher rural incomes, which have grown as much during the eight years since 1978 as in the previous 30 years” (p. 13).

The USA, Japan, and the Common Market countries subsidize agriculture heavily. In the USA taxpayer subsidies are projected to exceed \$30 billion in 1986. Japanese farm price policies cost consumers and taxpayers 62% of the value of Japan’s agricultural output in 1982. In Japan the price of rice paid to producers is 330% the world price, and wheat is 380%. Subsidies in the EEC aim to preserve the farm sector and its way of life. “But this goal could be equally well served without the damage caused by price distortions if governments substituted agricultural price supports with direct income transfers... When policies such as minimum price supports are provided in order to ensure food security and stabilize markets—that is, when supports are set below international market levels—they can be useful. When supports exceed world market levels, however, they interfere with trade, stimulate environmentally disruptive overproduction, and waste taxpayers’ and consumers’ money” (p. 16).

In terms of energy efficiency, measured by megajoules of energy per dollar of GNP, the top 8 countries are all market-oriented: France (8.6), Sweden (8.6), Japan (9.7), Spain (11.8), West Germany (11.8), Italy (12.9), UK (17.2), and USA (19.3). Energy consumption per unit of output is highest in centrally planned economies.

In terms of life expectancy (years at birth), in 1983, the top 8 countries were all market oriented: Sweden (77), Japan (77), Spain (76), USA (75), France (75), West Germany (74), UK (74), Italy (74).

Case studies in centrally planned and more market oriented economies are given for China (p. 34-36), Brazil and Mexico (p. 37), Tanzania, Zimbabwe, and Egypt (p. 39).



Markets have at least two advantages over central planning. First, they are largely self-administering. The price mechanism brings demand more or less automatically into equilibrium with supply. Second, prices are meaningful reflecting real scarcity when high. Address: Worldwatch Inst., 1776 Massachusetts Ave., N.W., Washington, DC 20036.

418. Jacobs, Joseph A.; Smyth, C.A.; Erickson, D.R. 1986. International soybean variety experiment: Eleventh report of results, 1984. *INTSOY Series* No. 29. xvi + 168 p. Sept. (College of Agric., Univ. of Illinois at Urbana-Champaign).  
**• Summary:** "This is the final report of the International Soybean Variety Evaluation Experiments (ISVEX)... ISVEX has been the major component of INTSOY's genetic development program since 1973." Joseph A. Jacobs provided leadership to the ISVEX trial program. Pages viii–xvi contain a complete listing of about 65 cooperating centers and researchers worldwide.

During 1984, soybeans were grown at 96 sites (the name of each site is given) in the following countries: Antigua, Argentina, Bangladesh, Burma, Cameroon, China, Colombia, Costa Rica, Cyprus, Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, French Guiana, Ghana, Honduras, Indonesia, Iran, Ivory Coast, Korea, Laos, Liberia, Madagascar, Malaysia, Mexico, Nepal, New Caledonia, Pakistan, Paraguay, Philippines, Portugal, Rwanda, Saint Vincent, Somalia, South Africa, Sri Lanka, Sudan, Swaziland, Tanzania, Turkey, United States, Venezuela, Vietnam, Yugoslavia, Zambia, Zimbabwe.

In 1982, soybeans were grown in Morocco. In 1983 soybeans were grown in Brazil and Rwanda.

In 1985, soybeans were grown at 43 sites in China, Ecuador, Ethiopia, Gabon, Ghana, Guatemala, Iran, Jamaica, Korea, Mexico, Nepal, Pakistan, Paraguay, Philippines, Portugal, Sri Lanka, Thailand, Turkey, United States, Venezuela, Yugoslavia, Zaire, and Zimbabwe.

419. *Soybean Update*. 1986. Spain sets soyoil levy. Nov. 24.  
**• Summary:** "A levy on soyoil processed from soybeans imported to Spain and released for consumption has been imposed by the EEC, effective Nov. 1."

420. *Soybean Update*. 1986. More soyoil constraints imposed in Spain. Dec. 8. p. 1.

**• Summary:** Spain cuts its quota on soyoil for human consumption from 75,000 tons to 70,000 tons in a continuing effort to protect its internal oil market. The EEC has placed a 10,000 tonne quota on soyoil in Spain used for non-human consumption.

421. Frost & Sullivan, Inc. 1986. The health foods market in the EEC [European Economic Community]. 106 Fulton St., New York, NY 10038. Or Sullivan House, 4 Grosvenor

Gardens, London SW1W 0DH. 303 p. Dec. Price: \$2,300. \*

**• Summary:** While food consumption is growing generally in Europe at about 2% to 3% a year, the health food sectors are growing at 6% to 7%. The total market value for health foods is forecast to rise from \$36.1 billion in 1984 to \$43.5 billion in 1991 (in constant 1985 U.S. dollars). The report covers in depth trends in France, West Germany, the United Kingdom, the Netherlands, Belgium-Luxembourg and Denmark, with summaries for Italy, Spain, Greece, Ireland and Portugal. West Germany has the largest and most structured market for health foods. The last five years have seen the following major changes throughout the EEC: Increased public awareness of nutrition and health; greater health food sales through normal retail outlets; a wide variety of health food products available to consumers.

Soyfoods are apparently not specifically discussed. European countries have the following number of specialist health food stores and general food stores, ranked in descending by descending number of health food stores: Netherlands (53/1,860), West Germany (43/1,400), Belgium/Luxembourg (39/2,000), Denmark (38/1,190), France (32/1,550), United Kingdom (25/760), Italy (3.5/3,020), Spain (3.5/3,090), Portugal (na/4,310). Address: New York, New York. Phone: 212-233-1080 (USA); 01-730-3438 (UK).

422. **Product Name:** [Lecithin (Topcithin, Chocothin, M-C-Thin, Metarin, and Epikuron)].

**Manufacturer's Name:** Lucas Meyer S.A. Affiliate of Lucas Meyer GmbH, Hamburg.

**Manufacturer's Address:** Diagonal 389-2, 08008 Barcelona, Spain.

**Date of Introduction:** 1986.

**New Product–Documentation:** Soya Bluebook. 1986. p. 84; 1987. p. 70. Address is now Via Augusta 13-15, 08006 Barcelona.

423. **Product Name:** [Tempeh, and Tempeh in Jars (in Broth)].

**Foreign Name:** Tempe, Tempe Estofado.

**Manufacturer's Name:** Vegetalia, S.L.

**Manufacturer's Address:** Sant Andreu, s/n, Castellcir, Barcelona, Spain. Phone: 93/866-8298.

**Date of Introduction:** 1986.

**Wt/Vol., Packaging, Price:** In glass jar.

**New Product–Documentation:** Booklet titled *Recetario* published in 1992 by Vegetalia. It gives the company address and phone as "Castellcir, Tel. 93-866 61 61." The introduction states that Vegetalia was formed in April 1986 by Salvador Sala, Carmen and Tomás. As of 1992, the company is 6 years old. These products are listed on p. 32.

Form filled out by Salvador Sala. 2001. May 29. Vegetalia, S.L. began making tempeh 15 years ago.

424. **Product Name:** [Tempeh, and Tempeh Paté].

**Foreign Name:** Tempeh, Paté de Tempeh.

**Manufacturer's Name:** Zuaitzo.

**Manufacturer's Address:** Calle Diputacion 5\* Piso, Calle Correria 39 Bajo, 01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.

**Date of Introduction:** 1986.

**Ingredients:** Biological [organically grown] white soybeans, apple vinegar, culture [fermento].

**Wt/Vol., Packaging, Price:** 275 gm.

**New Product–Documentation:** Letter on letterhead. 1986. Sept. 10. "I've been working in the last four years making tofu, seitan, and tempeh, in a craftsman way, in the north of Spain, in the Basque country." Letter from Javier Arocena. "I started to work with soy in 1982 on a family scale and in 1984 on an industrial level. I started to sell tempeh and Paté de Tempeh in Nov. 1987." Note that this disagrees with statement from previous letter. Label. 1987. 3 by 4 inches. Self adhesive. Light green on white. "Tempeh. Torta de Judias de Soja Fermentadas."

425. Kahn, E.J., Jr. 1987. Profiles: The absolute beginning [Dwayne Orville Andreas and ADM]. *New Yorker* 62:41-68. Feb. 16.

• **Summary:** The best biography seen of Dwayne Andreas, with emphasis on his work with soy. On the first page is a long discussion of Nutri-Bev, a soy-based milk substitute.

Contains a nice portrait (illustration, line drawing) of Andreas on the first page. Address: New York.

426. **Product Name:** [Rice Miso, and Sweet White Miso].

**Foreign Name:** Komé Miso, Shiro Miso (Miso doce).

**Manufacturer's Name:** Miso Produções.

**Manufacturer's Address:** Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

**Date of Introduction:** 1987 February.

**Ingredients:** Rice miso: Organic soybeans, rice koji, salt, water.

**Wt/Vol., Packaging, Price:** 350 gm.

**How Stored:** Refrigerated.

**Nutrition:** Per 100 gm.: Calories 153, protein 13.5 gm, carbohydrates 19.1 gm, sodium 4400 mg.

**New Product–Documentation:** Letter from Miguel Azguime, owner. 1989. Oct. 31. The rice miso is aged 2 years in wooden kegs. The sweet rice miso is aged 1-2 months. There are 5 varieties of Nerimiso. In 1990 rice vinegar and mugi (barley) miso will also be available. Miso is aged in 800 kg capacity wooden kegs, stored outside under a large roof.

Eight years ago (in 1981) the company started research on producing koji, in order to make natural miso on a community scale. As demand increased, so did production and understanding of the process. They shared experiences with many friends, especially in Europe, studying microbiology and making many experiments at the Lisbon

University Laboratory. [Parede is located about 10 miles west of Lisbon, near the Atlantic Ocean.] Two years ago they started using organically grown grains and by the end of 1990 all of their products will be guaranteed organic. Their products are made using simple, time-honored techniques to guarantee quality. They are the only company in Portugal making koji and products derived from it. He and his wife are professional musicians.

Labels. 1989. 7 by 2.75 inches. Black on white.

Illustration of a Tibetan vajra on each label. The rice miso was introduced in Feb. 1987 and the sweet white miso in Dec. 1987.

427. *Soybean Digest*. 1987. Soy oils number nine in Portugal. Mid-March. p. 36.

• **Summary:** As recently as last year, consumers in Portugal could choose from only 2 cooking oils labeled "made with soybean oil." Today they can select from 9 soybean cooking oils, in part due to American Soybean Assoc. efforts to boost soybean oil's image as a high-quality, healthy food product.

428. *Soyfoods (ESFA)*. 1987. News from the world: Spain. *Dietetique et Sante in Spain*. 1(2):26. April. [Eng]

• **Summary:** "Diététique et Santé SA (Gerblé, Milical, Nergisport, Bisson) leader of the Health foods for adults in France has taken a majority share in the Spanish Dietisa SA, leader of the Health food market in Spain. At Dietisa Headquarters in Barcelona, the company has a modern plant and laboratory. Dietisa has subsidiaries in the UK, Switzerland and Venezuela."

429. Smith, Keith J.; Huyser, Wipada. 1987. World distribution and significance of soybean. In: J.R. Wilcox, ed. 1987. *Soybeans: Improvement, Production, and Uses*. 2nd ed. Madison, Wisconsin: American Society of Agronomy. xxii + 888 p. See p. 1-22. Chap. 1. [13 ref]

• **Summary:** Contents. 1. World soybean production: United States, Brazil, Argentina. 2. World trade in soybean. 3. Importance of soybean meal and oil. 4. World production trends.

In the first paragraph of this chapter, the authors state: "Probst and Judd (1973) presented an extensive review of the origin and early history of this crop with highlighted references to soybean in books written over about 4500 years. The early Chinese history is particularly interesting."

Note: This passage, later quoted by other writers, is unfortunate because it perpetuates the myth that the soybean has a documented history dating back 4,500 years. Hymowitz (1970), the first person to do scholarly, critical research on the early history of the soybean in China, has shown that the earliest reference seen to the soybean is in the *Book of Odes*, from roughly the 11th century BC. Thus the soybean has a documented history of about 3,000 years. Address: 1. American Soybean Assoc., St. Louis, Missouri;

2. Development Planning & Research Assocs., Inc.,  
Manhattan, Kansas.

430. American Soybean Association. 1987. *Soya Bluebook '87*. St. Louis, Missouri: American Soybean Assoc. 270 p. July. Index (bold face type indicates advertiser). 22 cm.

• **Summary:** This is the last issue of the *Soya Bluebook* published by the American Soybean Association.

Contents: Organization: International associations, government trading agencies. Soy Directory: Oil extraction plants/refineries, manufacturers of edible grade soy products & soyfoods, manufacturers of industrial grade soy products. Soybean manufacturing support industries: Category listings, product handling equipment & supplies, soybean processing equipment & supplies, manufacturing services, alphabetical company listings. Marketing & auxiliary services: Marketing services, commercial services & suppliers, exporters of soybeans & soybean products, importers of soybeans & soybean products. Soy statistics: Metric conversions, tables, charts, graphs. Glossary. Standards and Specifications. Indexes: Alphabetical company listings, *Soya Bluebook* sections and categories, advertisers. Maps.

The section titled "Soy statistics (tables, charts, graphs) (p. 185-244) is a rich source of information, worldwide. Contents: Soybean production—Area planted / harvested and yield: U.S. soybean planting and harvesting dates. U.S. soybean acreage, yield, and production. U.S. soybean planted acreage by state. U.S. soybean harvested acreage by state. U.S. soybean yield by state. U.S. soybean production by state.

U.S. production of major crops: Soybeans, corn, wheat, cotton (graph). U.S. harvested acreage of major crops: Soybeans, corn, wheat, cotton (graph). U.S. yield per acre of major crops: Soybeans, corn, wheat, cotton (graph). Argentine soybean area, yield and production by province. Brazilian soybean area, yield and production by state. Canadian soybean production. Canadian soybean production and utilization.

Soybean production by major countries (graph). Share of world soybean production by major countries (graph). World soybean production. Soybean acreage by major countries (graph). Share of world soybean acreage by major countries (graph).

Soybeans and soybean products: Supply and disposition: U.S. soybeans: Supply, disposition, acreage / yield and price. U.S. soybean meal and oil: Supply and disposition. Soybean usage in the U.S. (graph). U.S. soybean exports—percent of total usage (graph). Argentine soybeans: Supply and disposition. Argentine soybean meal and oil: Supply and disposition. Brazilian soybeans: Supply and disposition. Brazilian soybean meal and oil: Supply and disposition.

U.S. soybean prices, crop value, farm marketings: Prices of U.S. soybeans: No.1 yellow. Prices of U.S. soybeans: Received by farmers. U.S. soybean price support operations.

U.S. soybean crop value. U.S. farm marketings of soybeans.

Soybean processing and products—processing facilities and product value: U.S. soybean processing plants (map). Value of U.S. soybean products and crush margin.

Meal: U.S. soybean meal: Prices paid by farmers. U.S. soybean meal: Average wholesale price, Decatur [Illinois]. U.S. soybean meal: Beginning stocks, production, exports and domestic disappearance. U.S. oilseed cake and meals: Supply, disposition, and price. World major protein meals: Supply and utilization.

Fat and Oils: World major oilseeds: Supply and utilization. World major vegetable and marine oils: Supply and utilization. Prices of U.S. soybean oil. U.S. soybean oil utilization. U.S. soybean oil value as percent of total soybean value (graph). U.S. soybean oil: Supply, disposition, and price. U.S. edible fats and oils: Supply and disappearance.

Exports and imports—U.S. exports of soybeans by month. U.S. soybean exports by port and country of destination. U.S. exports: Soybeans by country of destination. U.S. soybean exports by port areas (map). U.S. exports: Soybean oilseed cake and meal by country of destination. U.S. exports: Soybean oil by country of destination. U.S. exports: Soybean oil, P.L. 480, title I and III by country of destination. U.S. exports: Soybean, cottonseed and sunflowerseed oils by country of destination. U.S. exports: Soybean and cottonseed oils by year. Brazilian exports of soybeans and products to major countries. Soybean and product exports by major countries (graph). World share of soybean and product exports (graph).

Before page 199 are two fold-out color maps (color coded by county): U.S. soybean production 1985, and U.S. soybean acreage 1985. Two other maps are: American Soybean Association international offices / world regions, U.S. soybean processing plants, and U.S. soybean exports by port areas.

A full-page table (p. 235) shows U.S. exports of whole soybeans, 1982-1986—Volume of exports (in metric tons) by country of destination and total value each year. Region and country of destination: North America: Canada, Mexico, other, total. South America: Brazil, Colombia, Ecuador, Peru, Venezuela, other, total. Europe and Russia: Belgium & Luxembourg, Czechoslovakia, Denmark, France, Germany (West), Germany (East), Greece, Ireland, Italy, Netherlands, Norway, Portugal, Romania, Soviet Union, Spain, Switzerland, United Kingdom, Yugoslavia, other, total. Middle East. Africa. Asia: China—PRC, China—Taiwan, India, Indonesia, Japan, Korea (South), Pakistan, other, total. Australia & Oceania. Other unidentified. Grand total. Value of exports—total (million \$). Address: P.O. Box 27300, St. Louis, Missouri 63141.

431. *Soybean Update*. 1987. Targeted Export Assistance (TEA) funds pack more wallop into ASA's defense and promotion of soyoil markets in Europe. Aug. 3. p. 3.



• **Summary:** Congress mandated TEA as part of the '85 Farm Act to fight unfair trade practice. The American Soybean Association uses TEA funds to research consumer markets for soyoil in the United Kingdom, West Germany, Italy, Spain, Greece and Portugal; and develop advertisements and other promotions to convince consumers to buy soyoil.

432. Bernard, Richard L.; Juvik, Gail A.; Nelson, Randall L. 1987. USDA soybean germplasm collection inventory [1898-1944]. Vol. 1. *INTSOY Series* No. 30. vi + 80 p. Aug. [20 ref]

• **Summary:** The title page states: "Information on the origins of soybean and wild soybean germplasm including introduced and old United States and Canadian domestic varieties and foreign and domestic strains identified by FC and PI numbers up to PI 150,000 acquired through 1944 and maintained by the United States Department of Agriculture." Note: PI can stand for either "Plant Inventory" or "Plant Introduction."

Contents: Foreword. Curator staff. The USDA soybean germplasm collection: Introduction, history, PI numbers, divisions of the collection, maintenance of the collection, statistical summaries, United States and Canadian varieties, foreign introductions, appendixes, abbreviations (EAS, ARS, ES, INTSOY, USDA, and USRSL).

Statistical tables: 1. Number of strains by maturity group (MG, p. 4). This table is divided vertically into north (MG 000 to IV), south (MG V to X), and wild soybeans. There are columns for: Old domestic varieties (before 1946), FC strains (mostly from USA), PI strains to 150,000, and total. The three maturity groups with the greatest number of strains are III (479), II (436), and IV (376)—all in the north.

2. Number of strains by country of origin (p. 5). This table is divided vertically into old domestic varieties (before 1946), FC strains, PI strains to 150,000, grand total, and wild soybeans to PI 150,000. The countries that have contributed the most strains to the U.S. collection are: China 871, Korea 335, and Japan 288.

3. Number of PI strains by year from 1898 to 1945 (p. 6). Columns show: Year. Plant Inventory volume. Initial PI designation for all crops. Number of soybean PI designations plus number of domestic varieties derived from them. Number of strains in collection each year. Accumulative total. A total of 7,867 PI soybean strains were introduced out of a total 150,209 plant introductions (about 5.2% of the total was soybeans). 413 domestic varieties were derived from these soybean introductions. The most active years for soybean introduction were 1926-1932. In 1954 there were 1,524 soybeans in the collection, or only 19.4% of those introduced with PI numbers. The rest were lost or discarded.

4. Historical summary of soybean introduction, in four time periods (p. 7): 1898-1923 (26 years, 40 strains/year). 1924-1928 (5 years, 375 strains/year). 1929-1932 (4 years, 1,193 strains/year). 1933-1944 (12 years, 14 strains/year).

5. Soybean instructions from major collecting

expeditions (p. 7). Frank N. Meyer in China, Korea, and USSR from 1906 to 1917 collected 114 soybean PI strains—including 1 wild soybean in 1913. P.H. Dorsett in China from 1924 to 1927 collected 969 PI strains—including 5 wild soybeans in 1925. P.H. Dorsett and W.J. Morse in China, Korea, and Japan from 1929 to 1932 collected 4,451 PI strains.

6. Source and identification of individual strains: Old domestic varieties (p. 8-19). 7. Source and identification of individual strains: FC [Forage Crop] strains (p. 20-23). 8. Source and identification of individual strains: PI strains (by year, 1907-1944, to PI 150,000; p. 24-59). A sample entry (p. 34) states: Collected in Japan by P.H. Dorsett and W.J. Morse, USDA Agricultural Explorers, in April to June 1929. Obtained at Nishigahara, Tokyo, on April 15. PI 80.466. Maturity Group V. 32 seeds. 'Okura Maru Daizu,' originally from Hokushu, used candied and the product is called 'Mimame' [sic, Nimame]. Note: Right below this is PI 80.468. Tsurunoko Daizu.

Source and identification of individual strains: Wild soybean strains (by year, 1925-1940, to PI 150,000).

Appendixes: 1. PI strains from which old domestic varieties were derived. 2. Old domestic varieties introduced without PI designation. 3. Old domestic varieties of hybrid or unknown origin. 4. FC strains summarized by country and year. 5. PI strains summarized by country and year: 1898 to 1944 (PI 1 to PI 150,000). 6. Chinese location names. 7. Korean location names.

The source, date, maturity group, and other information for the following 191 old domestic varieties (all of which are still in the USDA soybean germplasm collection) is given (p. 8-19): Acadian, Agate, A.K. [FC 30.761], A.K. [Kansas], A.K. (Harrow), Aksarben, Aoda, Arisoy, Arksoy, Arlington, Armredo, Austin, Avoyelles, Bansei, Bansei [Ames], Barchet, Bavender Special A, B, C, Biloxi, Blackeye, Black Eyebrow, Boone, Burwell, Capital, Cayuga, Charlee, Cherokee, Chestnut, Chief, Chusei, Clemson (from Nanjing, China in 1927; released in 1939), Cloud, CNS, Columbia, Creole, Delsoy, Delsta, Dixie, Dunfield, Earlyana, Early White Eyebrow, Easycook, Ebony, Elton, Emperor, Etum, Flambeau, Fuji, Funk Delicious, Funman, Gatan, Georgian, Giant Green, Gibson, Boku, Goldsoy, Granger, Green and Black, Guelph (from Japan in 1889 by Prof. W.P. Brooks, Massachusetts AES; called 'Medium Green' from 1903 to 1907), Habaro, Haberlandt, Hahto, Hahto [Michigan], Hakote, Harbinsoy, Harman, Harrel, Hayseed, Hidatsa, Higan, Hokkaido, Hollybrook, Hongkong, Hoosier, Hurrelbrink, Illington, Illini, Ilsoy, Imperial, Improved Pelican, Jefferson, J.E.W. 45, Jogun, Jogun [Ames], Kabott, Kagon, Kanro, Kanum, Kingston, Kingwa, Korean, Kura, Laredo, Lexington, Lincoln, Linman 533, Louisiana Green, Luthy, Macoupin, Magnolia, Mamloxi, Mammoth Yellow, Mamotan 6640, Mamredo, Manchu, Manchu [Lafayette], Manchu [Lafayette] B, Manchu [Madison],

Manchu–Hudson, Manchu–Montreal, Manchu 3, Manchu 606, Manchu 2204, Manchukota, Manchuria, Manchuria 13177, Manchuria 20173, Mandarin, Mandarin (Ottawa), Mandarin 507, Mandell, Manitoba Brown, Mansoy, Medium Green, Mendota, Midwest, Miller 67, Mingo, Minsoy, Missoy, Monetta, Morse, Mukden, Nanda, Nansemond, Nela, Norredo, Norsoy, OAC 211, Ogden, Ogemaw, Old Dominion, Ontario, Osaya, Ootootan, Pagoda, Palmetto, Pando, Patoka, Patterson, Peking, Peking S, Pennsoy, Pine Dell Perfection, Pluto, Pocahontas, Poland Yellow, Portugal, Ral soy, Richland, Roanoke, Rokusun, Rose Non Pop, S-100, Sac, Sanga, Sato, Scioto, Seminole, Seneca, Shingto, Shiro, Sioux, Sooty, Sousei, Soysota, Tanner, Tarheel Black, Taste, Tennessee Non Pop, Toku, Tokyo, Tortoise Egg, Viking, Virginia, Virginia S, Volstate, Waseda, Wea, White Biloxi, Willomi, Willomi B, Wilson, Wilson B, Wilson-Five, Wilson-Five B, Wilson-6, Wing Jet, Wisconsin Black, Wolverine, Woods Yellow, Yellow Marvel, Yelredo.

For each of these 191 varieties, a table gives the following information: Variety name, maturity group, source and other information [such as country of origin and year of introduction to the USA], prior designation [usually a P.I. number], year named or released, developer or sponsor, literature. The last column refers to a list of 20 bibliographic references in chronological order (from 1907 to 1977) on p. 18-19. Address: Univ. of Illinois.

433. *J. of the American Oil Chemists' Society*. 1987. World fats & oils report: Higher oil prices predicted. 64(8):1058-59, 1062, 1064, 1066-78, 1080-85. Aug. [1 ref]

• **Summary:** Statistics and general information on vegetable oil production, consumption, and trends in the following countries is given: Australia, Austria, Brazil, Canada, China, Czechoslovakia, Egypt, Finland, France, West Germany, East Germany, Hungary, India, Indonesia, Italy, Ivory Coast, Japan, Korea, Malaysia, Mexico, the Netherlands, Nigeria, Norway, Pakistan, Peru, the Philippines, Poland, Soviet Union, Spain, Sweden, Turkey, Uruguay, Venezuela, and Yugoslavia.

Tables include: 1. World production and consumption of major vegetable and marine oils. 2. Top 10 producers of major vegetable oils (USA, EEC 12 countries, Malaysia, China, Brazil, USSR, Indonesia, East Europe, Argentina, India. The oils: soybean, cottonseed, sunflowerseed, rapeseed, coconut, palm kernel, and palm oil). 3. Top 8 exporters of major edible oils (Malaysia, EEC 12 countries, Argentina, Philippines, USA, Singapore, Brazil, Indonesia). 4. Top 8 importers of major edible oils (EEC 12 countries, Africa, India, USA, Singapore, USSR, China, Pakistan). 5. Margarine, compound fat/shortening, and salad oil production for selected countries (USA, USSR, Japan, India, Pakistan, Netherlands, West Germany, UK, Canada, Poland, Brazil).

434. *Soybean Update*. 1987. Kenya's government has completely eliminated its 40 pct duty on soybeans. Sept. 28. p. 3.

• **Summary:** This greatly increases the potential for developing a soybean crushing industry in Kenya. The American Soybean Association in Madrid and the U.S. ag attache supported efforts to have the duty removed.

435. *Soybean Update*. 1987. Soymeal can effectively replace significant amounts of fish meal as protein in feeds for cultivated sea bream. Oct. 5. p. 3.

• **Summary:** Sea bream are the most widely cultivated saltwater fish in the Mediterranean, and a rapidly growing potential market for soymeal. Some 500 aquaculturists and fish farmers from Europe, Asia, Africa, and the USA visited the American Soybean Association's exhibit at the Aquaculture Europe '87 Conference in Amsterdam [Netherlands]. There ASA/Madrid animal nutritionist Jose Posada distributed brochures and presented results of a soybean checkoff-funded sea bream feeding trial conducted last spring in Spain.

436. Haumann, Barbara. 1987. Expanding soybean markets, uses. *J. of the American Oil Chemists' Society* 64(10):1369, 1372-79. Oct.

• **Summary:** Value-added products and soybean varieties tailored to produce specific end products are among the promising developments envisioned to expand markets for U.S. soybeans. Keith Smith, staff vice president of research for the American Soybean Association (ASA) said, "Aquaculture—raising fish such as shrimp, catfish and trout—is a growing industry in the U.S. and abroad." Smith went on to say that the switch from mainly production research to more utilization research occurred eight to nine years ago, and that 60% of ASA's total research money in the past 6 years has gone for utilization research.

Genetic research is working to improve the fatty acid content of soybean oil. Work is also under way to develop a quick, low-cost method to determine oil and protein content. Other work includes trying to lower levels of linolenic acid in the oil. At Purdue Univ. in Indiana, research geneticist Niels Nielsen of the USDA's Agricultural Research Service (ARS) is trying to develop soybean lines free of lipoxygenase enzymes. Soymilk and flours produced from the new seeds are rated significantly better in flavor and aroma. Professor Nielsen and his research group are trying to "improve the nutritional quality of the major soy storage proteins by increasing sulfur amino acid content." He noted that the methodology has resulted in doubling and tripling the methionine content. At the University of Kentucky, David Hildebrand is also working on genetic engineering of soybeans.

Brazil, the second largest producer of soybeans, has evolved as the largest exporter of soybean meal and oil. The

other top producers are China, in third place; Argentina, in fourth; and India, which recently made the top five. Indonesia is in 6th. Italy's production has grown substantially in recent years to make it the most important soybean-producing area in Europe. Other European producers include France and Spain. According to Oil World Annual published by ISTA Mielke, West Germany, the top 10 soybean oil producers for 1986/87 (in tonnes) were the following: U.S. 5,430,000; Brazil 2,538,000; Argentina 780,000; Japan 715,000; China 679,000; West Germany 521,000; The Netherlands 488,000; Spain 421,000; Italy 350,000; and Mexico 336,000.

ANPA (American Newspaper Publisher's Association) began seeking alternative sources to petroleum for ink seven years ago due to problems with petroleum supplies. Four years ago, with fluctuations in supplies and price, ANPA began considering the use of soybean oil ink. ANPA has filed a soy ink patent application and has begun licensing major ink manufacturers to make it. The first ink manufacturer to produce the ink, colored and black, is General Printing Ink, a division of Sun Chemical Corp., located in Carlstadt, New Jersey. One advantage of soy oil ink is that it is environmentally nonhazardous, which could reduce waste disposal problems. It also eliminates dependence on petroleum. There is less "ruboff" and the same amount of ink will print more pages. One drawback is that black ink made from soybean oil costs more than traditional black ink. Oil content in newspaper ink averages about 70%.

In the March 4, 1987 *Federal Register*, the U.S. Federal Grain Inspection Service (FGIS) ruled that soybean and other edible oils may be used to control grain dust in elevators. A U.S. Patent, licensed to Industrial Fumigant Co., is held jointly by Harold N. Barham and Harold N. Barham Jr. of Seed Technology of Texas. The patent was filed in 1978. Kinsella, director of the Institute of Food Science at Cornell Univ. said that another research interest was in the area of omega-3 fatty acids. It may desirable to develop soybean cultivars with high omega-3 fatty acid levels. John W. Erdman Jr. of the Univ. of Illinois' Dep. of Food Science and co-worker Angela Poneris want to nail down the factors that lower zinc bioavailability. He said, "We want to find out why this happens and if we can increase it."

Meanwhile, at INTSOY, team member Sing-Wood Yeh and others are working in the field of soybean dairy analogs. Tofulicious, a non-dairy frozen dessert, was developed through research coordinated by University of Minnesota food scientist William Breene and funded by the Minnesota Soybean Research and Promotion Council. Abroad, ASA has been promoting soy-fortified foods. For instance, in Venezuela three years ago, ASA launched an education program for consumer groups and government agencies on the benefits of soy protein. As a result, soy-fortified foods are available in Venezuela's major supermarkets, and demand for soy protein has increased to more than 48,000 pounds per

month.

Soybean researchers are also working on standardization of NIR (near-infrared spectroscopy) as a measure of protein and oil content in soybeans. NIR already is successfully used to measure grain and forage composition. If NIR were adopted as a standard by the industry, soybeans eventually could be purchased based on protein and oil content.

437. Cook, Anne. 1987. Organization wants to see soy oil sweep into new lands. *News-Gazette (Champaign, Illinois)*. Nov. 25.

• **Summary:** Hundreds of farmers attending the 10th Illinois Soy-Corn Conference heard Tom Brennan, an American Soybean Association (ASA) European marketing executive, explain that ASA is trying to establish a market position so that customers will demand soy oil in 6 targeted markets: Italy, Spain, Portugal, West Germany, Greece, and the United Kingdom. The Italian market is a major ASA target because the country consumes more oil than any other in the European Economic Community—about 5 times more than the UK. Per capita annual consumption amounts to about 6 gallons, half of it olive oil and half other kinds. Olive oil is very expensive so people blend it with other oils at home. A new government law will require labeling of blended oils within the next 5 years. The ASA is saying to companies, "If you market soy oil now, we'll help you pay for the transition to specifically labeled oils." A \$645,000 ASA contribution to one company has worked so well that the company is selling its oil abroad.

ASA reps had their work cut out for them in Greece, where selling soy oil for human consumption was illegal until recently. ASA worked for 2 years with refiners to help them turn out a high quality soy oil, then they lobbied to get the law changed. A company named Soya Hellas will introduce a soy oil product on the consumer market next year. Address: Staff.

438. U.S. International Trade Commission. 1987. Status of U.S. competitiveness (Document part). In: USITC. 1987. U.S. Global Competitiveness: Oilseeds and Oilseed Products. Washington, DC: USITC. xxii + 214 p. See p. 8-1 to 8-32. Chap. 8. USITC Publication 2045. Dec. [100 ref]

• **Summary:** Contents: Introduction. The changing structure of oilseed product markets and the loss of U.S. market share: The U.S. share of world markets, macroeconomic effects of U.S. export performance (the value of the U.S. dollar, stagnant world economic growth, the debt crisis in non-petroleum developing countries), technological development (research and development, cost differentials {farm costs, processing costs, transportation costs}), government involvement in agriculture (U.S. government agriculture policies, foreign government agriculture policies), multinationalization (multinational enterprises or MNE's).

U.S. adjustment efforts: Strategic responses to foreign



competition, cost reduction and capital expenditures. Industry views of U.S. competitiveness: Questionnaire respondents (the Commission's questionnaire asks nine of the largest U.S. soybean processors for their views on U.S. competitiveness; competitive assessment of foreign rivals—Brazil, Argentina, Malaysia, Spain, and EC-11 except Spain, effects of U.S. and foreign government policies), industry testimony (National Soybean Processors Association, American Soybean Association). Prospects for the future.

Tables: 8-1. U.S. shares of selected world markets related to soybeans, 1978-1986. 8-2. Real and nominal exchange rate indexes for the U.S. dollar against currencies of major exporters of oilseeds and oilseed products, in units of foreign currency per dollar, 1980-1986. 8-3. Effects of real appreciation and depreciation of the U.S. dollar, 1980-82, 1984-85, and 1986. 8-4. Growth of gross product, import volumes, and export volumes for industrial and developing countries.

8-5. Outstanding external debt of developing countries, 1981-1986 (in billion dollars; all vs. non-petroleum, long term vs. short term). 8-6. Soybean production: Comparison of costs (dollars per bushel) in selected countries, 1986 (Argentina is \$5.04, Brazil is \$6.21, USA Corn Belt is \$6.77). 8-7. Soybean mills: Average costs of production of selected soybean mills, in the United States, EC, and South America (Brazil and Argentina), 1985 and 1986. 8-8. U.S. industry response to foreign competition: Strategies to be initiated or carried out within the next year by 8 U.S. soybean crushers. 8-9. U.S. Industry views on U.S. competitiveness compared with major competitors (Brazil, Argentina, Malaysia, EC-11 (not incl. Spain)). Address: ITC, Herbert Hoover Building, 14th St. & Constitution Ave. N.W., Washington, DC 20230. Phone: 202-252-1807.

439. Soyfoods company business cards. 1987-1989. 1 p.  
 • **Summary:** See next page. 1. Sooke Soy Foods Ltd. (Victoria, British Columbia, Canada). 2. Hurray for Tofu (Linda Barber Pike, Indianapolis, Indiana). 3. Christian Nagel Tofu Manufaktur (Hamburg, Germany). 4. Centro de Alimentos de Soya de Venezuela (Oswaldo Perez, Estado Merida, Venezuela). 5. Zuaitzo (Javier Arocena Aramburu, Vitoria-Gasteiz, Spain). 6. White Wave (Lon Stromnes, Boulder, Colorado). 7. Bean Supreme (Trevor Johnston, Auckland, New Zealand).

440. **Product Name:** [Lecithin].  
**Manufacturer's Name:** Acigrasa S.A. Affiliate of Stern-Chemie Volkmar Wywiol, Hamburg.  
**Manufacturer's Address:** General Oraa 62, Madrid, Spain.  
**Date of Introduction:** 1987.  
**New Product–Documentation:** Soy Bluebook. 1987. p. 70.

441. Anderson, Margot Holden. 1987. Exchange rate

variability and foreign demand for U.S. soybeans. PhD thesis, University of Illinois at Urbana-Champaign. 290 p. Page 121 in volume 49/01-A of Dissertation Abstracts International. \*

Address: Univ. of Illinois at Urbana-Champaign.

442. **Product Name:** [Tofu (Fresh, or Canned)].  
**Foreign Name:** Tofu (proteina vegetal).  
**Manufacturer's Name:** La Sojeria, S.C.  
**Manufacturer's Address:** Carretera de Vic Km. 30, 08180 Moia (near Barcelona), Spain. Phone: (93) 830 1123.  
**Date of Introduction:** 1988 January.  
**Ingredients:** Organic white soybeans (*Soja blanca biológica*), spring water, nigari.  
**Wt/Vol., Packaging, Price:** Vacuum packed or canned.  
**How Stored:** Refrigerated.



**New Product–Documentation:** Letter from Javier Arocena of Zuaitzo, Spain. 1992. Dec. 14. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

Form filled out by Laura Cami and Mario Rimoldi of La Sojeria. 1993. Feb. 13. Their company introduced these products in Jan. 1988. The tofu is sold vacuum packed and pasteurized. They now make about 960 lb/month.


Label sent by Cami & Rimoldi. 1993. 4 by 2 inches. Self adhesive. Green on pink.

Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. La Soyaria, owned by Mario Rimoldi, is dead.

443. Lynch, Elizabeth; Frye, Dexter; Verklin, Janet. 1988. A history of Bunge's soybean processing activities. New York, NY: Bunge Corporation. 7 p. Unpublished manuscript.

• **Summary:** Written by Bunge employees exclusively for the Soyfood Center's History of Soybeans and Soyfoods book, this is by far the most complete document ever written on Bunge's soybean operations. A privately held company, Bunge was incorporated in New York in 1923. Initially Bunge's activities involved only trading, primarily

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agricultural commodities. Bunge's first major involvement with the U.S. soybean industry began in the early 1960s as it expanded its elevator operations along the Mississippi River. In 1968 Bunge constructed its first soybean processing plant at Destrehan, Louisiana. Today, less than 20 years later, Bunge is the third largest soybean processor in the U.S. and that plant's capacity is 1,700 tonnes/day.

In 1977 Bunge constructed a second soybean processing plant at Cairo, Illinois; capacity today is 2,900 tonnes/day. In early 1978 Bunge began acquiring soybean processing facilities from other companies, with plants in Emporia, Kansas (from Cook Industries) and Logansport, Indiana (from Krause Milling Co.). The acquisition of the Lauhoff Grain Company in 1979 added a fifth soybean processing facility, located in Danville, Illinois, to the company. Since 1981 Bunge has acquired four more soybean crushing plants, three in Mississippi (in Marks, Jackson, and Vicksburg) and one in Decatur, Alabama. Together Bunge's 9 facilities have a processing capacity of more than 500,000 bushels/day.

Overseas, Bunge Group companies in Brazil (SAMRIG, 1958; Sanbra 1973), Spain (Arlesa S.A., 1966 in Valencia), and Argentina (Molinos Rio De La Plata S.A., 1970s) are involved in soybean processing. At Arlesa, extraction capacity is now 1,200 tonnes/day. Arlesa bought Extrasur and Exisa plants, located in Sevilla, in 1970 and 1972 respectively. These two plants have now been merged. Address: One Chase Manhattan Plaza, New York, NY 10005.

444. *Soybean Update*. 1988. Portugal has renewed its soyoil internal consumption quota. March 28.

• **Summary:** ... "which it first established in 1987 as a condition for accession into the European Community. The Community insisted on the soyoil quota to make room for EC-origin olive oil, rapeseed oil, and sunseed oil in the Portuguese market. The 1988 quota level is 65,000 tonnes, unchanged from 1987's level. U.S. government officials have protested the quota to EC officials."

Note: This is the earliest English-language document seen (Oct. 2007) that uses the word "sunseed" to refer to "sunflowerseed."

445. *Soybean Update*. 1988. Full-fat soybean meal is a popular feedstuff in Spain. April 8.

• **Summary:** ... the article on soybean meal utilization in Spain should have read, "Full-fat soybean meal is becoming a popular feedstuff in Spain, thanks in part to the marketing efforts of ASA's [American Soybean Association's] office in Madrid, Spain. In 1987, full-fat soymeal utilization increased to 350,000 tonnes compared to just a few thousand tonnes in 1986. Poultry and swine feeds were the main consumers of the meal, but is also used in cattle and sheep feeds, too. Full-fat soybean meal usage is expected to climb up to 500,000 tonnes in 1988."

446. *Soybean Update*. 1988. Soybean meal is becoming a popular feedstuff in Spain. April 11.

• **Summary:** In 1987, soymeal utilization increased to 350,000 tonnes compared to just a few thousand tonnes in 1986. Poultry and swine feeds were the main consumers of the meal, but it is also used in cattle and sheep feeds. Soymeal usage is expected to climb up to 500,000 tonnes in 1986.

447. Arocena, Javier. 1988. [Re: Brief history of soyfoods manufacturing company Zuaizto]. Letter to William Shurtleff at Soyfoods Center, May 27. 2 p. Typed, with signature on letterhead. [Spa; eng+]

• **Summary:** "In 1982, we started working on a family production level and in 1984 on an industrial one. We started selling tofu and seitan in March of 1984 and tempeh in Nov. of 1987. We also produced tofu and Seitan Burgers and tempeh pâté, both in Nov. of 1987, though not as much was sold. A brief history: We opened a store in Vitoria-Gasteiz and manufactured a great variety of products, including tofu and seitan. I learned how to make tofu in France with Dominique Lagadec and how to make seitan in Barcelona. A key moment in my story was in beginning to use vacuum packaging, as before products were sealed in sanitary, plastic water containers, 15 cm wide, 30 cm long, and 20 cm tall. With the vacuum packaging and further pasteurization, I was able to respond to the challenge of increasing the life of the product and expand the radius of my commercial activities.

"It is important to point out, looking ahead, that manufacturers with an investment of 250,000 pesetas can compete in the market with the advantage that you work unhampered by bank charges. You make a pan of 180 liters with a 2 meter by 1 meter stainless steel plate, fired with domestic butane gas and heat diffusers, a second hand deep sink, and as a mill, one used for cereal groats to which you adapt a motor using a washing machine pulley. Last and most expensive, a second hand vacuum machine from the many companies who reject them in exchange for newer technologies.

"Since I have always worked alone with my wife and daughter, I set the price of tofu and seitan at 860 pesetas per kilogram in the beginning. Later on, with more sales and no competition in all of Spain, I lowered the price to 700 pesetas per kilogram—its current price—offering paid freight in next day deliveries, gathering and crediting any old material (month and a half old or spoiled by any other cause). The successful introduction of the products was due to the fact that the work was done in the same location from which it was sold. But above all, it has been a success with those who are ill; one local doctor here in Vitoria is prescribing it! I have also given cooking classes over the past several years. At the same time, I personally do all the deliveries in the city and its surroundings. In other big cities, I have distributors who carry other products besides mine. In the long run I have



been successful and today I ask myself if I should lower the prices, especially with the tofu. Tempeh had a better price from the beginning; everything going very smoothly. I set the price at 220 pesetas for a 275 gm jar of tempeh.

“Nonetheless, the social commitment is large and with the profits I have purchased a shop that carries chemical-free products. My cooking classes are free and I am encouraging soy agriculture in the region.”

Note: The original of this letter is typewritten in Spanish with Javier's signature. Someone has done a three page handwritten translation, which is included. Address: Zuaizto, Correria, 39-01001 Vitoria-Gasteiz, Spain. Phone: 945/28 86 30.

448. *Soybean Update*. 1988. The European Community's Oils and Fats Management Committee last week voted to increase Portugal's annual internal consumption quota for soyoil from 65,000 tonnes to 85,000 tonnes. Aug. 8.

• **Summary:** American Soybean Association and Administration officials have been pressing the EC to increase or eliminate the quota in order to allow increased consumer use of soyoil.

449. **Product Name:** [Tempeh Burgers].

**Manufacturer's Name:** La Sojeria, S.C.

**Manufacturer's Address:** Carretera de Vic Km. 30, 08180 Moia (near Barcelona), Spain. Phone: (93) 830 1123.

**Date of Introduction:** 1988 September.

**Wt/Vol., Packaging, Price:** Vacuum packed in plastic bags.

**New Product–Documentation:** Letter from Javier Arocena of Zuaizto, Spain. 1992. Dec. 14. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

Form filled out by Laura Cami and Mario Rimoldi of La Sojeria. 1993. Feb. 13. Their company introduced these products in Sept. 1988. They now make about 150 lb/month. The burgers are sold in vacuum-packed plastic bags.

450. Hymowitz, Ted. 1988. Personal history and work with soybeans (Interview). *SoyaScan Notes*. Nov. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ted grew up in a Jewish family in Brooklyn near the Brooklyn Botanical Garden. His parents had both immigrated from Poland, but their roots go back to Spain. He graduated from Cornell Univ. in agronomy with an interest in chemistry, then earned an MSc degree from Arizona State Univ. He then was drafted into the U.S. Army, where he worked at a chemistry lab in the USA. Then he earned a PhD from Oklahoma State Univ. in an unusual combination of genetics and biochemistry. There he first got involved with soybeans when he grew out some soybean seeds, along with those of other crops. Looking for a job, he worked for the U.S. government in Brazil for several years. There he was actively involved in a very successful project with

Kurt Athow training Brazilians to grow soybeans. Back in the USA, he was offered a job at the Dept. of Agronomy, Univ. of Illinois, where his former Dept. Head at Oklahoma State, Marlowe Thorne, was now department head at Illinois. He brought Jack Harlan and Yanda DeWet with him from Oklahoma State. Harlan had been on Hymowitz's PhD committee at Oklahoma State. Hymowitz did not go through the normal interview because his contact knew they did not hire minorities. The faculty was furious and he was soon made to feel unwelcome by colleagues. For 18 years he has almost never attended a faculty meeting or other department meeting. He ignores them. Most of them ignore him. Ram Sing and Ted are presently suing the Department for discrimination against minorities. He is the only minority faculty member out of 80 members. They will soon be hiring their first woman. Jack Harlan, who used to be at Oklahoma State, was a close faculty friend, but he is now retired. He set up the Crop Evolution Lab at Illinois. His father was a barley and crop evolution expert.

Ted's current projects: History of the soybean in Illinois from the 1850s to 1900. The two early sources of seeds were Edwards-Lea via San Francisco and the Patent Office. Farmers who grew out the early seeds in Pennsylvania; he has read their logs. On the Samuel Bowen story, Ted traveled to Georgia at least 8 times at his own expense. He went to England once. In Seville, Spain he has looked at the logs of the Spanish galleons that sailed the China-Acapulco route, but found nothing. The old Spanish script is very hard to read. He is still working on the Acapulco connection and says it looks promising. He has references to soybeans in Israel from the 1940s. Bodgdan Belich told him that in 1804 some peasants grew out soybeans in the village of Dubrovnik in Croatia/Yugoslavia.

His office is stark. He has no machines / computers in it. He keeps up with his correspondence. He writes all journal papers by hand. A secretary types them, he edits once, she keys in these changes, and they are done.

For Ted's 1970 article on "The Domestication of the Soybean," he went to the library and read a lot to try to find origins. No one seemed to know or care where it came from. He wanted to know. Some of this was Harlan's crop evolution lab perspective. Ted's book on the history of the soybean is slowly getting closer. It looks like Timber Press in Oregon is interested. They do high quality books and conference proceedings, but Ted is unwilling to sign a contract with a date on it. He has a sabbatical available for use whenever he wants but is hard to take when he has many grants and graduate students. So it may take a long time.

Concerning Ted's parents and name: His mother's surname was Rose, but it had been shortened to that from her Spanish surname, Rosmarin, which means "rosemary," after immigration to America from Poland. Ted's father's name is Bernard (actually Baruch, which means Blessed) Hymowitz. The surname Hymowitz also derives from the Spanish,

though it sounds Polish. “Owitz” means “Son of” in Eastern European languages. “Hym” is derived and softened from “Chaim,” which means life, but is not in the Old Testament of the Bible. So “Chaim” is derived from the Spanish “Jaime,” of which James is the English equivalent. In about 1804 the Russian Czar declared that all citizens must adopt the “Christian” practice of having a last name. Before that the naming pattern was often in the form, Ted son of Baruch. There were no last names in many countries. So Ted’s ancestor took the surname “Son of Jaime” = Hymowitz. Address: Urbana, Illinois.

**451. Product Name:** [Whole-Grain Amasake, White Amasake, and Rice Syrup].

**Foreign Name:** Amasaké Integral, Amasaké Branco, Mizuamé (Mel de Arroz).

**Manufacturer’s Name:** Miso Produções.

**Manufacturer’s Address:** Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

**Date of Introduction:** 1988 November.

**Ingredients:** Whole grain: Rice koji, brown rice, water.

**Wt/Vol., Packaging, Price:** Amasake: 360 gm. Rice syrup: 240 gm.

**How Stored:** Refrigerated.

**New Product–Documentation:** Letter from Miguel Azguime, owner. 1989. Oct. 31. The basic amasake is made with whole (brown) rice, whereas the White Amasake is made with white rice. The company makes its own koji for each. Rice syrup is made with whole rice. They also make sake.

Their products are made using simple, time-honored techniques to guarantee quality. They are the only company in Portugal making koji and products derived from it. Labels. 1989, received. 7 by 1.75 inches. Black on white. All three products were introduced in Nov. 1988. “100 Natural.”

**452. Product Name:** [Tofu].

**Manufacturer’s Name:** Eugénio Silva.

**Manufacturer’s Address:** Rua Augusto Gil 9, 3º Dto., 1000 Lisboa, Portugal. Phone: -.

**Date of Introduction:** 1988.

**New Product–Documentation:** Letter from Miguel Azguime, owner of Miso Producoes. 1989. Nov. 30. This company started making soyfoods in Portugal in 1988 and is currently in operation. The phone number is unknown.

**453. Product Name:** [Tempeh].

**Manufacturer’s Name:** Restaurante Lotus.

**Manufacturer’s Address:** Rua da Boavista 55, 3º, 1000 Lisboa, Portugal. Phone: (1) 60.72.83.

**Date of Introduction:** 1988.

**New Product–Documentation:** Letter from Miguel Azguime, owner of Miso Producoes. 1989. Nov. 30. This company started making soyfoods in Portugal in 1988 and is

currently in operation.

454. Goldstein, Eddie. 1989. Dairene, Pureblend, and non-dairy products (Interview). *SoyaScan Notes*. Feb. 27. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Eddie, now age 63, comes from California. In the late 1940s he was making a product in Chicago and St. Louis called Sta-Wip. It was sold to bakeries for blending with whipped cream in cake and pie toppings. He knew Bob Rich and Mel Morris in California when they entered the field.

His company Dairene started making soymilk in 1966 in Miami, Florida. Called Dairene: Imitation Vitamin D Milk, it sold for about 60-70% the price of cow’s milk. Pureblend was the stabilizer in Dairene. Pureblend was shipped to plants, which used it to make Dairene. His soymilk has no soy or beany flavor or aroma. It tastes the same as cow’s milk. He believed that in the future there would be a tremendous shortage of milk. The U.S. has been importing milk since 1972. At the same time he launched the products Dairene TAC (Top-a-Cake), Dairene Sour Cream (widely used for years by Howard Johnson in their cheesecakes), and Dairene Coffee Cream (sold for \$0.32/qt vs. \$0.80 for the dairy-based product). In 1968 he added Dairene Cream Cheese, and in 1972 Dairene Ice Cream. They used to “smear” the labels to pass labeling laws. The products were initially sold only to the institutional market, to approximately 8,000 hotels, bakeries, restaurants, coffee shops, cruise ships, etc. They were promoted primarily on the basis of their low price. He was not after the kosher market, and in fact some of his products were not kosher because of the high fees required by rabbis for certification.

Dairene was never bothered as long as its products were only sold to institutions. But when they decided to go after the retail market in the early 1970s? they ran into a host of problems from the dairy industry.

The subtitle “Imitation” was removed from the label in the early 1970s after Dec. 1972 when a Circuit Court judge ruled that Dairene was a food producer, not subject to the state of Florida’s dairy regulations. He could also sell his products to retail outlets. This victory came only after 7½ years of legal battles in Florida against the dairy lobby and the dairy division of the state department of agriculture. In 1983, after another favorable court ruling, the non-daily milk name was changed to Dairene Vegetable Vitamin D Milk. Likewise with Dairene Vegetable Ice Cream, Dairene Vegetable Muzarel (or Cheddar) Cheese, sour cream, yogurt, or soft-serve frozen yogurt (95% overrun). As of 1989 the company made 27 non-dairy soy-based products, and was involved with aseptic packaging. A half gallon of his soymilk now retails for \$1.39 in Florida, and he gives both the wholesaler and the storekeeper a 20% margin (The “five necessities” in grocery stores, milk, bread, butter/margarine, coffee, sugar are sold for a 12% markup, in part

because the high volume.) Ingredients included isolated soy protein, defatted soybean meal, vegetable oil; he blends and compounds to make both dry and liquid products. All of his products are non-dairy. He has spent a small fortune on lawyer's fees over the years. Now his products are the only non-dairy ones, including filled milk, that can be sold in the dairy case in Florida. He can manufacture in any state and ship across state lines. He does not have a company history other than a collection of past articles and other documents. He wanted to feed the masses nationwide. The hardest product to develop was the milk; it can compete head to head with dairy milk. "Our milk is a delicious product." He uses no dairy flavoring and unlike Bob Rich, no coconut fats. Yet Rich Products' products are used in hospital diets. Dairene went public in March 1988 but has not yet sold stock or otherwise raised funds. The parent company is Dairene International. He is CEO. Dairene Inc. is its fully owned subsidiary. Farm Maid Inc. (formerly at 1624 N.W. 82nd Ave., Miami, FL 33126) licenses rights to produce the products under the Dairene name overseas. They are active in Spain, Ecuador, Mexico, Argentina and products are made in some of these places. They don't have a lot of money, so things are moving slowly. Their main work in the USA is senior citizen feeding programs and America aseptic packaging in 8 oz. containers shipped UPS as Dairene: Vegetable Vitamin D Milk (soy is not mentioned). The packaging is made by International Paper, the makers of Pure-Pak cartons; he thinks the cartons and machine are much better than Tetra Pak. The price is about the same. He has shut down his plant 2 years ago in Florida, so all Dairene is now made only in Indiana. His Miami market is basically a half gallon market. His pull date is 30 days from the date of manufacture in a half-gallon Pure-Pak. The product goes rancid before it goes sour. Address: 801 41st St. #210, Miami Beach, Florida 33140. Phone: 305-534-5630.

455. Storup, Bernard. 1989. Re: Brief history of Sojadoc. Letter to William Shurtleff at Soyfoods Center, March 3. 1 p. See p. 5. [Eng]

• **Summary:** In Dec. 1981 Olivier Attié began to make tofu on his farm in a small village named Penne-d'Agenais, 47140 in southwest France. With 3 friends, he decided to start a small company to sell tofu in shops and market places, so they founded Sojadoc S.A.R.L. The group split up rapidly, and only 2 of them, Alain Lacombe and Jacques Isnard, went on with the business, which began operation at the end of 1983. In 1985 they had financial problems—they were making only plain tofu and distributing it locally. The company started again at the end of 1985 with three new partners: (1) Coopérative Agricole de Lavaur, one of the biggest agricultural cooperatives in France, with about 5,000 ha (12,350 acres) of soybeans cultivated under contracts with farmers in southwest France; (2) Charbonnages de France, a coal mining company that paid for part of the new factory in

a region where they had to close coal mines; and (3) Sanofi, an affiliate of the oil group Elf-Aquitaine, which is very interested in biotechnology.

Sojadoc S.A. built a new factory (1,350 square meters) at Zone Industrielle de la Viscose, 81000 Albi, France (Phone: 63.45.46.45). They intended to sell a "soy-base" (tofu, and a thick soymilk they called "tonyu") mainly to the food industry, and for 2 years they had a rather efficient program for promoting soyfoods among industrialists. They began to get some contracts with the industry for what we call "plats cuisinés" (things like quenelles, quiches, and pizzas), and for ice cream making, but these didn't last since the quality was very irregular, with major bacteriological problems. In 1987 they began to sell soymilk packed using the Doypack system. Sold mainly to Spain, it was very poor in quality with a strong beany taste. They had so much sales, that they were obliged to go out of business in mid-1988. At the end of 1988 the company was purchased by a big dairy cooperative group named Coopérative Laitière de Riches Monts (65 Boulevard Berthelot, 63000 Clermont-Ferrand, France) located in the center of France. Production had stopped completely by the autumn of 1988, and all equipment is going to be transferred to the new location. The aim of the new operation is to make and sell soymilk in the near future. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France. Phone: 77.31.23.66.

456. Antó, Josep M.; Sunyer, J.; Rodríguez-Rosin, R.; Suárez-Cervera, M. 1989. Community outbreaks of asthma associated with inhalation of soybean dust. *New England J. of Medicine* 320(17):1097-1102. April 27. [47 ref]

• **Summary:** Since 1981, 26 outbreaks of asthma have occurred in the Spanish city of Barcelona, affecting a total of 687 persons and causing 1,155 emergency room admissions; they all coincided with the unloading of soybeans at the seaports. The subsequent inland transport and weather conditions were favorable for spreading the soya dust over the cities. For both cities, careful studies established a close link between the asthma outbreaks and the inhalation of soybean dust during the days of unloading and transport. Address: Barcelona, Spain.

457. Welters, Sjon. 1989. Soyfoods in Europe: Influenced by a colonial past. *Soya Newsletter (Bar Harbor, Maine)*. May/June. p. 1, 12-15. [1 ref]

• **Summary:** This is a historical overview of the introduction of soyfoods to Europe since 1945. The Indonesians who immigrated to the Netherlands after World War II played a major role in introducing soyfoods (especially tofu, tempeh, and a sweet soy sauce called ketjap) to that country and to Europe. Ketjap was the most popular soyfood in Indonesia. Asian immigrants started small manufacturing companies, restaurants, and importing companies (such as Conimex and



Heuschen Schrouff). The macrobiotic movement also played a key role in introducing soyfoods, especially soy sauce, miso, and tofu. In Belgium, the Gevaert family founded Lima and began to make miso on a large scale, but a fire and other financial problems soon forced them to close the plant. Only recently have they started to make miso again.

During the 1970s, especially in Belgium and the Netherlands, inspired by the macrobiotic movement and with information from books by Shurtleff and Aoyagi, a new generation of non-Asian tofu makers emerged. “The first tofu shop in Europe owned and operated by non-Orientals was Manna Natuurvoeding. Opened in Amsterdam in 1977, Manna was a macrobiotic manufacturer, distributor, and retailer run by a non-profit foundation. Soon after opening, Manna was visited by entrepreneurs from Germany, England, Portugal, Denmark, France, Sweden, Austria, and Italy, hoping to learn about making tofu.”

During the early 1980s, tempeh was rediscovered. “Yakso Farms in the Netherlands was one of the first non-Oriental companies to produce tempeh, made from organic soybeans, and to process it into spreads, paté, sauces, and marinated products.”

In the mid-1980s the focus shifted from production to marketing and to second-generation soyfoods. Most European soyfoods are made with organic soybeans. Address: President, Craft International Consultants, 21 Wetherbee St., Acton, Massachusetts 01720. Phone: 617-264-9511.

458. Welters, Sjon. 1989. Re: Brief history of Manna Natural Foods. Letter to William Shurtleff at Soyfoods Center, July 24. 1 p. With follow-up talk on 2 Dec. 1989.

• **Summary:** This company was founded in about 1973 by Adelbert Nelissen and his wife Wieke Nelissen, plus Hugo van Seenus, among others. Adelbert is Sjon’s brother in law (his wife’s brother). Manna got started in the Rozenstraat in Amsterdam, in an abandoned house that was taken over by so-called “krakers” (counter-culture or hippie squatters). The store called “de Rozemaryn” (Rosemarin) was the first of a chain of stores which, at its peak, contained ten stores total. Hugo now owns and operates Hugo’s Market in Washington, DC.

Manna was originally a foundation named Stichting Natuurvoeding Amsterdam. It kept this name until 1982. Manna started the first tofu shop in Europe that was owned and operated by non-Orientals. Opened in Amsterdam in 1977, Manna was a macrobiotic manufacturer, distributor, and retailer run by a non-profit foundation. Soon after opening, Manna was visited by entrepreneurs from Germany, England, Portugal, Denmark, France, Sweden, Austria, and Italy, hoping to learn about making tofu.

In 1975 Manna started importing miso and shoyu from Japan, initially via Muso Foods, and later also via Mitoku. But Muso was always their main supplier.

Manna filed for Chapter 11 bankruptcy or reorganization 2 or 3 times. The first time was a bankruptcy in March 1982. All their property was sold at an auction, but was bought back by a new foundation owned by basically the same people and the same foundation at one-third the value. It was probably at this time that Manna’s name was changed from Stichting Natuurvoeding Amsterdam to Manna Natuurvoeding B.V. The company was back on its feet by 1983 but then things didn’t work out again. At the last moment before declaring bankruptcy, they got financing. But this time the bank took the Foundation out of the picture, so that the foundation was not giving the collateral for loans. The person behind the foundation, Adelbert Nelissen, became the director/president of the holding company. He probably did not have majority ownership. But at this time (May 1983) Sjon and most of the management left.

In about late 1983 or early 1984 Manna moved all operations from Meeuwenlaan in Amsterdam to Zwanenburg. The former section of Amsterdam was torn down by the city. The third time was in 1987, when the company was disbanded. At that time Adelbert became inactive. The government-appointed curator tried to get as much as possible for the assets. The macrobiotic Manna brand name and the inventory of imported Japanese foods was purchased by Akwarius, which was located in Almere in a building constructed along anthroposophic guidelines (before about 1986 they had been located in the province of Utrecht). The production facility at Zwanenburg and its equipment was purchased (mainly for the bakery) by a conglomerate of 3 natural food companies, including Akwarius and Loverendale (the largest baker of natural yeasted breads in the Netherlands). They made Manna tofu for a year or two, then facing stiff competition, sold off the tofu equipment piecemeal. They ran the Manna sourdough bakery there until 1988, then moved it to Loverendale headquarters, and closed down the Zwanenburg production facility.

Akwarius is a company based on the anthroposophical philosophy of Rudolf Steiner. They were founded in about 1974. In Holland there were 4 types or philosophies of natural foods distributors: (1) Anthroposophical (Akwarius); (2) Macrobiotic and natural foods (Manna); (3) Ecological (Kleine Aarde [Small Earth; inspired by E.F. Schumacher’s book *Small is Beautiful*] and De Nieuwe Lelie [The New Lily]); and (4) Reform movement/vegetarian (VNR: Vereniging van Nederlandse Reformhuizen = Union of Dutch Reform Houses, and Scholten [which was also the exclusive importer of Lima products from Belgium]).

Talk with Sjon Welters. 1994. April 4. Manna and Lima sold only vegetarian foods; they did not sell any fish, poultry, or meat. All these early Dutch natural foods companies were this way because no natural food store would sell fish or other flesh products; they were just not acceptable. Some years after they started they used eggs in a few products

but they were always vegetarian. The only people who ever got involved in flesh foods in the early stages were the Anthroposophic / Biodynamic people because its part of their philosophy, but even in the beginning they didn't sell meat to the stores because customers didn't want it. Address: Craft International Consultants, 21 Wetherbee St., Acton, Massachusetts 01720. Phone: 508-264-4011.

459. deKieffer, Donald E. 1989. Government-imposed restrictions on international trade in proteins. 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. 17-24.

• **Summary:** Contents: Abstract. Introduction (Theory of competitive advantage, cartelization, deregulation). The problem: World oversupply of protein products. Government interventions in oilseeds: The European Community (proposed EC consumption tax, European import barriers, EC policy on rapeseed, Spain's domestic consumption quota, Spain's export subsidies, Portugal's domestic consumption quota), Brazil (differential export taxes, preferential export financing, tax exemptions and deductions, minimum price system), Argentina (the Reembolso, the differential export tax system, price support system), Malaysia (differential export duty system), Japan, the United States (the guaranteed loan program, PL-480 and GSM credit programs, tropical oils bill, the drought bill, import barriers), Canada. Government interventions in dairy trade: European Community, United States, Canada. Government interventions in dairy trade. Discussion.

"Japan is a major importer of oilseeds and oilseed products... Imports of U.S. soybeans for crushing alone amounted to \$784 million last year." However Japan "maintains a monopolistic import regime that combines high tariffs and nontariff trade barriers designed to protect Japan's processing industries." Japan's government "requires that formula feed contain specific amounts of domestic cornmeal and 2% fish meal for on-farm mixing intended for resale. These requirements limit the incorporation of alternative products in the mixture. The U.S., for example, has been able to export soybeans to Japan, but not soy meal. If Japanese farmers were able to eliminate expensive fish meal from the feed, exporters argue, they could replace it with imported soybean meal."

A photo shows Donald deKieffer. Address: Pillsbury, Madison & Sutro, Suite 1100, 1667 K St. N.W., Washington, DC 20006.

460. **Product Name:** [Nerimiso (Ginger, Garlic, Sesame, Almond, or Peanut), and Tekka Miso].

**Foreign Name:** Neri Miso (de Gengibre, de Alho, de Sésamo), Tekka Miso.

**Manufacturer's Name:** Miso Produções.

**Manufacturer's Address:** Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

**Date of Introduction:** 1989 October.

**Ingredients:** Ginger nerimiso: Miso, ginger, rice syrup (mizume), saké.

**Wt/Vol., Packaging, Price:** Nerimiso: 200 gm. Tekka miso: 100 gm.

**Nutrition:** Per 100 gm.: Calories 419, protein 15.8 gm, carbohydrates 24.8 gm, sodium 1506 mg.

**New Product–Documentation:** Letter from Miguel Azguime, owner. 1989. Oct. 31. The rice miso is aged 2 years in wooden kegs. The sweet rice miso is aged 1-2 months. There are 5 varieties of Nerimiso.

Labels. 1989. 7 by 1.75 inches. Black on white. Illustration of a Tibetan vajra on each label.

461. **Product Name:** [Soy and Vegetable Burgers, Tofu and Millet Burgers].

**Manufacturer's Name:** La Sojeria, S.C.

**Manufacturer's Address:** Carretera de Vic Km. 30, 08180 Moia (near Barcelona), Spain. Phone: (93) 830 1123.

**Date of Introduction:** 1989 December.

**Wt/Vol., Packaging, Price:** Vacuum packed in plastic bags.

**New Product–Documentation:** Letter from Javier Arocena of Zuaitzo, Spain. 1992. Dec. 14. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

Form filled out by Laura Cami and Mario Rimoldi of La Sojeria. 1993. Feb. 13. Their company introduced these products in Dec. 1989. The burgers are sold in vacuum-packed plastic bags.

462. Howard, James O.; Harness, Vernon; Minyard, Jimmy D.; Passig, Richard E. 1989. Partners in developing farm markets overseas: A history of the cooperative program between U.S. commodity agricultural organizations and the Foreign Agricultural Service. Washington, DC: U.S. Agricultural Export Development Council. v + 106 p. Illust. 28 cm.

• **Summary:** Contents related to soybeans: Soybeans in Spain: Introducing a new product into a hostile market (p. 10-11. "Howard L. Roach, the Soybean Council's new president and Chief Executive, went to Spain in Feb. 1957). "By the end of fiscal 1969 U.S. exports of soybeans and soybean products to Spain were approaching \$100 million—an impressive figure in those days" (p. 11).

Years of reassessment and consolidation, 1963-67: Growth problems emerge: "The cooperators, with FAS approval, had moved rapidly to explore potential markets and to set up programs in the most promising areas. Both partners understood that this was to be a probing operation: successful efforts would be expanded, unsuccessful ones restructured or discontinued.

"By the early 1960s, leaders of FAS and the more

conservative cooperator organizations realized that it was time to evaluate techniques and programs, to cut back and refocus where needed, and to improve administration. This need was being documented with disturbing frequency by FAS travelers and reports by USDA auditors. The soybean program, now FAS' largest, illustrated the challenge. Its spectacular success in Spain has been told. Following his start there in 1957, Soybean Council President Howard Roach in only six years had established country offices in 16 cities plus a worldwide administrative office in Rome. In each place the Council rented offices, hired staff, and developed programs with local groups—virtually all paid for with FAS funds.

"Other commodity groups—wheat, cotton, rice, feed grains—had also grown rapidly, though not as fast as soybeans. Though FAS had approved each of the cooperators' major moves, the total effect was none the less becoming disturbing" (p. 37).

A photo (p. 37) shows Howard Roach.

A Congressional committee begins an investigation and drafts a critical report (p. 42-45. Starts in July 1963. Investigation led by Arthur Perlman. Perlman's criticisms and the final draft of his report completed in March 1964. FAS's reply. Program restructuring continues: FAS and cooperators' boards meet to agree on needed changes)

"Soybean Council of America: This program was completely revamped. Its headquarters were moved from Waterloo, Iowa, to Washington, D.C. The international Operations Office in Rome was gradually dismantled and all supervision of country offices centered in Washington. A full-time President, Glenn H. Pogeler, was chosen to succeed Howard Roach. The U.S. staff, paid with Soybean Council's funds, was strengthened.

"From a maximum of 16 country offices, operations were reorganized and consolidated to provide for 10 offices located in Colombia, Egypt, West Germany, India, Iran, Pakistan, Spain, Turkey, Morocco (a new office), and a Western European area office to be located in Italy or Belgium" (p. 45).

Soybeans: The formation of the Soybean Council of America to take on the market development job in Europe and later in South America and parts of Asia was a marriage of convenience to get the program started. But it contained a built-in conflict between the farmer and crusher sectors. Farmers wanted to push sales of beans and their products any place and in any form. They saw a big bean market in Japan for the conventional foods as well as for oil and meal. They saw a bigger market in Europe's existing and future crushing plants. George M. Strayer, head of the grower-run American Soybean Association (ASA), recalled later, 'I made myself very unpopular with the U.S. processors of soybeans, some of whom at that time took the very determined attitude that only end-products should be exported—no soybeans should leave the United States as such.'

"Europeans were as anxious to crush the beans in Europe as American crushers were to crush them in the United States. This conflict troubled Howard Roach and his colleagues as they operated the Soybean Council's market development work. The farmers' American Soybean Association was a small organization with little money, while the crushers through their National Soybean Processors Association could raise substantial funds to meet FAS requirements. The ASA launched and subsequently ran the program in the bean-oriented market of Japan; and the new Council ran it in the rest of the world.

"But even the crushers' added contribution was inadequate to meet the needs of a worldwide export promotion program. This fact, plus the continuing tension within the organization and ASA's arguments with FAS over the program's future in Japan, caused the growers to launch an expanded fund-raising program of their own through ASA.

"The growers began forming state and country organizations. Minnesota in 1962 was first, and by 1970, assisted by a growing ASA field staff, there were 16 other state organizations, involving 1,900 directors of country committees, state associations, and ASA itself.

"Spurred by the threat of a big soybean surplus, in 1968 ASA launched a program through these organizations for a voluntary farmer contribution of one-half cent a bushel on beans produced.

"With these farm organizations as a political base, ASA and the state groups also began to push for state checkoff legislation. But passing checkoff legislation hadn't been easy in some of the wheat states, and farm politics in the soybean growing states was more complex. There were the several general farm organizations that raised all of their money through voluntary contributions and which—from the beginning of market development—hesitated to see FAS help build up commodity organizations that might (and did) compete with the general organization for influence at the state and national level. Now soybean producers wanted to use state laws to collect funds for their organizations!

"But soybean checkoff legislation had already been passed in North Carolina in 1966. After some heated campaigns, laws were passed in Louisiana and South Carolina in 1969 but defeated in Minnesota and Missouri. In 1970, Texas, Virginia, and Mississippi passed legislation, followed the next year by Iowa, Arkansas, Florida, and Georgia. By early 1985 the list included 24 states.

"In 1969 a decision was made to disband the Soybean Council of America. A new organization was set up, American Soybean Institute, to fund the program; the processors were represented but the producers were dominant. The name American Soybean Association was retained for the action organization. For a brief period the National Soybean Processors had a separate contract with FAS to carry out market development in countries where the



main export was soybean oil. This program was never large.

“It took time for the administrative mechanism to be set up in individual states and funds to reach ASA. The total cooperator cash contribution in the year following the reorganization—1970—dropped to \$170,000 versus \$275,000 the year earlier. Eventually, it began to grow rapidly. FAS records show \$202,000 in fiscal year 1971, \$389,000 in 1972, and almost doubling in 1973 to \$653,000” (p. 63-64).

Soybeans (excellent overview and summary). The ASA’s first overseas market development program was in Japan. On 7 Feb. 1956 George Strayer, as executive vice-president of ASA, signed a combination program/project agreement with FAS providing \$100,000 for work in Japan and Germany.

When the Soybean Council of America was created in 1956, it received strong support from U.S. soybean crushers and limited contributions from other sectors of the soybean industry.

“The new Soybean Council was run by Howard Roach of Iowa—a farmer and proprietor of a farm management business. He was one of the more colorful persons in the history of market development. He was well organized, and possessed tremendous drive, imagination, and confidence in himself and his organization. When traveling abroad on Council business, he would rise early and by breakfast time would have typed out numerous letters and made telephone calls to associates in various parts of the world.

“Roach had little previous experience with the U.S. government and was disdainful of its role in the cooperative venture. To him the large, accumulating quantities of foreign currencies earmarked for market development provided an opportunity—almost a mandate—to move rapidly.” Roach’s “country directors had to have a slight touch of the riverboat gambler because their salaries and all other local costs were paid with FAS’ foreign currency, and there was no assurance that the program would last indefinitely. Besides, some people in FAS and the local U.S. embassy frowned on Roach’s expensive tastes.”

“By the end of this first period of market development [1963], Roach and his Soybean Council had the largest program of any FAS cooperator. In addition to their Rome headquarters, the Council was operating in 16 country offices and conducting limited operations in some 28 others; ASA was still operating in Japan.

“By June 30, 1963, the two soybean cooperators, primarily the Council, employed 154 people. Twenty-three were in the United States and 131 abroad. During fiscal 1963 the two cooperators spent \$1.4 million of FAS funds (\$1.3 million by the Council and \$107,000 by ASA). Their own contributions were reported at \$284,000 in cash and \$136,000 in goods and services. Foreign third parties were reported to have contributed \$895,000.

“But they could point to spectacular growth in exports” (p. 88-90).

**463. Product Name:** [Tofu, Tofu (in Jars), and Tofu & Miso Paté Spread].

**Foreign Name:** Tofu, Tofu Tres Delicias, Paté -de Tofu y Miso.

**Manufacturer’s Name:** Vegetalia / Productos Naturales.

**Manufacturer’s Address:** Sant Andreu, s/n, Castellcir, Barcelona, Spain. Phone: 93/866-8298.

**Date of Introduction:** 1989.

**New Product–Documentation:** Letter from Bernd Drosihn of Viana Naturkost. 1990. April 8. A tofu company in Spain, owned by Salvador Sala, now sells tofu in jars, and tofu spreads.

Letter from Javier Arocena Aramburu of Zuaizto in Spain. 1992. Dec. 14. Vegetalia is one of four soyfoods manufacturers (including his own company) that he is aware of in Spain. It is run by Salvador. The address is now given as: Plaza de la Era s/n, Castellcir (Barcelona), Spain.

Booklet titled *Recetario* sent by Penelope Stewart of Fair Oaks, California. 1993. July 19. It gives the company address and phone as “Castellcir, Tel. 93-866 61 61.” The introduction states that Vegetalia was formed in April 1986 by Salvador Sala, Carmen and Tomás. As of 1992, the company is 6 years old.

Letter from Joaquim Castillo. 1998. May 22. Vegetalia is one of three pioneering soyfoods companies in and around Barcelona.

Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. Vegetalia, S.L. / Productos Naturales is alive and healthy. Director: Salvador Sala, Plaza de L’Era, s/n. 08183 Castellcir (Barcelona). Phone: +34 93 866 6161. They give tours of their plant.

**464. Product Name:** [Formoja {Soymilk}].

**Foreign Name:** Formoja.

**Manufacturer’s Name:** Granero (Importer-Distributor).

Made in Issenheim, France, by Cacoja.

**Manufacturer’s Address:** Carretera de Petres, s/n. Sagunto (Valencia), Spain. Phone: (96) 315 71 36.

**Date of Introduction:** 1989?

**New Product–Documentation:** Letter (fax) from Hernadette Dechamps, American Soybean Assoc., Madrid. 1990. May 23. Granero (gives address and phone number) distributes a soymilk called GranoVita imported from Germany.

**465. Product Name:** [Soy Flour, Full-Fat Soy Flour].

**Manufacturer’s Name:** Kelsa S.A.

**Manufacturer’s Address:** El Burgo, La Coruna 582, Spain. Phone: 981/66-11-50.

**Date of Introduction:** 1989?

**New Product–Documentation:** Soya Bluebook. 1989. p. 130.

**466. Product Name:** [Shoyu].

**Foreign Name:** Shoyu.

**Manufacturer's Name:** Miso Produções.

**Manufacturer's Address:** Rua do Douro, No. 92 r/c, Rebelva, 2775 Parede, Portugal. Phone: (1) 247 50 68.

**Date of Introduction:** 1990 January.

**How Stored:** Shelf stable.

**New Product–Documentation:** Letter from Miguel Azguime, owner. 1989. Oct. 31. The shoyu is aged for 10 months. On 30 Nov. 1989 he writes that it will be available in Jan. 1990 in 500 ml and 1 liter containers. On his business card, below the company name is written: “Alternative cultures and foods (Alternativas Culturais e Alimentares).”

467. *SoyaScan Notes*. 1990. The isolation of Japan, trade with Holland, and shoyu (Overview). March 5. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Oda Nobunaga (1534-1582) was the first of the great unifiers of Japan. He eliminated the military power of the Buddhist church, destroying monasteries and killing monks. His bitter opposition to the Buddhists inclined him to favor the Christians, who thrived during his reign. Nobunaga was followed by Hideyoshi (1536-1598), his best general, who completed his work of unifying Japan after 250 years of political disunity. In 1587 Hideyoshi suddenly ordered all Christian missionaries banished from Japan, and he subsequently confiscated their “sub-fief” in Nagasaki. He began persecuting Christians in 1597.

In 1603 Tokugawa Ieyasu (1542-1616) founded the Tokugawa shogunate. He was intensely interested in seeing that his heirs continued his rule—a feat that had eluded Nobunaga and Hideyoshi. He regarded Christianity as a menace, and he stamped it out, though it survived longest in Nagasaki. But he was eager for foreign trade apart from religion. In the second half of the 1500s, trade with Portugal and Holland had thrived. But in 1639 the Portuguese were expelled from Japan for suspected complicity in the Shimabara Revolt. In 1641 the Dutch were moved from Hirado to Nagasaki, where they were kept almost like prisoners on Dejima (also spelled Deshima), a small artificial island in the harbor. All Japanese were prohibited on pain of death from traveling abroad. By these steps Japan succeeded in blocking off most of the channels of foreign contact.

During Japan's 215-year-long period of national isolation (1639-1854), the island of Dejima in Nagasaki Bay was the country's only port open to foreign trade.

But Japan's self-imposed isolation was by no means complete. In fact trade increased, though the Japanese were more selective about what they imported. The Dutch had a monopoly on trade between Japan and Europe. One of the items exported by Japan to Europe via Dutch traders was shoyu, is grey pottery jars with blue writing on them. On the jars was written “Jap. Soya” or “Japansch Zoya.”

468. Fehlberg, Eric C. 1990. Seventh-day Adventist health

food companies in Europe (Interview). *SoyaScan Notes*. March 7. Conducted by William Shurtleff of Soyfoods Center. Followed by a letter dated 24 May 1990 clarifying details.

• **Summary:** There are three major Seventh-day Adventist (SDA) food factories in Europe, each owned by the church: DE-VAU-GE in West Germany, Nutana in Denmark, and Granose in England. There are smaller factories in Spain, and Switzerland. All these companies are owned by the SDA church. The leading Adventist food companies, ranked in descending order of annual sales, are: 1. DE-VAU-GE, established 1899 in West Germany. They are by far the biggest in Europe. They manufacture a total of 257 products. DE-VAU-GE began making its own tofu in Jan. 1986; before that it purchased tofu from a Belgian soymilk company [Note: actually from Heuschen-Schrouff in the Netherlands]. When Michael Makowski took over as managing director in about 1972-73, company sales were about US\$3-4 million. By 1983 sales were about \$18 million. Since then growth has been fantastic. 1989 turnover was DM 84 million (US\$49 million). This is due to both excellent management and the German interest in natural, health, and vegetarian foods. 2. Nutana, est. 1898 in Denmark. They are about half the size of DE-VAU-GE. Under the management of Bent Nielsen, who was there until 3 years ago, the company grew rapidly. Since 1987 growth has flattened, but there is great potential for future growth. 3. Nutana in Norway (Nutana Norge), formerly Dagens Kost, est. 1970. They were established as a marketing company for Nutana, Denmark, and they sell all the soyfoods made by Nutana, Denmark. They also manufacture 55 products, but they import and wholesale 321 products. All of the imports come from European Adventist companies. 4. Granose Foods, est. 1899 in England. They manufacture 39 products and distribute 98 more (mostly from Nutana or DE-VAU-GE). They have been a manufacturer since 1899, and they built a new food plant in 1989. Their business is now growing rapidly. 5. Nutana in Sweden (AB Svenska Nutana) was renamed in 1987. It was formerly named Edakost Food Company, Sweden, est. 1970. 6. Nutana in Finland, formerly Finn-Nutana, est. 1979. 7. Pur-Aliment, est. 1928 in France. They are not a food manufacturer; purely marketing. 8. PHAG Food Factory (Fabrique de Produits Dietetiques), est. 1895 in Switzerland. The small factory produces 40-50 tons of food a month. 9. Granovita Spain, was founded and began manufacturing in about Aug. 1985 in Valencia, Spain. They do not produce any soyfoods at all, but they market soy products made by DE-VAU-GE in West Germany and by Nutana in Denmark. 10. Nutana in the Netherlands, founded in 1986. They are presently selling all the products produced by Nutana of Denmark as well as 5 other products: Vitanex (Sandwich cream), Rondolettes (Chickenlike or beeflike flavor), Snackers (Soy sausages), Boulettes (Dinner balls).

The Austrian Food Company, founded in 1976, was a

restaurant rather than a food manufacturer; it was closed in 1987.

Granose and DE-VAU-GE were both importing foods from Loma Linda in the USA. But now that Loma Linda has been sold to Worthington Foods, it is not clear what will happen to these imports. Today, the various Nutana companies are independent, but there is much talk of bringing Nutana in Norway and Holland together with Denmark. Nutana has always been behind the expansion of SDA food work in the Scandinavian countries. Using the common name Nutana greatly facilitates marketing.

The European food companies have grown at different rates, largely dependent on the effectiveness of each company's management. The trend has been generally up. The highest growth rates in the past 5 years have been shown by Granose in England (though it started from a smaller base), followed by DE-VAU-GE in West Germany. Pur-Aliment and Nutana have had a bit of a struggle.

All of these companies pay a portion of their profits back to the church. They are encouraged to pay about 20% of profits back to the church, but some pay almost 50%. This is similar to the dividends paid by secular companies. Fehlberg believes that tofu will be the growth food of the future; it has great growth potential that has not yet begun to be realized. Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

469. Storup, Bernard. 1990. The soymilk market in France (Interview). *SoyaScan Notes*. March 26. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** By far the biggest seller of soymilk in France in Alpro/Vandemoortele, whose plant is in Belgium. They sell an estimated 7-9 million liters/year of soymilk in France.

The biggest soymilk manufacturer in France is Cacoja (pronounced KA-ko-jah). They make an estimated 2.5 to 3 million liters/year. Cacoja's original brand name was Bioforme. They changed their brand name to BioSoja in the fall (Sept. or Oct.) of 1989. Unfortunately BioSoja is a brand owned by another soyfoods company (which notified Cacoja of the problem, and Cacoja chose to ignore it), so they will almost certainly be obliged to change the brand name once again! [to Formoja]. Cacoja was actually not their own name; it had been sold to a distributor, and they got into legal problems with that distributor, but they are still using the name as their company name. Their plant is still in Issenheim. This company is making so many mistakes that it is hard to imagine how they can survive. In part, this is because they are a cooperative and in part because they have so much money that they can afford not to be careful. For them, every day is a jackpot!

Société Soy presently makes 70,000 to 100,000 liters/month. In 1990 they expect to produce 1.5 million liters,

because they will soon introduce their own Tetra Pack line under the brand Biosoy.

The third and fourth largest soymilk manufacturers in France are probably Triballat and Innoval. Both make about the same amount, an estimated 500,000 liters a year. But this is a rough guess since they do not give out figures. Innoval's soymilk is very good quality.

Cacoja, Triballat, and Innoval all have big financial problems. They have large, expensive, automated, computerized factories and very low production. They have too much invested for the size of the market. They may produce only 1 day a week. They have no real leaders in the companies so the people are not really motivated by what they do. It's a pity, because they have two of the most interesting factories in Europe. They hope to private label soymilks for supermarkets.

It appears that Sojadoc sells their soymilk only in Spain (none in France), so it is very difficult to tell how much they are making or what they are doing. They were supposed to move their complete factory in Clermond-Ferrand, and now we do not know where they are.

DE-VAU-GE started to sell their soymilk in France, but they stopped. They now sell their soymilk mainly in West Germany, Belgium, and the Netherlands.

Thus soymilk consumption in France is presently estimated to be about 11 million liters/year, whereas production is about 3 million liters/year. Both figures are very small compared to the 2,000 million liters of cow's milk.

Bernard would estimate that soymilk consumption in France is presently growing at 25% a year. Address: Founder and Owner, Société Soy, 1 rue du Crêt de la Perdrix, 42400 St.-Chamond, France. Phone: 77.31.23.66.

470. Lindner, Anders. 1990. Re: The soymilk market in Europe. Letter (fax) to William Shurtleff at Soyfoods Center, April 4 and April 26. 3 p. [Eng]

• **Summary:** The following figures contain many guesstimates. The only countries in western and eastern Europe where significant amounts of soymilk are produced are Belgium, West Germany, France, England, and Switzerland. The following are the seven largest soymilk manufacturers in Europe, ranked in descending order of size:

1. Alpro/Vandemoortele, Belgium. Capacity: 35 million liters/year. Present output: 25 million liters/year. Growth: Believe so, but don't know how much.

2. DE-VAU-GE (DVG), West Germany. Capacity: 20 million liters/year. They are running their plant at full capacity, but as Adventists I think they don't work on Friday afternoon or Saturday, they close down during the summer, and they send one road tanker of soymilk each week to Granose in England, where it is made into soy yogurt. So they probably end up making about 12 million liters a year of soymilk in long life packs. Soon some of their soymilk



will be made into tofu. Growth: Would if they could, but they can't with the line they have, which they bought from DTD/STS for DM 4 million. DVG is making an excellent profit on their soymilk products, that's for sure. This is in part because they have the Neuform chain at their disposal.

3. Cacoja, France. Capacity: 11 million liters/year. Believed to be running at full capacity. Growth: Planning a new line but no decision yet as far as I know. I think that Cacoja produces more than 1 million liters/year. They visited DTD/STS a year ago to discuss a second line. The first one had a capacity of 2,000 liters/hour or approximately 5 million liters/year.

4. Soya Health Foods Ltd., Manchester, England (Sunrise Soya Milk). Capacity estimated at 8 million liters/year. Actual production not known.

5. Soyana, Switzerland. Capacity and production not known. Soyana has consistently refused to allow us to visit them. Even our Indian client who wanted to discuss purchase of their Dahi dessert recipe was given the cold shoulder. I think that they have their own soymilk plant, but I'm not sure. Why shouldn't they, when they have plenty of products in Swiss shops.

6. Galactina, Switzerland. Capacity estimated at 6 million liters/year. Most is used for products other than liquid soymilk. They sell limited amounts of soymilk, definitely less than 1 million liters/year packed in Tetra Brik Aseptic at the Thun Dairy in Switzerland.

7. Schoeller in Nuremberg, West Germany. Capacity not known. Soymilk used in ice cream production. There are also soymilk producers in Italy [Crivellaro], and Spain [Proti].

"Total size of European soymilk market in 1989 estimated at 50 million liters. Some is in the form of dairy analog products. Alpro and DE-VAU-GE have about 70% of the market, including bulk distributed product. Growth rate over the past few years 10–15%.

"General observations of the European soymilk industry and market: The dairy industry in France was the first to go into soymilk to offer alternatives to consumers who prefer 'non-dairy dairy type products'. The soymilk-based ice cream of West Germany's Schoeller may start a trend for the rest of the European ice cream industry. There has been no equivalent to the U.S. Tofutti boom in Europe so far. Major liquid food companies do not at present see soymilk as a significant product for Europe but follow the trends and do some development, just in case.

"The future? It is necessary to make a distinction between Eastern and Western Europe. Western Europe has a surplus food production in general and surplus dairy milk production in particular. The health aspect alone, i.e. soymilk without improved palatability, will not significantly increase soymilk sales in Western Europe. The removal of dairy production subsidies in the EEC in the years to come, especially after 1992, may give an incentive to the big names in the food industry to develop soymilk into mainstream

market products. There is EEC legislation on imitation dairy products and soymilk is mentioned as an example, but currently different member countries use their own laws.

"Many Eastern European countries have food shortages but lack money and entrepreneurship to venture into an unknown product like soymilk on their own. Furthermore, in these difficult markets, western companies with soymilk technology do not seem to find it worth the effort to first educate on the advantages and uses of soymilk and then to promote and arrange financing before they can hope to sell a soymilk processing plant. The new Eastern Europe with market economies now evolving gives hope for the future in general, but I couldn't make any guesses about soymilk.

"It is the aim of EEC to dismantle the agricultural subsidies. This will effect dairy production and new cheaper protein sources will be sought by the food industry. Soymilk definitely has a chance of 'growing up' when this happens.

"STS-Soya Technology Systems Limited no longer exists. It was the decision of APV's CEO to close it down as an independent company when the big APV reorganization took place. When we moved to Denmark we became DTD-Soya Technology Division. Now Danish Turnkey Dairies has itself become a division of the APV Pasilac Ltd and the official name is DTD-APV Pasilac Ltd (the result of mergers and takeovers!). Asger Somer Hansen now handles soymilk activities within the APV group and works in DTD-APV Pasilac Ltd.

"John Wilson still works at Alfa-Laval in Lund as far as I know—at least he did 2 years ago. Alfa-Laval also has another soymilk person, a young woman.

Note: Lindner, the managing director of Soya Technology Systems from May 1982 until Nov. 1989, has a good grasp of the world soymilk market. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

471. Fehlberg, Eric C. 1990. Re: List and activities of Seventh-day Adventist health food companies worldwide. Letter to William Shurtleff at Soyfoods Center, May 24. 6 p. Typed, with signature on letterhead.

• **Summary:** For each of the following companies is given the date of founding, date manufacturing started, and the soy products presently manufactured: Granovita, Spain. Nutana, Holland. Nutana, Norway. Nutana name changes. Austrian Food Company. DE-VAU-GE, West Germany. Sahm Yook Foods, Korea. Sanitarium Health Food Company, Australia (3 pages).

Lists (with addresses) the following companies: Sanitarium Health Food Company in Wahroonga, NSW, Australia; DE-VAU-GE Gesundheitswerk GmbH in Lueneburg, West Germany; San-iku Foods in Sodegaura-machi, Kimitsu-gun, Chiba-ken, Japan; Korean Food Factory (Sahm Yook Foods) in Choongchungnam-do, South Korea; Alimentos Integronaturales y Panificadora la Carlota in Montemorelos, N.L., Mexico; Produtos Alimenticios

Superbom Industria e Comercio Ltda. in Sao Paulo, Brazil; Alimentos Granix in Florida, Buenos Aires, Argentina; Nutana Health Food Company in Bjaeverskov, Denmark; AB Svenska Nutana in Rimbo, Sweden; Granose Foods Ltd. in Newport Pagnell, Bucks, England; Pur-Aliment Food Factory in Clichy-Cedex, France; PHAG Food Factory in Gland, Switzerland (Note: PHAG is an acronym for Produits Hygiéniques Alimentaires Gland); Egypt Food Factory in Heliopolis, Cairo, Egypt; Glaxo India Limited in Bombay, India; Westico Foods Ltd. in Mandeville, Jamaica; Industrias Covac S.A. in Alajuela, Costa Rica; South China Island Union Mission in Hong Kong (3 pages). Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904. Phone: 301-680-6674.

472. Lindner, Anders. 1990. Re: Dairylike products made from soymilk in Europe. Retail outlets for soymilk in Europe, country by country. Letter (fax) to William Shurtleff at Soyfoods Center, June 19. 1 p. Handwritten. [Eng]

• **Summary:** The following figures are my guesstimates:

I would estimate that no more than 15% of the soymilk made in Europe is then made into dairylike products, not including tofu. Of the soymilk made into dairylike products, roughly 60% is made into ice creams, 20% into non-frozen desserts (incl. puddings, and custards), 15% into yogurts, and 5% into non-dairy cheeses.

Of all the soymilk soy in Europe as a beverage, I would estimate that 50% is sold at health food stores, 40% at supermarket chains, multiples, and general food stores, and 10% at Asian retail stores.

A wild guess as to the percentage of soymilk sold at Supermarkets–Health food stores–Asian stores in each country would look something like this: United Kingdom, West Germany, France, Belgium, the Netherlands, and Switzerland would all be 40%–50%–10%.

Italy, Scandinavia, Spain, and Others would all be 10%–80%–10%.

Austria would be 30%–60%–10%. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

473. Lindner, Anders. 1990. Re: Consumption of soymilk in Europe, by country and per capita. Letter (fax) to William Shurtleff at Soyfoods Center, June 19. 1 p.

• **Summary:** The following figures are my guesstimates for the amount of soymilk consumed in major European countries. Most of the soymilk produced in Belgium [by Alpro] and Germany [by DE-VAU-GE] is consumed in other countries. Note: The large consumption in the U.K. is due to both its large total population and its large population of vegetarians and vegans. The latter do not consume milk or other animal products.

Country (Population)–Soymilk consumption in million liters–% of total–liters per capita per year

United Kingdom (56.7 million)–20 million liters\*–40% of total–0.35

West Germany (60.2 million)–10 million liters–20% of total–0.17

France (55.8 million)–6 million liters\*\*–12% of total–0.11

Belgium (9.9 million)–3 million liters–6% of total–0.30

Netherlands (14.7 million)–2 million liters–4% of total–0.14

Switzerland (6.5 million)–2 million liters–4% of total–0.31

Scandinavia\*\*\* (22.8 million)–2 million liters–4% of total–0.088

Italy (57.4 million)–1 million liters–2% of total–0.017

Austria (7.6 million)–1 million liters–2% of total–0.13

Spain (39.8 million)–1 million liters–2% of total–0.025

Others\*\*\*\* (24.3 million)–2 million liters–4% of total–0.082

Total (355.7 million)–50 million liters–100%–0.14

\* Neil Rabheru, founder and director of Unisoy, the largest soymilk manufacturer in the UK, estimates that 18–20 million liters/year of soymilk are consumed in the UK.

\*\* Bernard Storup of Société Soy, a large soymilk maker in France, estimates consumption of soymilk in France to be much higher, about 11 million liters. Storup's estimate is probably more accurate. \*\*\* Scandinavia = Sweden (8.3 million), Denmark (5.0 million), Finland (5.0 million), Norway (4.2 million), Iceland (0.25 million).

\*\*\*\* Others = Portugal (10.2 million), Greece (10.0 million), Ireland (3.7 million), Luxembourg (0.369 million), Malta (0.358 million).

Highest per capita consumption: United Kingdom 0.35, Switzerland 0.31, Belgium 0.30, West Germany 0.17, Netherlands 0.14, Austria 0.13, France 0.11. Lowest per capita consumption: Italy 0.017, Spain 0.025. Address: P.O. Box 19002, S-250 09 Helsingborg, Sweden. Phone: 42-92776.

474. Rabheru, Neil. 1990. The soymilk industry and market in the United Kingdom (Interview). *SoyaScan Notes*. July 2. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** There are only two significant manufacturers of soymilk from soybeans in the U.K.; Unisoy and Soya Health Foods Ltd. Plamil Foods Ltd. buys soy protein isolates from Protein Technologies International, then subcontracts with a dairy to have these mixed with water and other ingredients, according to Plamil's formula, to make a soymilk. As far as he knows, Plamil has never purchased soybeans to make soymilk and has never had their own plant. Haldane used to import its soymilk from France. This soymilk was made, not from soybeans but from some kind of a spray-dried formulation. Then Unisoy started supplying Haldane, but that contract came to an end when Haldane was acquired by another company. Neil thinks they are now

importing again, probably from France, not from Australia. Haldane's imports are very small. Neil has never heard of Itona Products Ltd. in Wigan, Lancashire [although they are still in business in 1990].

Of the soymilk made in the Uniso produces well over 50%. Approximately 18-20 million liters of soymilk are sold and consumed in the UK each year. It is the biggest soymilk market in Europe, and it is growing at the rate of roughly 15-26% a year. "The growth has been phenomenal, and the bulk of the growth in the European soymilk market seems to have been in the UK." But he doubts very much that it is growing faster than 26% a year. The estimated market shares by company are: Alpro/Vandemoortele 51%, Granose 15-17%, Uniso 15-17%, and others (Plamil, Soya Health Foods, Haldane, etc.) 15-19%.

In terms of outlets, Granose is sold only in health food outlets. Uniso's best-selling and most profitable line is its four soymilk products. White Waves sugar free has long been the best selling single product, but it is rapidly being overtaken by Uniso Gold (fortified with vitamins and minerals), which has been a phenomenal success. The bulk of Uniso's soymilk sales is in national multiples/grocery chains. Of all Uniso's products, about 65% of sales is in multiples and 35% in health food stores. Plamil has its own clientele; its products are very popular among vegans. Soya Health Foods Ltd. has been able to survive largely because of their soy ice cream, which was one of the first ones on the market in the UK [after Sojal and SoyBoy Soymilk Ices from the Regular Tofu Co.] and the most widely available brand for a long time. Soymilk is a very small product for Soya Health Foods Ltd. now.

Alpro/Vandemoortele did the pioneering work in getting soymilk into British multiples (supermarkets). In about 1982 Safeway (which has its origins in America), became the first multiple (supermarket chain) to sell soymilk in the UK. They sold the Alpro/Vandemoortele line but they sold only a small quantity. Safeway has always purchased its soymilk from Vandemoortele. Michael Cole of Soya Health Foods Ltd. also deserves a good deal of credit for the growth of soymilk in the UK. He did the early work in getting British-based supermarkets, large chain stores, and normal grocery stores interested in carrying soymilk. By late 1985 Cole was selling large amounts of his aseptically packed Sunrise Soya Milk to multiples, including Tesco. "Cole did the solid job of marketing and bringing soymilk into the perspective it is in now. Then he left Soya Health Foods in mid- to late-1987." He started his own consulting company. Today every multiple in the country, including the large chemist chains (drug stores) are now offering soymilk to the consumer.

Uniso exports their soymilk to the Netherlands, Italy (to Parma Soia), and Ireland. It is also sold in Portugal. It used to be sold in Belgium. Address: Unit 1, Cromwell Trading Estate, Cromwell Rd., Bredbury, Stockport, Cheshire SK6 2RF, England. Phone: 061-430 6329.

475. Shurtleff, William; Aoyagi, Akiko. 1990. Soymilk in Europe: The industry and market, commercial products, publications, and history. Lafayette, California: Soyfoods Center. 261 p. July 17. Indexes. 28 cm. [763 ref]

• **Summary:** Since the mid-1980s, the soymilk industry and market in Western Europe has been booming, and the future looks very bright. Many large companies with plenty of capital and marketing expertise are entering the market, product quality and diversity is steadily improving, and consumers are showing and increased interest in nutritional protein beverages that are free of cholesterol and lactose, and low in saturated fats.

Soymilk production and growth rate: Production of soymilk in western Europe as a whole is estimated to have grown to 30–42.5 million liters/year (7.9–11.2 million gallons/year) in 1990, up from only 6-10 million liters/year (1.59–2.64 million gallons/year) in 1984, a roughly fivefold increase in 6 years. This represents an average compound growth rate of about 30% a year.

Estimates of total market size (not including infant formulas): Philippe Vandemoortele, managing director of Alpro, Europe's largest soymilk manufacturer, estimates the adult soymilk market in Europe to be 30 million liters/year. Asger Somer Hansen, managing director of DTD/STS, one of Europe's two largest suppliers of soymilk plants, estimates 35-40 million liters/year. Anders Lindner, managing director of DTD/STS until late 1989, estimates 42.5 million liters/year, plus an additional 7.5 million liters/year that are made into dairylike products such as soy puddings, yogurts, ice creams, and cheeses.

Leading countries: The largest soymilk market in Europe is clearly in the UK, because of its large population of vegetarians and vegans (vegans do not consume milk or any other animal products), its large total population, its large number of soymilk manufacturers and marketers, the fact that soymilk is now sold in many UK multiples/supermarkets, its relatively long history of soymilk production, and the fact that many soymilk products bear the generic name "Soya Milk" on the front panel. The first commercial soymilk in England was Solac, launched in 1912 with great fanfare and publicity by the Solac Company/Synthetic Milk Syndicate. Roughly 40% of all soymilk consumed in Europe is consumed in the UK, and per capita consumption is also highest there. The second largest market is probably France, with West Germany a very close third.

Leading manufacturers: Two companies (Alpro in Belgium and DE-VAU-GE in West Germany) dominate the market with an estimated 70% market share, and that percentage is not likely to decrease. Competition is fierce and increasing. Alpro, which began making soymilk in 1979 and now produces about 21 million liters/year, is building a new plant at Wevelgem, Belgium, which is scheduled to begin operation in June 1990. Costing about US\$15



million, it will have a capacity of 45 million liters/year. DE-VAU-GE's plant, which was built by DTD/STS and began operation in August 1985, now produces about 12 million liters/year but has a capacity of 3,000 to 4,000 liters/hour of finished soymilk. Other manufactures with the year they started making soymilk and their current estimated annual production in liters/year: Unisoy (UK, 1986) 3 million; Cacoja (France, 1987) 3 million; Soyana (Switzerland, 1985) 2.5 million; Société Soy (France, 1975) 1.2 million; Soya Health Foods (UK, 1985) 1 million; Galactina (Switzerland, 1969) 1 million; Triballat (France, 1989) 0.5 million; Innoval (France, 1987) 0.5 million; Crivellaro (Italy, 1989) 0.5 million. Other smaller producers include Plamil (UK, 1965), Haldane (UK, 1984), Itona (UK, 1964), and Ralston Purina España (Spain 1984).

**Price:** The retail price of soymilk is 2-3 times as high as that of cow's milk.

**Packaging:** Virtually all European soymilk and soymilk-based products are now sold in Tetra Brik Aseptic cartons. But with the growing concern about and legislation concerning disposal of solid wastes, one very big potential danger lies on the horizon for soymilk—that aseptic packaging will be increasingly banned, as it already has been in the state of Maine in the USA after Sept. 1990. If the manufacturers of aseptic packaging do not find a truly recyclable package or establish a workable system to recycle their current packages, soymilk could be in for hard times.

**Soymilk trends in Europe:** Though soymilk production has increased fivefold since 1984, it is still minuscule compared to cow's milk. The flavor of soymilk continues to be a major problem for most Europeans. Features/benefits attracting Europeans to soymilk are its freedom from cholesterol and lactose, and the fact that its production places less of a burden on the environment and on factory-farmed dairy cows. Most of the soymilk in Europe is sold to the natural/health food trades via health food stores and (in German speaking countries) Reform House chains. Only in France and the UK (plus a little in Belgium) is it also marketed as a mainstream product through supermarkets. A small amount is consumed by Asian-Europeans and Seventh-day Adventists. Organically grown soybeans are used in a large and increasing percentage of European soymilk. In the UK, innovative natural sweeteners (such as apple juice) have also started to be used. Private labeling: Many large European natural/health food manufacturers and/or distributors now sell soymilk under their own brand. Alpro produces many private-label brands. This practice is much more common in Europe than in the USA. Medical Soy and Parma Soia in Italy are two recent additions to this growing list. Soymilk is widely exported across national boundaries within Europe. This will probably not change much after 1992. Many large companies have entered the market since 1985 with large automated plants, but many of these are running at a small percentage of their capacity—and

thus are losing money. Because of the surpluses of cow's milk in Europe, there are many regulations (including value added taxes and labeling restrictions) against "imitation dairy products." These differ from country to country and will probably become less severe after 1992. These practices are much more restrictive in Europe than in the USA, although also in the USA soymilk is not allowed to be labeled "soymilk." European dairy magazines (unlike their counterparts in America) continue to view soymilk with fear and criticism, even ridicule, at the same time that many large European dairy companies are jumping into this new market that shows future promise—which the European cow's milk market seems not to. Address: Soyfoods Center, P.O. Box 234, Lafayette, California 94549.

476. Fehlberg, Eric C. 1990. Re: Seventh-day Adventist health food companies worldwide. Letter to William Shurtleff at Soyfoods Center, Aug. 17. 4 p. Typed, with signature on letterhead.

• **Summary:** Nutana of Holland do not manufacture the five products that are listed in my letter of May 24. Each of the products does contain soya as an ingredient, and it is my understanding that they are manufactured by Nutana of Denmark.

"Nutana of Norway, established in 1970, and you are right, it was formerly known Dagens Kost, but was renamed Nutana Norge, in 1982. In Norway they are strictly a marketing branch and do not manufacture any foods at all."

Sahm Yook Foods is the official name of the Korean Food Factory.

Alimentos Colpac is the official name of the food factory in Navojoa, Sonora, Mexico; it was established in 1969. The Montemorelos Branch is known as Alimentos Integronaturales y Panificadora la Carlota; it was established in 1981.

Granose Foods Ltd. of England moved from Stanborough Park, Watford, Herts, to Howard Way, Newport Pagnell, Bucks., in Jan. 1989. The official opening date was 9 July 1989.

PHAG (of Switzerland) is written in all upper-case letters; it is not an abbreviation of anything.

Glaxo Ltd. India has nothing to do with the Seventh-day Adventist church.

DE-VAU-GE was primarily responsible for setting up the Adventist food industry in Spain and the Kolett's brand is packed specifically for the Spanish market. DVG has two brand names which are manufactured for the reform or natural foods market in Europe: Granovita and Bosen. The products under the Bosen label were originally made in their bakery.

Pan American Health Service in Honduras still produces soymilk. Mountain View College in the Philippines is still making meat analogues and perhaps soya milk—but only for their own use. Bandung College (now called Bandung

Academy) in Indonesia is still in operation and they may be making soya products. Two years ago they wanted very much to start a food factory, but it did not happen. The Hong Kong Hospital is still operating and they still manufacture small amounts of food, basically for their own use. South China College has a long history. It was established in 1903 as Bethel Girls' School, but underwent several name changes and changes of location due to political turmoil and the Sino-Japanese war of 1937, followed by the violence of the Second World War.

"Eventually it was re-established at Clear Water Bay in Kowloon, in 1958 and a college curriculum introduced in 1962. Its name was changed to South China Union College in 1964. In 1981 they officially adopted its name and has been called Hong Kong Adventist College since then. It still operates today, and possibly manufactures small quantities of food, basically for their own use." Address: Director, International Health Food Assoc., Seventh-day Adventist General Conference, 12501 Old Columbia Pike, Silver Spring, Maryland 20904.

477. Maitre, Pierre. 1990. Current European markets for soyafoods. Lecture presented at Eurosoya Conference. Held 5-7 Sept. 1990 at Strasbourg, France. \*

• **Summary:** The following is summarised from a report by SoyaFoods (1990. 1(2):6-7). France: A study in April 1990 on 2,052 men and women showed that for 33% of respondents the word 'soya' was associated with oil. Indeed 66% had not heard of any soyafoods. Of the remaining 34%, only 19% had heard of soyamilk and 19% of soya-based desserts. Tofu and other products were less well known. Some 57% thought soya was a modern product, 66% thought soya was nutritious, and 61% thought soya was good for slimming. The reasons for not consuming soyafoods were given as follows: Never thought about it 45%. Prefer to buy my usual brands 14%. Do not like the taste 14%. Not found in shops 6%. Too expensive 5%.

For those who had tasted soyamilk or desserts, the taste was rated as follows: Soyamilk and other soy drinks: Rather good taste 58%, neither good nor bad 29%, rather bad taste 8%. Desserts: Rather good taste 61%, neither good nor bad 26%, rather bad taste 11%. As a result of this survey in France, SOJAXA is targeting its activities to address the problem of educating the consumer about soyafoods, in particular tofu which is less well known in France than soyamilk and desserts.

The UK: Most large supermarkets carry soyafoods, except Marks and Spencer. The strong interest in vegetarianism has played a major role in the development of the soyafoods market. Vegetarians represent about 8.6% of the population and the vegetarian market is estimated at about £5 billion.

Benelux: The Benelux markets are similar to France. In Belgium there are at least 11 suppliers of soyamilks.

The most popular products are drinks and desserts. Higher income groups tend to consume soyafoods.

Germany: Soyafoods are more widely carried in natural food stores (*Biolaeden*) and Reform Houses (*Reformhaeuser*) than in supermarkets. Young German consumers accept soyafoods more readily than French consumers but price is an important factor. German consumers seem to be well informed about products and the best selling items (in descending order of importance) are tofu, sauces, sausages and delicatessen products, milks, and desserts. The following percentages of shoppers in *Biolaeden* and Reform Houses have positive opinions about soyafoods: 70% in the age 20-30 group, 55% in the age 30-40 group, and 65% in the over 40 age group.

"Spain: Soyafoods development is fairly constant in Mediterranean countries such as Spain. All soyafoods are imported and are found in specialist shops, generally associated with dietetic products, e.g. calorie controlled products. Only recently have soyafoods been sold in large supermarkets. The influence of tourism has led to a changed image for soyabeans which are perceived as good for health and a modern lifestyle. Current interest is producing new products which are geared to local tastes. The most common products at present are soya drinks, desserts, sauces and soya sausages. Sales in non-specialist shops are likely to become more important.

"Italy: Soya foods and products containing soya are sold mainly for dietetic reasons.

"In summary Mr. Maitre felt that progress had been made over the years in terms of product quality, marketing, product information and international recognition, but there should be no complacency. More will need to be done to stimulate demand in Europe." Address: 18 Square les Oliviers, 13111 Coudoux-Aix en Provence, France. Phone: 33/43.52.09.44 (fax).

478. Hymowitz, Ted. 1990. Could the soybean have come from Manila to Acapulco as dunnage? The Seville manifest of all items traded between Mexico and Manila (Interview). *SoyaScan Notes*. Oct. 1. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Ted reasoned that when the Chinese were taken to Acapulco from Manila as impressed seamen on Manila galleons, the soybean was probably taken by them as part of their dunnage. Both the East India Company [of England] and the Dutch East India Company [of Holland] allowed each captain, officer, and sailor a certain amount of dunnage to trade on their own account.

The King of Spain asked the Spanish in Mexico, and also his advisors, to compile a list of all items that were traded either way from Mexico to Manila. It was a complete manifest of all items traded. This is the key document. Written in old Spanish and about 290 pages long, it was published in the 1700s. Ted obtained a microfilm copy

from Seville, and found an expert from Spain to read it; the soybean is not mentioned. Ted went to Seville for 1 day almost 20 years ago to pursue this line of research. He has never been to Mexico. In addition, the University of Illinois has a huge collection of material on the Manila-Acapulco trade.

Update. 1996. May 30. Dunnage is the key word, not ballast. Ted does not recall seeing the word “ballast” ever used in connection with soybeans coming to America in ships. Ted came across the word “dunnage” in documents in which the East India Company (and perhaps the Swedish India Company) listed the amount, by weight, that each officer was allowed to trade on their own account. This came about because there was space between the angular cargo chests (loaded with items such as tea or silk) and the curved hold (interior) of the ship. The dunnage, usually kept in cloth bags, could be padded into these irregular spaces. Ted is still looking for a document stating that soybeans were brought to North America as dunnage, but to date he has found not such record. Instead he has found records of all sorts of other rubbish being used as dunnage—bird feathers and the like.

Update. 2000. May 28. All of the original documents relating to the Manila galleons are located in either Seville, Spain, or Mexico City; they are not in Acapulco. Address: Prof. of Plant Genetics, Univ. of Illinois, Urbana, Illinois 61801. Phone: 217-333-9454.

479. USDA Foreign Agricultural Service, Information Systems Management Div., Database Administration Branch. 1990. The world's leading soybean crushing countries: Statistics by country, 1964-1990. FAS USDA Oilseeds/Products, Room 5638 South, 14th and Independence Ave. S.W., Washington, DC 20250-1000. 9 p. 28 x 38 cm computer printout.

• **Summary:** A search by Debby Pumphrey of the FACTS (Foreign Agricultural Commodity and Trade Statistics) database, for the amount of soybeans [commodity code: 2222000] crushed for domestic consumption by various countries worldwide, gives the following results, with all countries that crushed more than 500,000 tonnes ranked in descending order of amount of soybeans crushed. All figures are in metric tons (tonnes):

For the year 1990: USA 32,523,000, Brazil 13,700,000, Argentina 7,250,000, China 4,400,000, Japan 3,550,000, Netherlands 2,760,000, Germany, 2,550,000, Spain 2,300,000, Italy 2,025,000, India 1,785,000, Mexico 1,670,000, Taiwan 1,650,000, USSR 1,445,000, Belgium-Luxembourg 1,180,000, Canada 1,100,000, South Korea 840,000, Romania 789,000, Portugal 610,000, and United Kingdom 605,000.

In 1990 a total of 88,515,000 tonnes of soybeans were crushed worldwide. Of this total, the USA crushed 36.7%, Brazil crushed 15.5%, and Argentina crushed 8.2%.

For the year 1964/65: USA 13,036,000, Japan

1,460,000, China 1,304,000, West Germany 1,290,000, Canada 528,000. In 1964/65 a total of 21,357,000 tonnes of soybeans were crushed worldwide. Of this total, the USA crushed 61.0%, Japan crushed 6.8%, China crushed 6.1%, Brazil crushed 1.3%, and Argentina crushed 0.02%.

Note: At the top of the computer report is printed: Global Economic Data Exchange System [GEDES]. CP [Commodity Program] Subsystem—Commodity/Attribute Model. Crushing statistics are given for 175 countries from 1964/65 to 1990. Address: Washington, DC. Phone: 202-382-8232 or 202-447-4989.

480. **Product Name:** [Bonsoy (Soymilk)].

**Manufacturer's Name:** Mimasa (Importer). Made in Japan by Marusan. Imported via Muso Shokuhin.

**Manufacturer's Address:** Mimasa, Spain.

**Date of Introduction:** 1990.

**Ingredients:** Water, soybeans, pearl barley, kombu (sea vegetable), barley malt.

**New Product—Documentation:** Talk with Yuko Okada. 1992. July 16. Muso first exported Bonsoy soymilk to Mimasa in Spain in about 1990.

481. Heywood, Christine A.; Heywood, Vernon H.; Jackson, Peter Wyse. comps. 1990. International directory of botanical gardens V. 5th ed. Koenigstein, Germany: Koeltz Scientific Books. 1021 p. Index. 25 cm.

• **Summary:** The Directory is stored on a database at the Botanic Gardens Conservation Secretariat (Descanso House, 199 Kew Road, Richmond, Surrey TW9 3BW, UK) and will be available for updating.

In Coimbra, Portugal (for example), the botanical garden is: Jardim Botânico da Universidade, Acres de Jardim, P-3049 Coimbra, Portugal. Status: University. Date of foundation: 1774. Area: 14 hectares. Taxa in collection: 6,000. Seed list: Annual. Herbarium: 1 million specimens. Address: Richmond, Surrey, UK.

482. Tetra Pak Inc. 1991. Use of UHT/Aseptic white dairy milk in Europe and other countries, 1989. 889 Bridgeport Ave., Shelton, CT 06489. 2 p. Feb. 5. Unpublished manuscript.

• **Summary:** The following statistics are from Tetra Pak Statistics in Lausanne, Switzerland. In western Europe, 27,896 million liters of milk are consumed in total. Of this, 24,108 million liters are consumed in the eleven EEC countries. Countries not in the EEC are Austria, Cyprus, Finland, Iceland, Norway, Sweden, Switzerland, and Turkey. The four countries with the largest total milk consumption are the UK (6,687 million liters), France (3,735), Spain (3,624), and Germany (3,470). Of the all the milk consumed in Europe, 9,660 million liters (35% of the total) is packaged in UHT/Aseptic cartons. Of the all the milk consumed in the EEC, 9,376 million liters (39% of the EEC total) is packaged



in UHT/Aseptic cartons. The four countries in which UHT/Aseptic packaging is most widely used are France (3,000 million liters; 80% of all milk in France), Spain (2,125; 59%), Germany (1,578; 45%), and Italy (1,497; 52%).

Outside of Europe, the world's biggest dairy milk consumers are: USA (24,429 million liters; 0.2% UHT/Aseptic), India (5,001; 0.4%), Japan (4,803; 4%), Mexico (2,895; 8%), and Canada (2,504; 0%). Countries with the highest percentage of UHT packaging are Yemen (39 million liters of milk consumed; 95% in UHT), Pakistan (97; 92%), Saudi Arabia (158; 82%), Thailand (34; 70%), Singapore (28; 64%), and Chile (151; 61%). Address: Shelton, Connecticut.

483. Leidi, E.O.; Gomez, M. 1991. Influencia de los niveles de hierro en la absorción de manganeso por plantas de soja [Effect of iron supply on manganese uptake by soybean plants]. *Turrialba (Costa Rica)* 41(2):266-72. April/June. [17 ref. Spa; eng]

• **Summary:** "The uptake of manganese was studied in Mn-sensitive and Mn-tolerant soybean cultivars grown over a range of Fe [iron] and Mn supplies in solution culture. The Fe levels in solution affected both Mn concentration and content in all the plant parts analyzed. The decrease of Mn concentration by the increase in Fe supply was more important at high Mn levels in solution, although certain differences between cultivars were observed. Antagonism and a dilution effect caused by the enhancement of growth by increasing Fe levels could explain the changes in plant Mn levels registered." Address: U.E.I. Fisiología Vegetal, Estación Experimental del Zaidín, Granada, Spain.

484. *SoyaFoods (ASA, Europe)*. 1991. Soyafoods in Portugal. 2(2):4-5. Autumn.

• **Summary:** Portugal's 10 million people have an average annual income of \$US4,000, the second lowest in Europe. A revolutionary coup in 1974 ended a 48-year dictatorship and led to a stable democracy. In 1986 Portugal entered the European Community (EC). The population wishes to consume more and better foods. Portugal imports approximately 800,000 tonnes of soya beans per year, of which 200,000 are used as full fat soya flour. The remaining 600,000 are crushed to produce approximately 405,000 tonnes of soya bean meal used in animal feed and 105,000 tonnes of soya bean oil used in animal feed (30,000) and edible oils (75,000). There are roughly 12 soya bean oil refiners, 3 of which are also crushers.

The country has a Mediterranean-style diet with olive oil and fish. Soyfoods are sold mostly at the small number of small 'dietetic' food stores; they include soymilk (called "vegetable milk"), soya desserts, tofu, meat extenders, and soy protein concentrates. The market is still very small. Portugal has only one tofu manufacturer, Provida (located at Quinta dos Linhais, Cortegaca, 2715 Pero Pinheiro),

whose production is 2,000 kg/month. The company, whose executive director is Mr. Alcino de Sousa, also packs textured soy flour (meat extender) and estimates that the market for meat extenders in Portugal is 24 tonnes/year. Mr. Sousa is interested in a joint venture with a European or U.S. producer of tofu or soymilk. All remaining soya products available in Portugal are imported. The largest importer and distributor, Dietimport, "has 5 stores and imports and sells approximately 25 tonnes per year of textured soya protein and 20,000 litres per year of soya milk, soya desserts, and soya yogurts; it also sells 100 kg per day of tofu produced locally."

485. Takai Seisaku-sho. 1991. [Takai corporate guide]. 1-1 Inari, Nonoichi-machi, Ishikawa-ken 921, Japan. 8 panels. Nov. 1. 30 cm. [Jap; eng]

• **Summary:** This color brochure, containing 5 color photos, is written in both Japanese and English. It notes that (as of 1 Nov. 1991) Takai has exported its tofu and soymilk equipment to 140 cities of 30 countries, including Bhutan, Bolivia, Brunei, Burkina Faso, Egypt, Finland, India, North Korea, Mexico, Nepal, Philippines, Spain, Sri Lanka, Sweden, Switzerland, and Thailand.

A chronology of the company states that in July 1917 Kamejiro Takai, a former president, founded Takai & Brothers Co. It was renamed Takai Sesakusho in Jan. 1946. Address: Kanazawa, Ishikawa-ken, Japan. Phone: 0762-48-1355.

486. Gonzalez, R.; Zapatero, L.; Caravaca, F.; Carreira, J. 1991. Identification of soybean proteins responsible for respiratory allergies. *International Archives of Allergy & Applied Immunology* 95:53-57. [5 ref]\*

• **Summary:** A low-molecular weight allergen (about kDa), localized in soybean hulls, was identified as the main protein responsible for asthma epidemics in the Spanish cities of Barcelona and Cartagena. This allergen (to which 90% of the patients with asthma attacks on the days of the epidemic had specific IgE) was also shown to be different from those causing food allergy to soya. Address: Dipartimento Investigación, Alergia e Inmunología Abelló SA, 19. 28037 Madrid, Spain; and Centro de Investigaciones Biológicas, CSIC.

487. **Product Name:** [Tofu].

**Manufacturer's Name:** Natur-Soy.

**Manufacturer's Address:** Josep Gallés 36-52, 08183 Castellterçol (Barcelona), Spain. Phone: (93) 866 60 42.

**Date of Introduction:** 1991?

**How Stored:** Refrigerated.

**New Product–Documentation:** Letter from Javier Arocena Aramburu of Zuaitzo in Spain. 1992. Dec. 14. This company is one of four soyfoods manufacturers (including his own company) that he is aware of in Spain. It is owned by Tomás.

Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. Natursoy is alive and healthy at Calle Josep Galles, 36-52. 08183 Castellterçol (Barcelona), Spain.

488. Kushi, Michio. 1992. Introduction to *Culinary Treasures of Japan*, by John and Jan Belleme. 16 p. Jan. Unpublished manuscript.

• **Summary:** This manuscript, which was published in a condensed form in the actual book, tells the story of Mitoku and their work to export traditional Japanese natural foods to the Western world. Michio Kushi was instrumental in getting Mr. Akiyoshi Kazama involved in this work. Mr. Kushi, who became a World Federalist after World War II, came to the U.S. in Nov. 1949 to study at Columbia University. He continuously sought ways of establishing world peace, and increasingly came to believe that a proper diet is the basis for health, happiness, and peace.

In April 1966 the author's wife, Aveline, opened a small store named Erewhon in Boston. Michio began to search for a Japanese source for foods that Erewhon would sell. He was introduced to Mr. Kazama (who lived in Tokyo) through a Japanese friend, Mr. Obayashi, who resided at that time in New York City. Michio felt that Mr. Kazama understood his desire for foods of high quality. So Mr. Kazama "began his search for food producers and manufacturers who were sincere and willing to supply the kind of quality we requested. I know that for him, at that time, it was a great gamble. It was also a painstaking and slow step-by-step process."

Mr. Kazama was born on 1 Feb. 1930 in Yamanashi prefecture. He graduated from Waseda University in Tokyo, then was selected to study business in the United States. After arriving in Chicago, Illinois, he was drafted by the U.S. government to serve in the American Army in Korea and in Japan from 1956 to 1958. Upon his return to Japan, he settled in Tokyo where he became an import agent for a German company dealing in optics and electronics. After the Kushis contacted him, he became involved in the emerging natural food business. [He founded a company named Mitoku. Mi = Michio. To = Tomoko (Aveline's given name in Japanese). Ku = Kushi].

In 1968 Mr. Kazama made his first shipment of Japanese natural foods to Erewhon; the order was worth \$3,000. The Kushis first met Mr. Kazama in Boston in 1970. Over the years, the volume of Mitoku's exports steadily grew, and expanded to Europe, Australia, and the Middle East. Today Mitoku ships its products to about 35 countries. Approximately 40% of Mitoku's exports go to America, 40% to Europe, and 20% to Australia and other regions. Annual sales are about \$10 million. Among the major suppliers are Sendai Miso Shoyu Co. Ltd., Hatcho Miso Co. Ltd., Hagaromo Miso, Ltd., Hanamaruki Miso Co. Ltd., San Iku Foods Co. Ltd.

Distributors of Mitoku's products include the following: In the USA: Westbrae Natural Foods Inc., Great Eastern Sun Inc., U.S. Mills Inc., Tree of Life Inc., and Shojin Natural Foods (Hawaii). In Canada: Koyo Foods Inc., Flora Distributors Ltd., and Timbaktu. In Costa Rica: Distribuidora de Productos Macrobianos S.A. In England: Sunwheel Foods Ltd, Clearspring Natural Grocer, Meridian Foods Ltd. In France: Celnat, Tama. In Belgium: Lima N.V. In the United Arab Emirates: Emirates Trading & Marketing Est. In South Africa: Key Health. In Austria: Naturkostladen, Lebenszeichen. In Switzerland: S'lotusbluemli, Terrasana, Futonhaus. In Sweden: Kung Markatta. In Norway: Alternative Import. In Finland: Makro Bios. In Portugal: Armazens Da Matinha. In Spain: Kunga. In Italy: La Finestra Sul Cielo, Probios S.R.L., Dalla Terra al Cielo, Solo Natura. In Israel: Tivoli Ltd. In Australia: Pureharvest. In New Zealand: Enso. In Singapore: Nature's Best. In Yugoslavia: General Export. In Japan: Seibu Department Stores Ltd., Tokyu Department Stores Ltd. Among the countries reached indirectly through trans-shipment are Hungary, reached through Austria, various South American countries reached through the United States, and other countries such as Poland, Czechoslovakia, Iceland, Andorra, Ireland and the Caribbean Islands.

As Mitoku developed its international operations, Mr. Kazama hired many students from Western countries, including Blake Rankin (USA), Ferro Ledvinka (Italy), Christopher Geoffrey Dawson (New Zealand, starting 1979), Robbie Swinnerton (England), Terrie Adams (USA), and Michelle Harbroun (France).

"For the past 10 years, Mitoku has echoed and supported the macrobiotic perspective with its motto 'Isshoku-Dogen.' These words, though they have been forgotten in the last few centuries by the very people in the health care field who should remember them well, mean literally 'medicine and food have the same source,' and can be translated as 'food is medicine.' This saying has been used and known as part of the ancestral heritage of wisdom transmitted from generation to generation for several thousand years in Oriental countries such as China, Korea and Japan.

"In an attempt to preserve Japanese traditions, Japan has instituted a 'Living Treasures' program granting official recognition and support to [living masters in] various cultural areas such as theater, music, dance, sculpture, carpentry, weaving... and arts and crafts. Ironically, though, Japan has not granted the same official recognition to its traditional methods of food processing and production in spite of the fact that increasingly large numbers of people throughout the world are now appreciating traditionally processed Japanese food products and have become aware of their important health benefits. The Japanese traditional arts of producing miso, soy sauce, tofu, natto, amazake, rice vinegar, sake, mirin, condiments and pickles as well as cooking methods and preparation are unique among the culinary practices of

the world... These foods are also works of art... It is my hope and recommendation that official recognition and support be granted by the 'Living Treasures of Japan' to those who have dedicated their life to the traditional art of food production and processing in spite of the hardships and commercial disadvantages they are compelled to face in business competition and present-day economical conditions."  
Address: 62 Buckminster Rd., Brookline, Massachusetts 02146.

489. Yamawaki, Teijirô. 1992. The Comprador Merchant Guild [*Konpura Nakama*] (1-2). In: Yamawaki, Teijirô. 1992. "Soy Sauce Export in the Edo Period—According to the Nagasaki Trading Firm Journal." A Translation of *Edo jidai shôyu no kaigai yushutsu*. Noda, Japan: Kikkoman Institute for International Food Culture (KIIFC). 16 panels. See panels 14 and 15. [1 ref. Eng]

• **Summary:** The "Comprador Merchant Guild" refers to the group of merchants who were authorized to coordinate the trading of commodity goods, exported products and freight between the Dutch staff at the Nagasaki Trading Firm [Dutch East India Company, or VOC] or the Dutch sailors and Japanese merchants.

*Comprador* is the Portuguese word for "buyer." The Comprador Merchant Guild, an abbreviation of the "Merchant Guild for the Sales of Various Goods at Dejima," was established in 1666 by 16 merchants under the authorization of Michisada Kono, the governor of Nagasaki. (The number of members increased to 17 at one stage.) They were the privileged group of merchants whose marketing rights were assured by the governor of Nagasaki.

The Comprador Merchant Guild was generally thought to have sold goods to Dutch merchants, but actually they worked for the Dutch merchants as their buyer in order to gain margin profits. The name, "Merchant Guild for the Sales of Various Goods at Dejima" refers exactly to this kind of activity.

In Nagasaki, in addition to the Comprador Merchant Guild, there was the Interpreter Guild, a group of interpreters who assisted the transaction of trading private freights. They gained commissions by interpreting and coordinating the trading of *waki nimotsu* ("private trade freight") under the license granted by the governor of Nagasaki in 1670. In the *Nagasaki Public Service Yearbook* written in 1701, 16 comprador guild merchants were counted as part of the 90 guild interpreters. Hence the comprador guild merchants and guild interpreters were treated as having the same social status.

History of the Comprador Merchant Guild: As mentioned in Panel 14, the guild was established in 1666 under the authorization of Michisada Kono, governor of Nagasaki. We now are going to take a closer look at the history of the Guild. (Excerpt from Episodes associated with Comprador Bottles, Masao Ichikawa).

In 1642, when the Hirado Dutch Trading Firm [part of the Dutch East India Co., or VOC] was relocated to Deshima / Dejima, a tiny artificial island in Nagasaki harbor, Heizaemon Koyanagi and Bunzaemon Kujiraya, two merchants engaged in the marketing of Dutch merchant goods in Hirado, accompanied the Dutch merchants and were given permission to continue business operations in Nagasaki. Later, in 1653, when the business became more prosperous, they recruited Rihei Hirayama and three other merchants from Hirado. Hence the merchant guild by this time was organized by six merchants. In 1666, Hikozaemon Murata and another nine merchants joined and the 16-member guild was established. Since then the number of the guild merchants has remained the same, except for a certain period when it consisted of 17 merchants.

The number of guild shares was fixed at 16. There were no restrictions concerning exchange of shares, and they were transferred to member's descendents, friends or relatives. In 1858, when a trading treaty with the Netherlands, England, France and Russia became effective, the guild ceased to enjoy its commercial privileges, and the original purpose of the guild disappeared. So in June 1868 the merchant guild branched out into new businesses including the manufacturing and/or distribution of bread. In 1874, however, because of a slump in business, the Comprador Merchant Guild dissolved; the shares and sales office were sold, and the assets divided between the guild merchants.

Besides their regular business operations, the Comprador Guild Merchants were ordered by the Edo Shogunate to accompany the Dutch to Edo in 1844, 1850 and 1855, and to supervise them in the purchase of prohibited goods or to assist them as transaction agents. Address: Lecturer, Tokyo Metropolitan Daisan High School of Business Studies; Dep. of Literature and Graduate School of Hosei Univ., Tokyo, Japan.

490. Yamawaki, Teijirô. 1992. *Edo jidai shôyu no kaigai yushutsu* [Exports of shoyu from Japan during the Edo Period]. In: 1992. Noda Shishi Kenkyu (Studies of Noda History), Vol. 3. Noda, Japan: Shishi Hensan (Noda City History Editorial Committee). See p. 63-93. March. 30 cm. [50 ref. Jap]

• **Summary:** This is one of the best sources known on the subject, which includes much information on the export of shoyu from Japan to other parts of Asia and to the Netherlands by the Dutch East India Company (VOC).

Chronology and basic concepts: Almost all shoyu (soy sauce) exported from Japan during the 1600s and 1700s (and all soy sauce exported officially or legally) was exported from a tiny man-made island named Dejima in Nagasaki Harbor. Most of it was exported by the Dutch East India Company (VOC), which was the only European company allowed to trade with Japan during this period of isolation from 1600 to 1854. The Japanese government classified



all soy sauce exported from Deshima into two basic types: (1) Official trade freight (*motokata nimotsu*, also called *compania nimotsu*), and (2) Private trade freight (*waki nimotsu*, also called *yakusha / sojya* {staff / sailor} *nimotsu*). Official trade freight was the kind engaged in by the Dutch East India Co.; this freight was recorded in the Nagasaki Trading Firm Journal. Private trade freight referred to the goods traded privately by Dutch sailors and by the chief and staff working at the Nagasaki Trading Firm.

Note: In about 1600 the Chinese obtained an official trade permit and settled in Nagasaki. At the peak of Chinese activity there, about a century later, as many as 190 Chinese ships a year were visiting Nagasaki, and one-sixth of the town's population hailed from the East Asian mainland.

1609-1641—The Dutch East India Co. (VOC) maintains a trading post at Hirado, a small island off the northwest coast of Kyushu.

1634—Dejima (literally “protruding island,” also spelled Deshima), a small artificial island in Nagasaki Harbor is constructed as ordered by shogun Iemitsu; it originally accommodated Portuguese merchants.

1638-1639—The Portuguese (and other Catholic nations) are expelled from Japan for suspected complicity in the Shimabara Revolt of 1637.

1641 May—The Dutch East India Co. is moved from Hirado to Dejima, where they were kept almost like prisoners on the tiny island. For 200 years, Dutch merchants were generally not allowed to cross the little bridge from Dejima to Nagasaki, and Japanese were likewise banned from entering Dejima. From 1641 to 1853 the Dutch are the only Western nation allowed to trade with or to enter Japan, but solely on Dejima. Chinese and Korean traders are still welcome, but their movements are restricted.

Dutch ship arrivals: From 1641 to 1671 an average of 7 ships per year. From 1671 to 1715 about 5 per year. From 1715, only 2 ships were permitted each year; this was reduced to 1 ship in 1790 and again increased to 2 ships in 1799.

1647—Exporting of shoyu (soy sauce) to Asia from Japan (as official trade freight) began. The first shipment was 10 kegs (*taru / balien*) sent to Amping, on today's Taiwan, by the VOC's Taiwan Trading Firm. From 1647 to 1720, this shoyu was exported from the Nagasaki Trading Firm to each regional trading firm in Asia, including today's Hanoi, Vietnam (1652); Ayuthaya, Thailand (1657), Jakarta, Indonesia (1659), Malaca, Malaysia (about 1660), 250 km northwest of Phnom Penh, Cambodia (1665), Paliacatta, 40 km north of Madras, India (1666), Bengal region, India (1666), Colombo, Sri Lanka (1670), Surat, northwest coast of India (1672), Amboina, Banda, and Ternate, in the Moluccas, Indonesia (1693), Sulawesi Island (Celebes), Indonesia (1693).

Note: This document contains the earliest date seen (May 2010) for soybean products (shoyu) in Cambodia

(1665); soybeans as such had not yet been reported by that date.

1685—The Shogunate at Edo limits the amount of “private trade freight” to 400 *kan* (1 *kan* = about 3.75 kg), or about 1,500 kg or 3,300 lb.

1669 March 31—20 kegs of shoyu are shipped from Japan to Batavia on a Chinese ship (Source: Diary of Casteel Batavia). This is the earliest document seen showing a Chinese ship exporting shoyu from Japan.

1687—20 kegs of shoyu made in Kyoto (1 keg = about 29.104 liters) is shipped to the Ceylon (today's Sri Lanka) trading headquarters. It is believed to have been made by a sake brewer in Kyoto. At that time, Sakai city, a southern suburb of Osaka city, was located on the edge of Osaka Bay at the mouth of the Yamato River. It is one of the largest and most important seaports in Japan during the Medieval era, and is also famous in the Kyoto/Osaka area (along with Kyoto) for its soy sauce production. During the period 1764-1780 shoyu was made in Sakai by 4 manufacturers, including Shobei Hosoya. Soy sauce made in Sakai was transported by ships along the Inland Sea (north of Shikoku), through the narrow straight between northern Kyushu and Shimonoseki, around the north and west sides of Kyushu, to Nagasaki. These ships from Sakai were called the “Sakai Raw Silk Carrier Boat” or *Sakai Bune*. They had been authorized to ship imported silk from Nagasaki since the Keichō period (1596-1611) of Edo era. The ship was empty going back from Sakai to Nagasaki and the space was used for soy sauce exports. Much of the shoyu exported from Japan to the Netherlands is thought to have been made in the Kyoto / Osaka area. It was probably made mainly in Sakai, while that made in Kyoto was exported in small amounts for special occasions. Extremely low priced shoyu is thought to have been made in Kyushu, and exported to China. None of the shoyu exported during the Edo / Tokugawa period (1600-1867) was made in the Edo / Tokyo (*Kanto*) area.

1711—In the Chinese and Western Freight Log it is recorded that 61 kegs of shoyu (56 large kegs and small kegs) as well as 40 kegs of miso were exported as “official trade freight,” whereas 867 kegs were exported as “private trade freight.” Thus, the private freight (in this rare year where records exist) was about 8 times as much as the official freight.

1712—Some 999 kegs of shoyu and miso are exported as “private trade freight.” Unfortunately we are not told how many of these contained shoyu and how many contained miso.

1721-1792—The VOC exports Japanese shoyu only to its trading headquarters at Batavia (today's Jakarta, Indonesia); from there it is transferred to each regional trading firm.

1737—The VOC first exports Japanese shoyu to the Netherlands, from its Batavia headquarters. Thus, Japanese soy sauce first arrived in the Netherlands (and in Europe) in 1737. All this shoyu was exported as “official trade freight.”

This export route was used until 1760. During the 24 years from 1737 to 1760, approximately 46,000 liters of soy sauce were exported from Dejima to the Batavia headquarters, and 15,600 liters (about 1/3 of the total) were then shipped from Batavia to the Netherlands. In 1742 and 1743, no shoyu was transshipped from Batavia to the Netherlands. Thus, during the 22 years that shoyu was transshipped from Batavia to the Netherlands as “official trade freight” was about 707 liters/year. The amount exported was calculated based on the capacity of the “large keg” (29.104 liters); the small keg held exactly half this capacity (14.552 liters). In addition, a substantial amount of shoyu was presumably exported from Batavia to the Netherlands as “private trade freight.”

Also in 1737 the limit of 400 *kan* on “private trade freight” is abolished, so that any amount can be exported in this way.

1790—Shoyu is first exported from Japan in comprador bottles; these bottles, made of grey / white porcelain, were recorded as “sterilized soy sauce” and 550 of them were used this year to export shoyu.

1795—The book titled *Travels in Europe, Africa, and Asia, Made between the Years 1770 and 1779...*, by Charles Peter Thunberg (a Swede) is published in English. An entry from about the year 1776 (Vol. 4, p. 107), in the chapter on Commerce, reads: The traffic in Soy [sauce]... is more considerable [than that of tea. Japanese] soy is much better than that which is brewed in China. For this reason, soy is not only exported to Batavia [Jakarta], in the wooden kegs in which it is made, but likewise sold from thence to Europe and to every part of the East Indies. In some places in Japan too the soy is reckoned still better than in others; but, in order to preserve the very best sort, and prevent its undergoing a fermentation, in consequence of the heat of the climate, and thus being totally spoiled, the Dutch at the Factory [at Desima / Dezima / Dejima] boil it up in iron kettles, and afterwards draw it off into bottles, which are then well corked and sealed [by applying bitumen / coal tar to the stopper]. This mode of treatment renders it stronger and preserves it better, and makes it serviceable for all kinds of sauce.

Note: This early discovery of pasteurization and sealing in porcelain bottles explains how the Dutch were able to keep this soy sauce from spoiling becoming overfermented while it was being shipped from tropical Japan, to Batavia [Jakarta], across the Equator, around the Cape of Good Hope (south of Africa), then all the way to the Netherlands.

1799—The Dutch East India Co. (VOC) is dissolved.

1804-1829—A total of 2,672 kegs of shoyu is exported in Chinese ships during most of these 26 years from Japan. About 153 kegs/year are exported (range: 12 to 322 kegs, but with no exports in 1805, 1816-18, 1824-28).

1854—Japan’s policy of self-imposed national isolation is abolished / ended. Shoyu can be exported freely, without limits.

Some 670 liters a year went to Holland. The soy sauce to be sent to Holland was put in a special container with special outside packaging. The shoyu that was exported was made mostly in Kyoto. In 1765 the famous French-language *Encyclopedia*, by Denis Diderot, had a section on soy sauce.

Brief biography of Teijirō Yamawaki: 1914—Born in Japan. 1950—Graduated from Tokyo University, Dep. of Literature, Faculty of Japanese History. 1954—Awarded his doctorate (PhD) in history from Tokyo Univ. Between 1960 and 2002 he was the author of at least 8 books in Japanese including: (1) *Smuggling (Nukeni)* (1965, Nikkei Shinsho). (2) *Trading with Chinese Merchants in Nagasaki* (1964, Yoshikawa-kobunkan). (3) *Nagasaki Trading Firm of Dutch Merchants* (1980, Chiokoron). (4) *Encyclopedia of Silk and Cotton during the Edo Period (Jiten Kinu to Momen no Edo Jidai)* (2002, Yoshikawa-kobunkan, Tokyo, 230 p.).

Note: See also the excellent 16-page English-language summary of this report prepared and published by Kikkoman Institute for International Food Culture (KIIFC) in Noda, Japan. Address: Japan.

491. Frost & Sullivan Inc. 1992. The European market for protein ingredients. New York, NY: F&S. 383 p. #E1712/P. 98 tables. 6 figures.

• **Summary:** “Sales of protein ingredients to the food industry in Western Europe in 1991 amounted to \$1.3 billion. This is expected to increase to \$1.5 billion by 1996.” Contents: Executive summary. 1. Introduction, scope and methodology. 2. Protein ingredients—Technology, economics and trends: Introduction, vegetable proteins (soy flour and grits, soy protein concentrates, soy protein isolates, textured soy proteins, wheat gluten), animal proteins (milk-based, egg-based, other, single cell proteins incl. yeast and mycoproteins). 3. End-user markets for protein ingredients—Industry requirements, historical and future developments: Introduction, nutrition claims, the food industry (meat and meat products, dairy products and desserts, bakery and cereal products, specialty infant and health food, pet foods, miscellaneous foods). 4. The markets for protein ingredients in Western Europe: Germany (For each country is given: The food industry, protein ingredients off-take by the food industry, sales of protein ingredients to the food industry, volume off-take of protein ingredients by the food industry, sales of protein ingredients by type), United Kingdom, France, Italy, The Benelux countries, Spain and Portugal, other EC countries, other Western European countries. 5. Profiles of major suppliers of protein ingredients in Western Europe: Includes Aarhus Oliefabrik, Archer Daniels Midland Co., British Arkady Co., BSN, Cargill, Central Soya, Dalgety, Danmark Protein, Eridania/Beghin-Sey [sic, Say], Loders Croklaan, Lucas Meyer, Natterman Phospholipid, Nestle, Protein Technologies, International, RHM Ingredients Ltd., Solnuts BV, Unilever Group. Appendices. A. Names and addresses of suppliers of protein ingredients in Western

Europe. B. Company index. Address: 106 Fulton St., New York, NY 10038. Phone: 212-233-1080.

492. Bergh, Barbara. 1992. The Canadian oilseed processing sector: A profile. In: Statistics Canada. 1992. Grain Trade of Canada 1990-91. Ottawa, ONT, Canada: Statistics Canada. See p. 23-32. [Eng; Fre]

• **Summary:** Contents: Oilseed situation. Crushing industry. Vegetable oils. Vegetable oilmeals. Economic value of the industry. Policy issues and recommendations by the Canola Marketing Task Force. "The main oilseed crops produced in Canada are [in descending order of the amount produced], canola, soybeans, flaxseed and sunflower seed. There has been an almost continuous increase in the production of oilseeds since 1950, with the largest increase being in canola production which will reach a record 4.3 million tonnes in 1988/89. There was a record 1.3 million tonnes of soybeans produced in 1990/91. A bar chart shows the amount of Canada's four major oilseeds produced every 5 years from 1950 to 1990. "Only small amounts of oilseeds are imported into Canada, but significant amounts are exported. In 1990/91, 99% of canola exports went to Japan, while soybean exports were destined mainly for the U.S., Netherlands, Portugal, Hong Kong, Japan and Singapore."

One of Canada's three soybean crushing plants closed in 1991 causing a drop in soybean crush capacity from 3,700 to 2,500 tonnes per day. Of this, CanAmera Foods in Hamilton, Ontario, has 1,270 tonnes, and ADM Agri-Industries Ltd. [in Windsor, Ontario] has 1,250.

"The two major oilseeds processed in Canada are canola and soybeans, with small amounts of sunflower seed and flaxseed also being crushed. Canola is crushed mainly for its oil as its seed yields about 40% oil and 60% meal. Soybeans are crushed more for the meal since they yield about 78% meal and only 17.5% oil. Sunflower seed yields 42% oil and 35.5% meal, while flaxseed yields 34% oil and 63% meal..."

"In 1990/91, 44% of the domestic canola crop was crushed, compared with 72% for soybeans, 70% for sunflower seed and 1% for flaxseed."

"In 1990/91, 0.8 million tons of crude vegetable oils were produced in Canada... Canola oil accounted for 74% of total vegetable oil production in Canada, followed by soybean oil at 21%, sunflower oil at 4% and linseed oil at 1%. In addition, approximately 25.0 thousand tonnes of corn oil are produced annually."

"Soybean meal is the major vegetable oilmeal used in Canada, accounting for 76% of the total oilmeal consumption in 1990/91. Canola meal is next, accounting for 22% of total domestic use, followed by sunflower and linseed meals which accounted for 1% or less." Soybean meal contains 48% protein, whereas canola meal contains only 36-37% protein; it contains more fiber than soybean meal and has less digestible energy.

As of 1 Jan. 1992, Canadian soybeans, crude soybean

oil, soybean meal, canola seed, crude and refined canola oil and meal all have tariff-free access to the USA. Refined soybean oil will be duty free as of 1 Jan. 1995. Address: Market Analyst, Canadian Oilseed Processors Assoc., 1010-360 Main St., Winnipeg, Manitoba R3C 3Z3, Canada. Phone: 204-942-3408.

493. Okada, Yuko. 1992. How Muso Shokuhin brought soymilk to America (Interview). *SoyaScan Notes*. July 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Muso wanted to introduce Marusan's soymilk in the foil retort pouch to the USA. They began looking for a major American distributor. First they offered the product to Mike Potter of Eden Foods when Mike was in Japan, but he was not interested because he did not think the product would sell in America. Then they offered the product to Jimmy Silver of Pure Sales; he thought it was a weird product. Then they offered it to Knudson, but Knudson was not interested. Then they offered it to Matt Sandler, who also turned it down.

The first place this soymilk really sold outside Japan was in Australia; Jim Wilson, owner of Spiral Foods in Australia started importing this soymilk (which was named Bonsoy) from Muso in about 1979, packaged in a foil retort pouch. Mike Potter met Jim Wilson at a natural foods convention in Anaheim, California; Muso brought Jim Wilson to the convention and arranged this meeting. Wilson told Potter that Bonsoy sold very well in Australia. Potter told Ron Roller to go to Japan to check out this product—which Ron did. Finally the product was launched at the NNFA show in Denver, Colorado, under the name Edensoy by Eden Foods.

The product named Bonsoy was first sold (exported) by Muso to Spiral Foods in Australia in about 1979. Then it was sold to Bean Supreme in New Zealand in about 1981; Bean Supreme had also promoted the Spiral Foods label. Then it was exported by Muso to Urtekram in Denmark in about 1988, and then it was exported to Mimasa in Spain in about 1990. Address: Muso Co., Ltd., Kosei Bldg., 2nd Floor, Tanimachi 2-5-5, Chuo-ku, Osaka 540, Japan. Phone: 1. 06-942-0341.

494. *Oil Market Listener (Energy Listener Series) (Energy Information Limited, NYC)*. 1992. Environmental report: Growing interest in biodiesel fuel despite relatively high-cost production. Aug. 3. 4 p.

• **Summary:** Contents: Executive summary. Buses at Olympics in Barcelona, Spain. Biodiesel provides source of clean, renewable alternative to diesel fuel. Cost of production poses most significant hurdle for biodiesel. Biodiesel shares problems encountered by other biofuels. EC proposed tax incentives for biodiesel opposed by oil companies [in Europe]. Biodiesel market in US likely to center around alternative-fuel vehicle fleets.

Includes two attachments: (1) Trip report to Ferruzzi in



Milan, Italy, by Joseph Roetheli (USDA) to Daniel Kugler (27 March 1992, 5 p.). (2) "Germans design engines for vegetable oil fuels." Inform news release (Feb. 1992, 2 p.). (3) "City of Florence to use Diesel-Bi to cut polluting emissions." Ferruzzi news release (22 Jan. 1992, 2 p.).

495. Stewart, Penelope. 1992. Re: Planning to start a tofu shop in Pamplona, Spain. Letter to William Shurtleff at Soyfoods Center, Sept. 7. 1 p. Handwritten. [Eng]

• **Summary:** Growing up in California her entire life, she took tofu and soy products for granted. She has just finished reading *The Book of Tofu*, by Shurtleff and Aoyagi. She would like to order a copy of *Tofu and Soymilk Production*. Address: Colite 23, bajo [or c/o Lite 23, bajo], Pamplona, Navarra, Spain.

496. D'Ambrosio, Michele. 1992. Tofu spread sold refrigerated in a shallow pottery crock in Spain (Interview). *SoyaScan Notes*. Sept. 22. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Michele was in Spain recently, in the town of Figueras, population 23,000, in Gerona province, of northeast Spain, in the eastern Pyrenees Mountains, 24 miles north of Gerona. There she saw a unique very simple tofu spread, seasoned only with thyme, sold refrigerated at the only health food store in the city. The store also sold a lot of breads. It was packed in a tan glazed shallow pottery dish/container, weighing about 6 ounces. She loved the spread and even took the little dish home with her. Note: This container is reminiscent of the way that Chinese fermented tofu has long been packed. Address: 6441-43 Haverford Rd., Philadelphia, Pennsylvania 19151. Phone: 215-474-8636.

497. Davis, Susan. 1992. Tank up with SoyDiesel: Clean Air Act pumps interest in alternative fuel. *Soybean Digest*. Aug/Sept. p. 10-11.

• **Summary:** Leon Schumacher of the University of Missouri-Columbia, tests and drives a Dodge pickup with "Powered by Soybean Oil" printed on the tailgate. It turns plenty of heads and evokes the "thumbs up" sign. What started as a simple research project has exploded into a national campaign. "SoyDiesel is made by esterifying degummed soybean oil. As requirements of the Clean Air Act of 1990 start to take effect, "everything from boats to buses will be required to reduce emissions." Tests have shown that SoyDiesel can cut pollution by up to 86%.

Bill Ayres, vice president of Interchem Industries, has a pilot plant manufacturing SoyDiesel at Leawood, Kansas. It sells for \$2.50/gallon compared to \$1 for regular diesel. "Interchem has 15 million gallons of SoyDiesel available and plans to build a new plant for additional production. Cargill, ADM, and Ag Processing [AGP] are exploring building esterification plants near soybean processing plants."

One problem with SoyDiesel is that it jells at 28 degrees

F, according to Bill Ayres.

Ferruzzi-Montedison is building a plant in Livorno, Italy, to make 18 million gallons a year of Diesel-Bi.

A sidebar, titled "Projects hit the road," discusses: Sunrider: USB is "providing 17,500 gallons of 100% SoyDiesel and funding a \$60,000 educational program." Ferruzzi-Montedison is testing two buses in Sioux Falls, South Dakota. During the summer Olympics in Barcelona, Spain, vehicles will use Diesel-Bi. Bi-State Industries fuels 60 buses in the greater St. Louis, Missouri, area with a blend of 25% soy and 75% diesel. MSMC is funding a project with five tractors. "More than 100 maintenance vehicles at Lambert International Airport in St. Louis, Missouri, run on a 30% methyl soyate blend. Missouri, Ohio, Michigan, and Nebraska use SoyDiesel in demonstration vehicles."

A photo shows Kenlon Johannes standing by the rear of a Ford pickup truck. The license plate reads "Soy-Oil."

498. CSY Agri-Processing, Inc. 1992. Fact sheet (Brochure). Fort Wayne, Indiana: Public Relations Dept., Central Soya Co., Inc. 4 p. 28 cm.

• **Summary:** CSY Agri-Processing, Inc. is an international agribusiness company with holdings in the oilseed processing, feed manufacturing, and pork processing industries. The corporation is a Ferruzzi-Montedison company, operating as a member of the Eridania Beghin-Say agro-industrial group. The five primary holdings of CSY Agri-Processing, Inc. are Central Soya Company, Inc.,—Oilseed Products Group, Central Soya Feed Company, Inc., Provimi Holding B.V., Innovative Pork Concepts, and CanAmera Foods.

CSY Agri-Processing generates more than \$2 billion in annual sales, and its various businesses employ approximately 4,000 people. Almost all of the holding company's principal operations—soybean processing, feed manufacturing, grain merchandising, vegetable oil refining, the manufacture of soy proteins and lecithins, and pork processing—involve the acquisition of agricultural products and their resale in processed form. The company is headquartered in Fort Wayne, Indiana, and counts among its holdings more than 70 plants and facilities throughout the world.

The five primary holdings are: (1) Central Soya Company, Inc.—Oilseed Products Group, which operates nine complexes and has 3 divisions: Soybean Processing Div. (owns 6 soybean processing plants with a capacity to crush about 100 million bushels annually), Refined Oil Div. (refines more than 600 million pounds of vegetable oils annually), and Chemurgy Div. (a world leader in the manufacture and marketing of soy proteins, lecithins, and related products).

(2) Central Soya Feed Co. has 3 divisions: Domestic Feed Div. (whose brands include Master Mix, Tindle Feeds, Farmacy, and Lipscomb's), Animal Health and Nutrition

Div., and International Feed Div.

(3) Provimi Holding B.V. is the holding company for CSY Agri-Processing's European Feed operations, which include 14 feed and premix plants in Portugal, France, Switzerland, The Netherlands, Belgium, Greece, Italy, Poland and Hungary. Provimi Holding's operations market more than 200 basic poultry, swine, dairy, beef and specialty feeds under the Master Mix, Provimi, Protector, Celtic, and Vetem brand names.

(4) Innovative Pork Concepts is a CSY Agri-Processing unit that has formed a pork processing joint venture with Mitsubishi Corporation and Mitsubishi International Corporation. The joint venture, named Indiana Packers Co., operates a 300,000 square foot automated pork processing facility with a capacity to process 600 hogs per hour in Delphi, Indiana.

(5) CanAmera Foods is a Canadian oilseed processing and vegetable oil refining joint venture, formed in March of 1992. It is Canada's largest oilseed processing and refining business, and was formed through the combining of the operations of CSP Foods Ltd. and Central Soya of Canada Ltd., and the subsequent acquisition of the edible oils business of Maple Leaf Foods by the new venture. CanAmera Foods operates five crushing plants and five edible oil refineries.

The fully integrated, equally-owned joint venture has a strong presence throughout Canada and good access to U.S. and offshore markets. Its strategically located plants have both soybean and canola crushing capability, and produce a broad line of edible oil products marketed under well-known trademarks and brand names.

"Research: Heavy emphasis is placed on research and technology by each of the operating units of CSY Agri-Processing. Research is divided into two groups: Feed Research, with operations in Decatur, Indiana and Kerkdriel, The Netherlands; and Oilseeds Research, headquartered in Fort Wayne."

Note: Central Soya's parent company is Eridania Beghin-Say (EBS), which is headquartered in Paris. This is a newly formed agro-industrial group, that includes anything related to food and processing of agricultural products or commodities. It does market some foods at the retail level. Eridania was an oilseed processor and Beghin-Say processed sugar beets. One company in the group processes starch. Central Soya is the only U.S. company in the group; the rest are in Europe. Cereol is a conglomerate of European soybean crushers. Between 1985 and today, the Eridania Beghin-Say's revenues have more than quadrupled to more than \$9,400 million, making it the 6th largest food company in the world considering food products exclusively. "This growth has placed Eridania Beghin-Say in important leadership positions within the EC and North American markets in the sugar, starch and starch derivatives, oilseed processing, and animal feed areas, as well as in certain major segments of the

consumer food products area such as consumer oils, sauces, condiments, and spices. EBS's entry into the consumer food products market with well-known brands like Lesieur, Kiope, Carapelli and Ducros has constituted one of the most important components of the company's growth strategy." Address: P.O. Box 1400, Fort Wayne, Indiana 46801-1400. Phone: 219/425-5100.

**499. Product Name:** [Tofu and Apple Syrup Cake, Tofu-Cheese and Vegetables Cake].

**Manufacturer's Name:** La Sojeria, S.C.

**Manufacturer's Address:** Carretera de Vic Km. 30, 08180 Moia (near Barcelona), Spain. Phone: (93) 830 1123.

**Date of Introduction:** 1992 October.

**Wt/Vol., Packaging, Price:** In aluminum trays and vacuum packed in plastic.

**New Product-Documentation:** Letter from Javier Arocena of Zuaitzo, Spain. 1992. Dec. 14. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

Form filled out by Laura Cami and Mario Rimoldi of La Sojeria. 1993. Feb. 13. Their company introduced these products in Oct. 1992. They now make about 160 lb/month of each product. These 2 varieties of cakes are sold in aluminum trays and vacuum packed in plastic.

**500. Product Name:** [Alisana Soya Yogert (Peach & Passion Fruit, Black Cherry, Strawberry, Orange, or Natural)].

**Manufacturer's Name:** Arkady ADM Iberica S.A. Made in Clwyd, Wales, by Genice Foods Ltd.

**Manufacturer's Address:** Carretera de Hosplatalet 42, Cornellà de Llobregat, Barcelona, Spain. Phone: 050981-6611.

**Date of Introduction:** 1992 November.

**Ingredients:** Black cherry: Habas de soya descascarillada, starter Bulgaricus, pulpa de cerezas, y zumo de fruta.

**Wt/Vol., Packaging, Price:** 4 x 120 gm cups packed under a long paperboard sleeve.

**How Stored:** Shelf stable, 4-month shelf life at room temperature. Refrigerate after opening.

**New Product-Documentation:** Talk with Ray Pierce of Genice Foods Ltd. 1994. Feb. 4 and 8. Starting in 1992 Genice started to sell its soy yogurts outside the UK. First in 1992 the So Good line of soy yogurts was launched in Spain (for Arkady Iberica, an ADM-owned company located in Barcelona) with the addition of two new flavors—orange and natural. In late 1992 the Spaniards requested their own brand, so So Good was changed to Alisana; Four Soya Yogerts (120 gm each) were sold in each pack.

Label (sleeve and cup for cherry flavor) sent by Ray Pierce. 1994. Feb. 18. This colorful sleeve is 11.25 by 4.5 inches. A color illustration in orange, red, purple, green and peach on white shows scattered fruits on a white background.



The lettering, which is blue and black, reads “Alisana: 4 Soya Yogerts.” The cup is cherry red and blue on white.

501. *SoyaFoods (ASA, Europe)*. 1992. A profile of Sojinal. 3(3):6-7. Autumn.

• **Summary:** The author visited the Sojinal factory where she talked with Mr. Rochet (Director General) and Eric Dubs (Export Manager). “Sojinal is based at Issenheim in Alsace (in eastern France near the German border), where much of France’s soyabean crop is grown. Employing just over 20 people (only 6 on the production side) the office, factory and laboratories, which overlook beautiful Alsatian countryside, cover some 5 hectares. Ownership is split between a farming cooperative (65%) and 3 companies (18% Sofiproteol, 9% Unigrain and 8% Lavaur)...

“A recent survey of French consumers showed that 18% know about tonyu but only 1% regularly drink it at least once a week...

“Sojinal processes about 4,000 tonnes of soyabeans per year... Sojinal’s product range falls into two areas: ingredients for the food industry and final retail products. Ingredients for the food sector are manufactured at Issenheim, but most of the retail products are produced elsewhere for Sojinal using Sojinal ingredients and recipes.

“Ingredients for the food industry include: hulled soya beans, fibre, tofu, soya pulp (okara), concentrated tofu, tonyu, soyapaste, and spray-dried soya powder [dried soymilk]. Applications are summarized in Table 1.

“A wide variety of products are produced for supermarkets (Ligne S) and health food outlets (Formoja). Sojinal retail food products are sold under the Biosoja name and include soya drinks and desserts, ready meals made from tofu, chocolate bars, vegetable soya patés and sauces and dressings (Table 2)...

“Sojinal’s soymilk is already No. 1 in Spain.”

A photo shows the company’s plant and offices.

502. Arocena, Javier. 1992. [Re: Recent developments at Zuaitzo]. Letter to William Shurtleff at Soyfoods Center, Dec. 14. 2 p. Typed, with signature on letterhead. [Spa; eng+]

• **Summary:** In June 1988 he moved his company to Plaza Santa Maria, 01001 Vitoria-Gasteiz. He knows of three other soyfoods manufacturers in Spain: Natur-Soy, Vegetalia, and La Sojeria, all near Barcelona.

“I was a pioneer in the production of tofu and seitan in Spain but for the last 12 years I have kept on doing the same thing, working only at the family level, making little but doing it well.

“Now we are living in the country at Villanueva Tobera, 09214 Condado de Treviño (Burgos), Spain... about 25 km from Vitoria-Gasteiz.

“As of today, our plans are not to increase our work with tofu and tempeh derivatives, but rather to develop new products, above all the full gamut of fermented soy products... such as miso, tamari, natto, and amazake.” But since he has difficulty understanding English, he would like to get Spanish-language publications. Address: Zuaitzo, Villanueva Tobera, 09214 Condado de Treviño (Burgos), Spain. Phone: 945/28 86 30.

503. **Product Name:** [Alitey, and Monsoy (Soymilks)].

**Foreign Name:** Alitey, Monsoy.

**Manufacturer’s Name:** Liquats Vegetals, S.A.

**Manufacturer’s Address:** Ctra. de Vic, Km. 1,230, E-08553 Viladrau (Girona), Spain. Phone: +34-3 884 80 69.

**Date of Introduction:** 1992 December.

**New Product–Documentation:** Talk with Michael Makowski of DE-VAU-GE in Germany. 1993. Dec. 8. Active soymilk manufacturers include Liquats Vegetals S.A. in Viladrau (near Girona), Spain. They started about 1 year ago, make their soymilk from whole soybeans, and are a private company. Letter (fax) from Michael Makowski. 1993. Dec. 10. Gives the company address and phone number.



Letter (fax) from Xavier Vilacis of Liguats Vegetals, S.A. 1994. Jan. 27. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products.

504. Gonzalez, R.; Polo, F.; Zapatero, L.; Caravaca, F.; Carreira, J. 1992. Purification and characterization of major inhalant allergens from soybean hulls. *Clinical and Experimental Allergy* 22:748-55. \*

• **Summary:** A low-molecular weight allergen (about kDa), localized in soybean hulls, was identified as the main protein responsible for asthma epidemics in the Spanish cities of Barcelona and Cartagena. This allergen (to which 90% of the patients with asthma attacks on the days of the epidemic had specific IgE) was also shown to be different from those causing food allergy to soya.

This allergen was purified from a saline extract of soybean hulls by use of gel filtration and reverse-phase high-performance liquid chromatography, and was shown to consist of two isoforms closely related to their physicochemical and immunochemical properties. The two were named *Gly m* IA, and *Gly m* IB. Both isoallergens were glycoproteins with a high percentage of hydrophobic residues, many leucine and isoleucine, in their amino acid composition. Address: Departamento Investigación, Alergia e Inmunología Abelló SA, 19. 28037 Madrid, Spain; and Centro de Investigaciones Biológicas, CSIC.

505. Narciso, G.; Ragni, P.; Venturi, A. 1992. Agrometeorological aspects of crops in Italy, Spain and Greece: a summary review for common and durum wheat, barley, maize, rice, sugar beet, sunflower, soya bean, rape, potato, tobacco, cotton, olive and grape crops, proceedings. Luxembourg: Commission of the European Communities. 438 p. [Eng]\*

506. Vegetalia. 1992. Recetario [Recipe book]. Castellcir (near Barcelona), Spain. 32 p. 21 cm. [Spa]

• **Summary:** The Introduction to this handsome color booklet (which contains many color photos), was written by Salvador Sala. It states: "Thanks to you, this year in 1992 we will celebrate the 6th year of Vegetalia's existence. It has not been easy to get to where we are now, but it has been very satisfying, especially for me. When, in April 1986, together with Carmen and Tomás, we decided to form Vegetalia, our dream was to facilitate the improvement of the quality of life, in the ecological way."

For each of the following foods there is an introduction, a nutritional analysis, then several recipes: Seitan, tempe (a color photo shows tempeh sold in perforated plastic bags, and immersed in a broth in jars), tofu (a color photo shows tofu sold in self-sealing bags and immersed in a liquid in

jars), pickles, amasake [amazake], gomasio [gomashio], and Algas Klamath (a type of sea vegetable), and Vegetalin (made with whole wheat, olive oil, sea salt, natural leavening, and sesame). Page 32 notes that the company makes seitán, tempe, tempe estofado, tofu, tofu tres delicias, paté -de tofu y miso, etc. It also sells an large line of natural foods made by other companies, including: Soydisse (a type of soy frankfurter). Tofume (smoked tofu). Biosoy (soymilk). Postre de Soja (Soymilk desserts, in hazel-nut/filbert, vanilla, chocolate, apricot, strawberry, and pear flavors). Soy yogurt (natural and low fat). And Vegetalia is working to help the Third World via CEPAN in Brazil.

Note: This is the earliest Spanish-language document seen that mentions amazake, which it calls "amasake." Address: Castellcir (near Barcellona), Spain. Phone: +34 3-866 61 61.

507. **Product Name:** [Alitey (Soymilk with Cereals, or Cocoa), and Monsoy (Soymilk with Calcium, Cereals, or Cocoa)].

**Foreign Name:** Alitey, Monsoy.

**Manufacturer's Name:** Liguats Vegetals, S.A.

**Manufacturer's Address:** Ctra. de Vic, Km. 1,230, E-08553 Viladrau (Girona), Spain. Phone: +34-3 884 80 69.

**Date of Introduction:** 1993 January.

**New Product-Documentation:** Talk with Michael Makowski of DE-VAU-GE in Germany. 1993. Dec. 8. Active soymilk manufacturers include Liguats Vegetals S.A. in Viladrau (near Girona), Spain. They started about 1 year ago, make their soymilk from whole soybeans, and are a private company. Letter (fax) from Michael Makowski. 1993. Dec. 10. Gives the company address and phone number.

Letter (fax) from Xavier Vilacis of Liguats Vegetals, S.A. 1994. Jan. 27. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products. In January 1993 the company introduced Alitey with cereals, and cocoa, and Monsoy with calcium, cereals, and cocoa.

508. *SoyaFoods (ASA, Europe)*. 1993. Expansion plans for Ferruzzi. 4(1):2-3. Winter.

• **Summary:** "The Italian agri-food group Ferruzzi aims, at least, to double the size of its food and agri-industrial business from 10 trillion lira to just under 24 trillion lira by the year 2000. Ferruzzi believe that the growth will be stimulated by the rapidly expanding European food industry which had a growth rate of 34% between 1985 and 1990.

"Italy, France and Spain account for half of Ferruzzi's agro-industrial sales and are the countries where most of its consumer product sales are generated. These countries spend as much on food products as the other 9 member states put together. Italy, alone, accounts for 20% of the total EC

expenditure on food and has the highest annual per capita spending.”

509. *SoyaScan Notes*. 1993. The world’s most active countries with respect to soybeans and soyfoods, as of 1 April 1993 (Overview). April 1. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** A tally by country on the SoyaScan database (which currently contains 42,087 bibliographic references relating to soybeans and soyfoods) shows the following countries to have the largest number of listings relating to soya (over 200): United States of America 21,459, Japan 5,599 Germany 2,053 United Kingdom 1,986, China 1,844, France 1,601, India 1,222, Canada 1,112, Indonesia 993, Brazil 873, Netherlands 809, Manchuria 733, USSR 665, Italy 596, Australia 467, Korea 463, Taiwan 460, Belgium 400, Austria 375, Mexico 371, Switzerland 353, Sri Lanka 341, Philippines 323, Yugoslavia 321, Nigeria 312, Sweden 289, Argentina 244, Israel 240, Czechoslovakia 237, Denmark 225, Bulgaria 219, Malaysia 214, Thailand 214, South Africa 207, Spain 204, Russia 203.

510. Laudisio, Leonardo. 1993. Biography and history of work with soyfoods, vegetarianism, and macrobiotics (Interview). *SoyaScan Notes*. June 13. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Laudisio is an Italian name but it is rare; based on the Latin “Laud” meaning to praise. His grandparents (his mother’s parents) immigrated to the USA in the early 1890s from Italy on a sailing ship. He had some cousins in Brooklyn, New York. When they went to Ellis Island they failed to recognize him, so they put him back on the boat and shipped him back to Italy. He had a little bakery in a little town called Vietri Sul Mare (which means “view of the sea”), a little north of Salerno, at the beginning of the Amalfi drive (going south). His grandfather returned to the USA (successfully this time) and started a small bakery under the Brooklyn bridge, making *galletta* (twice baked)—which the English call “hardtack.” They worked in Italian food and stayed deeply immersed in the Italian community. His grandfather later moved his bakery right above Redhook on 4th Ave. in Brooklyn. Leonardo was born on 2nd St. in Brooklyn in 1938.

His father’s parents immigrated to the USA separately.

His family was always poor (they had little money), so they ate meat or fish, eggs or dairy only on special occasions and in small amounts as on Sunday or Friday. They ate a lot of pasta, bread and beans. He grew up on Neapolitan cookery. His father (who immigrated to the USA independently of Leonardo’s grandfather) came from a restaurant background and owned several restaurants; his uncles were chefs on Italian cruise liners in the early 1900s. In the early days Leonard’s father made Mozzarella cheese and other food products—with his uncle. His father comes

from a farming village at the foot of Mt. Vesuvius in Naples. So both families come from southern Italy around Naples.

Leonardo started working in his parents’ restaurant, Agostino, in Miami as soon as he could stand at the dish-washing sink. His father passed away when he was about 14 (1952). He supported himself (he and his 3 brothers, a sister and their mother owned a restaurant) as a chef in Miami all through high school and college. His brother developed the restaurant, Raimondo, into a famous restaurant in south Florida. In 1959 he and his brothers closed the restaurant went to Cuba to see Fidel Castro. In 1961 they again closed the restaurant and traveled around Europe in a Volkswagen bus. Eventually the family had 2 restaurants. The Agostino was run by his mother with his eldest brother; his next to oldest brother, Raimondo, who is 60 now, went to Europe, studied in Rome, got into fancier northern Italian cooking, and in 1965 he returned to the USA and opened his own restaurant Raimondo in Florida.

In 1963 Leonardo graduated from the University of Miami with a B.A. in philosophy. In 1964 he left the USA and went to Europe to avoid the Vietnam war; he did a lot of his post-graduate work during 3 years in Europe, in Italy and Spain, where he worked as a sandal maker to support himself. He returned to the USA after he was too old to get drafted and in 1967 got his MA in philosophy from the University of Miami. Leonardo was always kind of the black sheep of the family.

In about 1965, while in Spain, Leonardo became macrobiotic together with a friend of his from Berkeley named Robert Richheimer (who was on the coordinating committee of the Free Speech Movement and had set up an alternative living scene in Spain). Leonardo, with his girlfriend (whom he met in London), went to visit him. He was living next to a French macrobiotic chef named Bernard, who was very close to George Ohsawa and who opened a macrobiotic hotel, restaurant and night club named Javea overlooking the Mediterranean between Alicante and Valencia—1 mile from the seacoast. Bernard proceeded to build a house and to start a macrobiotic school. George Ohsawa came to see the house but he never actually lived there. They had to drive to France to get brown rice. When they had leftover rice, they would make “rice cakes,” by shaping the rice and leftovers into patties, adding tamari and gomashio, then baking them. They were “heavenly.” He thought of starting a company selling them—in an era when most people had never heard of brown rice. Another of his famous foods was a bowl of brown rice with gomashio.

Leonardo was living an alternative lifestyle and eating alternative foods. Doing that in Spain at that time was pretty strange. But he began to take vegetarianism as part of his own philosophy. He and his girlfriend lived together for 2 years before they got married—in Coconut Grove, Miami on 22 Jan. 1967; they have been married for 28 years. He got his MA degree at the end of the year he got married. After

earning his MA degree, he and his wife returned to Europe and lived mostly in Spain for 9 years (he was a sandal maker, collecting antiques; their 2 children—both daughters—were born in Spain) until 1977, when they returned to the USA, locating in Boulder, Colorado; there he helped a friend open a restaurant named John's. He also attended the Naropa Institute and worked to give his two daughters an American identity. Rain, his oldest, is 22, and China Moon is 19.

In 1978 he bought an acre of land in Boulder, spent several years building houses, like an intentional community. He still was not yet in the restaurant business.

In 1981 he and his family moved to Marin (San Anselmo), where he worked for a film caterer (Chef Cornelius, catering for people who were making films) for a while, then, with his younger brother, bought Marin Fish and Poultry in San Anselmo that sold (but did not raise) fish and poultry. He did that for a year.

They were not ready to settle down so they (and his brother) returned to Europe, on a 70-foot sail boat, sailing the whole way. They lived on the boat in Europe, where they lived in Italy for 5 years. They put their kids in school in Florence for a year, then 2 years in Rome. When he returned to the USA he and his brother were arrested and they each served 2 years (about 1987-90) in jail in Lompoc, and each worked as an institutional cook while doing good time. That's when he really became a vegetarian, seeing the quality of meat that is sent to jails. He got out at age 49-50 and had a very hard time getting re-established. Both his daughters had become vegetarians by this time—Rain in 1979 and China Moon in 1987. They became vegans in 1988-89. In 1990 Leonardo got back into film catering. Also in 1990 he bought a "hot truck," a catering kitchen truck and he began to do more and more vegetarian cooking and catering. By 1991 he was a full-blown vegetarian caterer.

He met a chef named Steve McClaine (age 32 and a chef at Millie's in San Rafael). He took his daughter, China Moon, there when she graduated from high school in Redwood City because Millie's served vegan dinners including desserts. At the time he was selling Wildwood's vegetarian tofu burgers at street fairs, the flea markets in Marin, San Rafael Farmers' Market, etc. Steve introduced Leonardo to using tofu, seitan, and tempeh in veggie burgers and other foods. Steve offered to give Leonardo a recipe he and friends on in the Boston area had developed for veggie burgers. Leonardo started making 1,000 a month but he added a significant amount of brown rice. The recipe changed a dozen times when Leonardo was involved with Steve. Leonardo had to mortgage his house, because he was spending all his time making, demoing and selling veggie (actually vegan) burgers. It became an obsession that lasted for about 2 years. His wife and daughters would travel with him during the summers, up and down the Pacific Coast. At some point he and Steve McClaine started a company, McLaud Partnership—a combination of their names. Leonardo went

to a lawyer, spent \$1,000, but it never was official. Steve went back and forth, but never signed the papers. Continued. Address: c/o White Wave, Boulder, Colorado.

511. Eridania Béghin-Say (Ferruzzi Group). 1993. Annual report 1992. 54, avenue Hoche, BP 47108, 75360 Paris Cedex 08, France. 72 p. [Eng]

• **Summary:** This is the first year since its founding that Central Soya does not have its own annual report. It is now a subsidiary of Eridania Béghin-Say (whose chairman and CEO is Renato Pico) and its activities are now shown in the section of this report titled "Crushing and refining: Cereol, Central Soya." This includes Cereol Benelux (Netherlands), Cereol Deutschland (Germany), Cereol France, Cereol Iberica (Spain), Cereol Italia (Italy), Cereol Magyarorszag (Hungary), CSY Agri-Processing (USA), Central Soya Co. (USA), Central Soya of Canada, Central Soya Aarhus.

"1992 was a good year for Eridania Béghin-Say. Operating profit rose to more than FF 3.6 billion, 35% higher than the previous year, with net earnings of around FF 1.3 billion, showing a 70% increase."

"In 1992, Cereol's 19 plants crushed more than 5,400,000 tons of oilseeds, 27.3% more than in 1991. Almost two-thirds of the raw material crushed was soybeans (+13.5% over 1991), with the remainder composed primarily of sunflower and rapeseed (+62% more than in 1991)." Address: Paris, France.

512. **Product Name:** [Alitey (Soymilk with Hazelnuts), and Monsoy (Soymilk with Hazelnuts)].

**Foreign Name:** Alitey, Monsoy.

**Manufacturer's Name:** Liquats Vegetals, S.A.

**Manufacturer's Address:** Ctra. de Vic, Km. 1,230, E-08553 Viladrau (Girona), Spain. Phone: +34-3 884 80 69.

**Date of Introduction:** 1993 November.

**New Product—Documentation:** Talk with Michael Makowski of DE-VAU-GE in Germany. 1993. Dec. 8. Active soymilk manufacturers include Liquats Vegetals S.A. in Viladrau (near Girona), Spain. They started about 1 year ago, make their soymilk from whole soybeans, and are a private company. Letter (fax) from Michael Makowski. 1993. Dec. 10. Gives the company address and phone number.

Letter (fax) from Xavier Vilacis of Liquats Vegetals, S.A. 1994. Jan. 27. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products. In January 1993 the company introduced Alitey with cereals, and cocoa, and Monsoy with calcium, cereals, and cocoa. In November 1993 it launched Alitey with hazelnuts and Monsoy with hazelnuts.

513. Makowski, Michael. 1993. Soymilk at DE-VAU-GE and in Europe (Interview). *SoyaScan Notes*. Dec. 8.



Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** DE-VAU-GE (DVG) has not yet stopped making soymilk; they had planned to stop during late 1993 and they hope to definitely stop during 1994. They stopped making tofu and Tofu Cream 2 months ago, but they continue to sell tofu; they now buy it from another company [Heuschen-Schrouff in the Netherlands]. DGV decided to stop soymilk production because of the large drop in demand after Granose was sold.

Their problem is to find a partner to produce soymilk for them. This other company must make a good quality product at a reasonable price, must have a large enough capacity to supply their needs (they plan to continue to sell the same soymilk products they are selling now), and must be willing to buy their used soymilk equipment at a reasonable price (this is the main sticking point).

There are not many large soymilk manufacturers in Europe. Alpro in Belgium makes and sells about 32 million liters/year in all the different sizes and flavors. Sojinal in France makes about 5½ million liters/year, and DE-VA-GE makes about 4 million liters/year. Other active soymilk manufacturers include Liguats Vegetal S.A. in Viladrau (near Girona), Spain (which started about 1 year ago and makes their soymilk from whole soybeans; they are a private company), several small manufacturers in England (but their quality is not acceptable), and Soyana in Switzerland. In Michael's opinion, the quality of the soymilk made by Alpro and DVG are more or less the same.

The British market for soymilk is by far the biggest in Europe, comprising about 50-60% of the total European market. Belgium, France, and Germany come next and are all about the same size. Then come Italy and Spain.

In Europe, 80% of all soymilk is sold plain-unsweetened and unflavored; it contains only soybeans and water. Then there are the sweetened types, which are sweetened with sugar, honey, or grape juice. The main flavored types are chocolate, vanilla, or strawberry. Then there are three flavors of dessert puddings: Chocolate, vanilla, and strawberry. That's all. Address: General Manager, DE-VAU-GE Gesundkostwerk GmbH, Postfach 1660, Luener Rennbahn 18, D-2120 Lueneburg. Phone: (04131)-303-145.

514. **Product Name:** [Tofu].

**Manufacturer's Name:** Peter Mayr Tofu.

**Manufacturer's Address:** Felantix, Mallorca, Spain.

**Date of Introduction:** 1993.

**New Product–Documentation:** Letter (handwritten) from Toby and Teresa Perez Coma. 1994. Jan. 5. "My wife and I became fascinated with tofu after living near a tofu shop in Felantix, Mallorca, which unfortunately closed at the beginning of this year [1994]. However Peter is regrouping, working as an electrician, and continues to produce from his house. His address is: Peter Mayr, P.O. Box 93, Felantix, Mallorca.

"He lent us his copy of *Tofu & Soymilk Production* and the result is that we are now in France, setting up a tiny tofu factory on semi-traditional lines."

515. Subrahmanyam, Sanjay. 1993. *The Portuguese empire in Asia, 1500–1700: A political and economic history*. London and New York: Longman. xiii + 320 p. Index. 23 cm. \*

• **Summary:** Probably the best English-language book on the subject.

516. Vilacís, Xavier. 1994. Re: A brief history of Liguats Vegetals, S.A., of Viladrau, Spain. Letter (fax) to William Shurtleff at Soyfoods Center, Jan. 27. 2 p. Typed, with signature on letterhead. [Eng]

• **Summary:** Mr. Josep Ma Erra had the idea to establish Liguats Vegetals, S.A., because all of the soy products consumed in Spain are made out of the country. The three owners of the factory are Mr. Josep Ma Erra, Mr. Josep Serra, and Mr. Josep Vilacís. The company's first two products, both types of soymilk, were introduced in December 1992; Alitey was sold to the general public and Monsoy was sold only to specialty shops that sell vegetarian- and health-food products.

In January 1993 the company introduced Alitey with cereals, and cocoa, and Monsoy with calcium, cereals, and cocoa. In November 1993 it launched Alitey with hazelnuts and Monsoy with hazelnuts. The company presently makes only soymilk in these different flavors. Address: Liguats Vegetals, S.A., Ctra. de Vic, Km. 1,230, 08553 Viladrau (Girona), Spain.

517. Agriculture Canada, Oilseeds Division, International Markets Bureau, Markets and Industry Services Branch. 1994. *Oilseed sector profile*. Ottawa, Ontario, Canada. [iv] + 23 + 1 + 12 p. Jan. 28 cm. Spiral bound. [3 ref]

• **Summary:** Contents: Foreword. 1. Introduction. 2. The seed production subsector: Canola, soybeans, flaxseed, sunflower, mustard, safflower, composition.

3. The processing subsector: Background, crushing plants, industry statistics, methods of processing, oilseed crushings, vegetable oils, vegetable oilmeals, economic value of the industry. 4. The marketing subsector: Oilseeds marketing, hedging, processed oilseed products marketing.

5. Organizations: Canola, soybeans, flaxseed, crushers. 6. The environment: Domestic, international.

Appendix A: Role of the federal government in the Canadian oilseeds industry: Research, regulation, marketing. Appendix B. Oilseed industry directory: Industry association, oilseed processing companies, oilseed sector trading companies, research / education institutions, government, others.

Soybeans (p. 3): "Soybeans were introduced into Canada in 1893; however they did not become a commercial

oilseed crop until the late 1920's. In that year [sic, about March 1930], the first soybean crushing plant [Milton Oil Refineries, Ltd.] was built in Milton, Ontario. The introduction of modern crushing mills occurred in the late 1930s. Increased demand for vegetable oil and protein meal during the early 1940's firmly established the crop and by 1950, soybeans had become a major cash crop in Ontario. Strong promotional efforts by the crushing industry assisted in continued expansion of the crop. During the 1980s, soybeans were introduced into Québec, the Maritimes and Manitoba as a source of livestock feed... In Québec, whole soybeans have become a viable alternative feed source. In other regions, whole soybeans are only a minor ingredient for livestock."

The soybean growers, like their canola counterparts, have shown a high degree of cohesion and organizational ability. In 1949, the Ontario Soybean Growers' Marketing Board was founded. The Board represents 25,000 producers and negotiates the pricing arrangements for Ontario soybeans. Its functions are discussed in more detail further in this report. The handling, crushing, and exporting of soybeans and soybean products is handled by private companies.

"Canadian soybean production has increased sharply from the late 1970's when up to 60 percent of Canadian soybean requirements had to be imported. In 1987, domestic production reached a level capable of supplying most internal demands for crushing (Table 3). Although some soybeans are still being imported from the U.S., Canada exports a larger volume of high quality white hilum soybeans for food utilization in Asian and European markets.

Domestic crush of these larger crops has made Canada self-sufficient in soyoil production; however, soymeal is still in a deficit position. About 600,000 tonnes representing close to 50 percent of domestic soymeal utilization requirements needs to be imported yearly.

"Up to 1991, the soybean crushing industry was operating below capacity." In that year, Victory Soya Mills in Toronto was closed. "The result is that the crushing capacity now meets the production of soybeans for crushing. Therefore, without an increase in crushing capacity, Canada will remain a net importer of oilmeals. Nevertheless, increasing the crush is economically questionable until a viable market outlet is found to absorb the additional soyoil produced. The 1992 elimination of the U.S. crude soyoil tariff (18%) could ease the situation. The two companies crushing soybeans in Canada are corporately linked to large multinational corporations, with major U.S. operations. Therefore, without tariff, the unrestricted movement of soyoil between the two countries is a possibility."

"Economic value of the industry (p. 12): The oilseed crushing industry makes a large and positive contribution to the Canadian economy. It is a processing industry and as such it provides enhanced strength to the economy through

value-added contributions and the financial multiplier effect. In 1992 (table 16) the direct economic benefits were \$1,810 million, and the contribution to the Canadian balance of payments was \$599 million in total import replacement and \$322 million in export earnings for a total contribution of \$921 million.

Tables show: (3) Canadian supply and disposition of soybeans, soyoil and soymeal, 1988-1993. (5) Oilseed crushing facilities in Canada. Owners and their soybean crushing plants are: ADM Agri-Industries Ltd. (Windsor, Ontario): 1,250 tonnes capacity per 24 hours. CanAmera Foods (Hamilton, Ontario): 1270 tonnes capacity per 24 hours.

(7) Oilseed crushings in Canada: The soybean crush was #2 largest in Canada after canola and ahead of sunflower seed. The soybean crush was 908,200 tonnes in 1988, then 916,000 tonnes in 1989, then 1,083,500 tonnes in 1990, then 943,600 tonnes in 1991, and 995,200 tonnes in 1992.

(8) Vegetable oil production in Canada. Soybean oil is #2, far behind canola oil and far ahead of sunflower oil. During these 5 years, soybean oil production ranged from a low of 159,000 tonnes in 1988 to a high of 194,800 tonnes in 1990.

(9) Vegetable oil trade. During these 5 years, soybean oil imports to Canada were very small, ranging from a low of 4,000 tonnes in 1989 to a high of 16,000 tonnes in 1990. Soybean oil exports from Canada were even smaller, ranging from a low of 1,000 tonnes in 1989 to a high of 5,300 tonnes in 1991. Both soybean crushers also have their own soy oil refineries. The capacity of the ADM Agri-Industries Ltd. refinery (Windsor, Ontario) is 159,000 tonnes per year, whereas that of CanAmera Foods (Toronto) is 147,000 tonnes per year.

(13) Vegetable oilmeal production: Soybean meal is #2, behind canola meal but far ahead of sunflower meal. During these 5 years, soybean meal production ranged from a low of 698,300 tonnes in 1988 to a high of 835,800 tonnes in 1990.

(14) Vegetable oilmeal trade. During these 5 years, soybean oil imports to Canada were large, and vastly larger than any other oilmeal, ranging from a low of 565,400 tonnes in 1990 to a high of 692,100 tonnes in 1988. Soybean meal exports from Canada were very small, ranging from a low of 200 tonnes in 1989 to a high of 33,100 tonnes in 1992. By contrast, large amounts of canola meal (about half of the total amount produced each year) were exported.

(18) Soymeal imports by province. The top 3 in 1988 were: Ontario 326,026 tonnes. Manitoba 169,687 tonnes.

(19) Soybean exports by major markets: The top 8 in 1992 were: USA 69,135 tonnes. Portugal 62,515 tonnes. Netherlands 27,349 tonnes. Former USSR 20,752 tonnes. Hong Kong 19,376 tonnes. Singapore 17,268 tonnes. Japan 11,306 tonnes. Malaysia 10,687 tonnes. Quebec 137,365 tonnes. Total 1992 245,668 tonnes.

(24) EC-12 production of major oilseeds, 1989-

193. In 1992-93 the leading oilseeds produced in the European Community were: Rapeseed 6,217,000 tonnes. Sunflowerseed 3,940,000 tonnes. Soybeans 1,294,000 tonnes. Cottonseed 606 tonnes. Linseed 316 tonnes. Address: 930 Carling Ave., Ottawa, ONT K1A 0C5, Canada. Phone: (613) 995-8324.

518. Gervais, Marc; Theriault, Sylvana; Bernard, Eric. 1994. Oilseed sector profile [Canada]. Ottawa, Ontario, Canada. [iv] + 23 + 1 + 12 p. Jan. 28 cm. Spiral bound.

• **Summary:** Contents (each accompanied by tables and charts; each section covers the years 1991-1994): Imports of soya beans for sowing (almost all come from the USA, followed by Chile and Japan). Imports of soya beans for oil extraction (almost all come from the USA). Imports of soya beans, nes [meaning unclear] (almost all come from USA, followed by Taiwan, China, and Japan).

Imports of soya-bean oil crude, whether or not degummed (almost all comes from the USA, followed by France). Imports of soya-bean oil and its fractions, refined but not chemically modified (almost all comes from the USA, followed by Singapore). Imports of veg fats & oils & fractions hydrogenated, inter or re-esterified, refined or not (almost all comes from the USA followed by UK and Netherlands). Imports of animal or veg fats & oils...

Imports of soya bean flour and meals. Imports of soya sauce (main suppliers are: USA, China, Japan, Hong Kong, Taiwan, Philippines, South Korea). Imports of protein concentrates and textured protein substances (almost all comes from USA). Imports of Soya-bean oil-cake and other solid residues, whether or not ground or pellet (almost all comes from USA). Imports of bran, sharps and other residues of leguminous plants, pelleted or not (almost all comes from USA).

Exports of soya beans for sowing (most goes to USA, followed by France, Germany and Austria). Exports of soya beans, for oil extraction (most goes to Netherlands, followed by France, Portugal and Spain). Exports of soya beans, nes (most goes to USA, followed by Hong Kong and Singapore). Exports of soya bean flour and meals (almost all goes to USA). Exports of soya-bean oil crude, whether or not degummed (almost all goes to the USA). Exports of soya-bean oil and its fractions, refined but not chemically modified (almost all goes to Pakistan, followed by USA). Exports of veg fats & oils & fractions hydrogenated, inter or re-esterified, refined or not (almost all goes to the USA). Imports of animal or veg fats & oils... (almost all goes to USA).

Exports of soya sauce (main buyers are UK, Japan, United States, Finland, Cuba).

Exports of protein concentrates and textured protein substances (almost all goes to USA). Exports of Soya-bean oil-cake and other solid residues, whether or not ground or pellet (almost all goes to USA). Exports of bran, sharps and

other residues of leguminous plants, pelleted or not (almost all goes to USA). Address: Trade Evaluation and Analysis Div., International Markets Bureau, Markets and Industry Services Branch, Agriculture Canada, Ottawa, Ontario, Canada.

519. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and margarine. Part III (Interview). *SoyaScan Notes*. Feb. 4, 8, 10, and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by an 8-page fax on 7 Feb. 1994.

• **Summary:** Continued: Genice developed its first soy yogurt in 1988; it was a chilled/refrigerated product that the company never actually launched. Genice has never made or sold a soy yogurt under the Genice brand, for reasons mentioned earlier—that the company wants to focus on product development and manufacturing, not marketing. Not long after April 1989, when Genice joined the Haldane Foods Group, they started to make Haldane Yoga, a chilled soy yogurt owned by the Haldane Group, but originally launched by the Regular Tofu Company in 1986. This and all subsequent soy yogurts made by Genice have been cultured products. Haldane Yoga product sold at the rate of about 500 to 1,000 cases per week, continuing until early 1990 when Genice developed a unique process for making pasteurized yogurts that have a 4-month shelf life at ambient temperatures. One other dairy company in the UK [Bridge Farm Dairies] was already producing an ambient stable product, but it suffered from protein degradation and did not contain large pieces of fruit. Genice attacked the problem from two directions—process design and product development. The process design concentrated on the necessity of pasteurizing the yogurt containing large chunks of fruit without degrading the soya protein. The product development consisted of producing a product with heat-stable natural flavors and colors at low pH (range: 3.6 to 3.8 when done). The results were highly successful.

The secret to the Genice process for making shelf-stable products is the “protein protection.” If the process is not done correctly, all the protein precipitates, resulting in a very poor lumpy product that looks like porridge. The TVC (total viable count) is less than 10 in each soy yogurt product right after packaging, so they are almost as sterile as if they had been treated by UHT. The pH ranges from about 3.8 to 4.0, which gives added protection. This allows them to sell their yogurts using unrefrigerated distribution, which is much more economical. In the UK, most refrigerated distribution is done only by very large food companies.

Genice now makes 4 different brands of non-dairy soya yogurts for sale in the UK in 12 flavors. (1) So Good Yoghert (launched in early 1990 in 3 flavors—strawberry, black cherry, and peach & passion fruit; this is the Haldane brand; the So Good name has no connection with the same name used by Sanitarium Foods in Australia); (2) Unisoy Soya



Yogart (launched in late 1990 in 3 flavors—raspberry, peach melba, and black cherry; Genice made these yogurt products for Unisoy before they joined the Haldane Group; before that, they were made by Bridge Farm Dairies in southern England—which attempted to make a shelf-stable product using dairy technology); and (3) Granose Soya Yogert (launched in late 1990 in 4 flavors—peach melba, strawberry, apricot, and blackcurrant & apple; Granose became part of the Haldane Group in Jan. 1991); (4) Granose Hi-Fruit Premium Yogert (launched in late 1992, with double the fruit content, 20%, in 3 flavors—kiwi & passion fruit, nectarine and pineapple, and fruits of the forest). Note that there is some duplication of flavors among different brands.

Starting in 1992 Genice started to sell its soy yogurts outside the UK. First in 1992 the So Good line of soy yogurts was launched in Spain, in cups printed in Spanish, for ADM-owned Arkady ADM Iberica S.A. (Carretera de Hospitalet 42, Cornellà de Llobregat, Barcelona, Spain) with the addition of two new flavors—orange and natural. In late 1992 the Spaniards requested their own brand, so So Good was changed to Alisana; Four Soya Yogerts (120 gm each) were sold in each pack. The Spaniards are apparently becoming very health conscious, because Spain is now Genice's biggest export market, taking about 20% of all the soy yogurt that Genice makes. In late 1992 the So Good line was launched in Sweden, Norway, and Denmark using, in part, the pre-existing Granose distribution network. One product, named So Good Soya Frutty, was sold to all 3 Scandinavian countries. The label was in Swedish and the names of all 3 distributors were on it. The distributors are: (1) Kung Markatta AB, Hjalmsberg, S-705 95 Örebro, Sweden (this is Genice's second largest export market); (2) Alternative Mat A/S, AVD Import, Kubben, 2150 Arnes, Norway; (3) Grön Distribution, Hoje Gladsaxe Torv 2, 2860 Søborg, Denmark (Genice has not dealt with Grön since 1992). At about the same time the So Good Yoghert (with its regular English label) was introduced to Finland, distributed by Oy Makrobios AB, Leksval, 10600 Ekenäs, Finland.

Then in early 1993 Genice's So Good soy yogurt was launched in Italy, in English with a sticker applied by Genice, thru a company partly owned by ADM named AFG Italy S.r.l. (Via S. Cassiano 76, Trecate, Novara 28069, Italy) and in mid-1993 in Portugal with an English label through another ADM subsidiary, Natiris (Centro Dietetico Lda., Rua de Santo Antonia, Estrela No. 31-B, 1300 Lisbon, Portugal). Italy is one of the two fastest growing yogurt markets in Europe, and it may soon pass Sweden to become Genice's second largest export market. Continued. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

520. Pierce, Ray. 1994. A brief history of Genice Foods Ltd. and their work with soy ice creams, yogurts, creams, and

margarine. Part IV (Interview). *SoyaScan Notes*. Feb. 4, 8, 10, and 16. Conducted by William Shurtleff of Soyfoods Center. Followed by an 8-page fax on 7 Feb. 1994.

• **Summary:** Ray feels that these soy yogurts are excellent products. Consumers must have the same opinion since the market is growing very rapidly. "In retail terms, this soya yoghurt market is now worth around £2 million sterling (\$3 million), whereas it was worth only about £30,000 sterling in 1985." The market was almost totally created in the last four years—since Genice started making soy yogurt using its unique process that gives a shelf-stable product.

Today Genice now sells about ten times as much soy yogurt as soy ice cream. Moreover, sales of soy ice cream are fairly static, while sales of soy yogurt are leaping ahead. Genice makes at least 90% of the soy yogurts sold in the UK. In short, Genice started as a non-dairy ice cream company, which has in fact turned into a non-dairy yogurt company! "The soy yogurts really sold themselves. It was amazing how they took off so well." There are about 1,500 health food shops in the UK, and no more than half of those have a freezer, so they cannot sell ice cream. Even those with a freezer, usually have very limited frozen storage capacity and the competition for that small space (as from dairy ice creams) is intense. Almost all of those with no freezer also have no refrigerated storage; they sell mainly "pills and potions" etc." So a refrigerated or frozen product can be sold in less than half of all health food stores. This gives shelf-stable products, such as Genice's soy yogurts, a big advantage. Genice is moving its soy yogurts into Italy and Portugal in a bigger way, and is launching two new yogurts for Spain this year (competing soy yogurts are sold on a small scale in Spain). Other concepts and flavours will be introduced into the yoghurt area in 1994, together with the quest for other export markets continuing both in Europe and the rest of the world.

Genice uses fresh soymilk (produced by Unisoy) to make about 50% of its total volume of soy yogurt, and isolated soy proteins to make the other 50%. Powdered soymilk is not used because it is very expensive and too hard to obtain. Isolates are more convenient to use but Ray now feels that fresh soymilk gives a slightly better product—though this is very subjective and different people have different opinions. Isolates also give an excellent soy yogurt.

One of the markets that Genice has not yet entered—and would like to—is Germany, where there are large sales of soymilk and twice as many health shops (Reform Houses) as in the UK. Since most of the Reform Houses do not have chilled or frozen cabinets, Genice's shelf-stable products would fit perfectly; they could be sold on the shelf next to the Muesli. In the smaller health food shops in the UK, Genice's shelf-stable soy products are usually sold unchilled, but in the bigger shops, like Holland & Barrett, they sold chilled, since they taste better after being chilled.

Other dairylike non-dairy products that Genice has

made are as follows: In 1990 chilled So Good Soycreem was launched as a non-dairy alternative to dairy double cream, but low in cholesterol, high in polyunsaturates, and low in saturates. It was made for Haldane in a little beige plastic pot with a green foil lid, packed at the Genice plant. It contains a trace of cholesterol because law requires that it contain 36% oil, including some palm oil. In 1991 a shelf-stable UHT version (completely sterilized, with a 9-month shelf life), now named Granose Soya Creem, was launched in a 225 ml Combibloc pack, made for Genice by a large dairy in Ireland which had Combibloc packaging equipment. The chilled So Good Soycreem was discontinued. In 1992 Genice installed a vegetarian margarine plant, which also makes Granose Soya Margarine that is sold chilled. This margarine was developed in Germany, so they took over the business and reformulated the product.

Genice is doing very well. The plant has expanded to 15,000 square feet from its original 2,500—a 6-fold increase. Their turnover (gross sales) has doubled virtually every year since they have been in business. Being owned by ADM has been of great benefit to Genice because ADM has been extremely generous in providing the money that Genice needs for its ongoing expansion and implementation of new ideas. Genice would eventually like to enter the U.S. market (starting in New York) with its shelf-stable non-dairy yogurt products, since there are no such products in America.

When yogurt is pasteurized, the beneficial effects of the yogurt bacteria are nullified. But Ray was just told by Dr. Glen Gibson that oligofructose, a sugar, has the effect of promoting the growth of the small quantities of Bifidobacteria in the human digestive system. Thus a pasteurized soy yogurt could be made into an even healthier product if it were sweetened by oligofructose.

Ray is a native of Wales and his wife is a teacher who often teaches in Welsh. Both are happy to see the revival of the Welsh language. Ray is not a vegetarian, but he has a good feeling and high regard for vegetarianism, he likes vegetarian food, and he has some vegetarian ideals but they go beyond the food to more ethical issues. He finds that many of the people in other companies that he deals with are more ethical people. He would estimate that 85-90% of the consumers who buy products made by Genice are vegetarians or vegans. Address: Founder, Genice Foods Ltd., Pinfold Lane, Llay Industrial Estate, Llay near Wrexham, Clwyd, LL12 OPX, Wales/Cymru, UK. Phone: 0978-853-787.

521. Mahlich, John. 1994. History and development of the Haldane Foods Group Ltd. Part IV (Interview). *SoyaScan Notes*. March 8. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** The Group has an annual turnover (sales) of about US\$20 million. It is still looking for new business, but there are not many left to buy in the UK. The Group's

UK operations are well organized and running well, with good factories, product development, distribution. Now they have decided to take their products into continental Europe. "If you can't get it right at home, you don't want to take it abroad." The Germans are the most health conscious eaters on the continent. This is a complex business because of a host of different conditions (laws, flavors, terminology, etc.) in each country, but the Group is presently trying to find its position in each of these markets. The Arkady Food Group (consisting of 7 companies that supply the baking industry with products) has manufacturing companies in Germany, France, Spain, Portugal, and Italy. Some of those are acting as distributors or agents for products from the Haldane-Granose Group. For example, in Spain, where there is a company named Arkady ADM Iberica, they have started a new division within that company called Alisana, which is selling the Haldane Group's products. But each product and its promotional materials must usually be modified for each market. Eventually, when tonnage warrants it, the Group hopes to start production in the various countries because transportation costs are very high—especially for frozen products.

Concerning possible entry into the U.S. market, John emphasizes the difference between selling commodities and selling specialties. You must think big in selling commodities and think small in selling specialties. John thinks that ADM is committed to much the same vision as he is "but their day to day work causes them to think in megatons." Yet the Harvest Burger may be changing that. ADM has recently employed Larry Cunningham to run their protein division. He has grown up in the business and he is extremely interested in the Haldane Group's activities. John thinks that as time passes ADM will embrace more and more of the activities that the Haldane Group has been involved with since its beginning. Yet John does not see a separate group, like the Haldane Group, starting in the USA. Rather he thinks that the Haldane Group has at least six world-class products, and that these will be sold in the USA. The Harvest Burger is, in fact, based on some of British Arkady's technology.

The Group has recently launched a new vegetarian product named Vegemince that John thinks has great potential in replacing what Americans call "ground beef" and what Britons call "mincemeat." Made at the Granose plant, it is based on textured vegetable proteins, including wheat gluten. "It is an extremely ingenious product that we've got patents filed for. It has an excellent texture that gives the mouth pleasure." The Group plans to sell it to other companies that manufacture meatless products. The Group is developing many new products, even though it now has more products than he wants.

To summarize: "We have a 'healthy food' Group. We have five excellent factories. We have a good product range that's enlarging. We have some good developments

coming up the line. We've got something that we can take into Europe that I think can be taken worldwide. The more successful we are, the more competition there will be. "Many people have been involved in creating this group of companies. Peter Fitch is a good source of information because he really lives the Group every day of the week. His official title is Director General Manager. Peter reports to John, who is responsible for many other companies including British Arkady (in Manchester), the European Arkady companies, 3 feed mills and a trading company in Ireland, etc. John was the Group Managing Director of ADM International Holdings, which has been restructured and is now named ADM International Ltd.; under it are British Arkady Company UK, Haldane Granose Food Group UK, and Arkady Feeds Ireland. The five-person board of ADM International Ltd. consists Dwayne Andreas, James R. Randall, Michael D. "Mick" Andreas, G. Allen Andreas, Jr., and John (the only Englishman).

"The main thing to remember is that this is all part of ADM, it has all been approved by Dwayne Andreas and the ADM board, and its very much in line with ADM's philosophy." Dwayne believes that soy products will play a key role in feeding this world. "To Dwayne, that is a mission." John hopes that the work of the many people in the Haldane Group may help Dwayne realize his dream. Address: The British Arkady Co. Ltd., Skerton Road, Old Trafford, Manchester M16 0NJ, England, UK. Phone: 061-872-7161. Fax: 61-873-8083.

522. Vitasoy International Holdings Ltd. 1994. New issue of 127,200,000 shares of \$0.25 each at \$2.28 per share: Prospectus. Hong Kong: Vitasoy International Holdings Ltd. 94 + 94 p. March 15. 28 cm. [Eng; Chi]

• **Summary:** This prospectus announces the first public sale of Vitasoy stock. Half the prospectus is written in English and the other half in Chinese. The sponsor and manager of this initial public stock offering is Wardley Corporate Finance Limited. Underwriters: Wardley Corporate Finance Limited, and Schroders Asia Ltd. The symbol "\$" refers to Hong Kong dollars unless otherwise indicated; 7.8 Hong Kong dollars = 1 U.S. dollar, and the exchange rate is fixed.

Contents: Summary. Expected timetable. Definitions. Preliminary. Conditions of the new issue. Share capital. Indebtedness. Risk factor. Directors and corporate information. Parties involved in the new issue. Information relating to the Group: Introduction, corporate structure, history and development (see separate record), strategy, brands, market share and competition, marketing and sales, operations, tofu, Guang Ming Farm, Gardner Merchant, financial information, future plans and prospects, directors, management and staff, trademark valuation, profit and dividend forecasts, proceeds of the New Issue and working capital, adjusted net tangible assets and net assets. Appendixes: 1. Accountants' report. 2. Profit forecasts. 3.

Trademark valuation. 4. Property valuation. 5. Statutory and general information. Prospectuses and application forms. Procedure for application.

Financial summary (in million Hong Kong dollars): Turnover (sales) has grown from 795 in 1991 to 912 in 1992 to 996 in 1993. Profit before taxation has grown from 43.8 in 1991 to 88.6 in 1992 to 108.8 in 1993. The company has 5 executive directors and 4 non-executive directors. All of the directors have British, Australian, U.S., or Canadian nationality. Three of the 5 executive directors are children of the founder, K.S. Lo: (1) Mr. Winston Lo Yau Lai, age 52, of Hong Kong (British nationality). Frank graduated from the University of Illinois with a BS degree in Food Science, then earned his MSc degree in Food Science from Cornell University in New York; (2) Mr. Frank Lo Yau Ki, age 54, of Hong Kong (British nationality). Frank attended Queensland Agricultural College where he obtained a diploma in dairy manufacturing before joining the group in 1965; (3) Ms. Yvonne Lo Mo-Ling, age 45, of San Francisco (California; USA nationality). Yvonne is president of the Group's operations in the USA and has been responsible for them since 1980. She received a BA degree from Oberlin College in Ohio and took undergraduate studies in Urban and Regional Planning at the University of Toronto in Canada.

Brands: Vitasoy soybean milk is the Group's principal product. Sales (in million Hong Kong dollars) were \$337.4 in 1991 (42.5% of total sales), \$397.0 in 1992 (43.5% of total), and \$411.6 in 1993 (41.3% of total sales). Sales of tofu and other food products were \$32.9 (US\$4.21 million) in 1991, \$50.2 (US\$6.44) in 1992 and \$50.7 (US\$6.5) in 1993.

In terms of turnover (sales) by geographical area, Hong Kong is by far the leading area with 78.9% of total worldwide turnover (\$995 million) in 1993, followed by North America (12.0%), Macau (2.4%), Singapore (2.2%), PRC (1.6%), Australia/New Zealand (1.6%), and others (1.1%).

Senior management includes: Mr. Jerry Maynard, age 43, who is president of Nasoya. He joined the group in 1988 and became president of Nasoya in Sept. 1993. Mr. Michael Ho, age 38, is president of Azumaya. He joined the Group in 1982 and became president of Azumaya in June 1993.

Trademark valuation: An independent valuer has valued them at HK\$260 million.

Assets: The main trade marks are Vitasoy, Vita, Balanz, Azumaya, and Nasoya. Tangible: \$781 million. Net assets: \$1,051 million.

Subsidiaries: Value of issued and paid up share capital: Vitasoy (U.S.A.) Inc. US\$12.0 million. Nasoya Foods Inc. US\$6.346 million (incorporated 13 July 1990). Azumaya Inc. US\$6.5 million (incorporated 1 July 1969).

Properties: The main property, located at No. 1 Kin Wong St., Tuen Muen, New Territories, has a capital value of HK\$140 million on 28 Feb. 1994. This is a 17-story industrial building, completed in 1986, on a site of 33,250



square feet (3.089 square miles). It has a total gross floor area of approximately 311,815 square feet, including 38 lorry parking spaces and 22 private parking spaces. The property is held from the Government under New Grant No. 2606 for a term extending to 2047. The current ground rent is \$600 per annum. The Azumaya rental property comprises 37,172 square feet of interior floor space on 2 acres of land. Monthly rental is about \$20,000. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

523. Vitasoy International Holdings Ltd. 1994. History and development (Document part). In: New issue of 127,200,000 shares of \$0.25 each at \$2.28 per share: Prospectus. 1994. Hong Kong: Vitasoy. 94 + 94 p. See p. 14-15. March 15. 28 cm. [Eng; Chi]

• **Summary:** The Company, originally named Hong Kong Soya Bean Products Company Ltd. was founded in March 1940 by four men, Mr. (later Dr.) Lo Kwee Seong, Mr. Shiu Wai-Ming, Mr. Chan Nam-Cheong, and Mr. Kwan Yim-Chor. The Company's first product, named Vitamilk, was first sold in Hong Kong just prior to the outbreak of World War II. Note: Production began on 9 March 1940. Vitamilk was fortified with calcium, cod-liver oil, and vitamins, and sold in small milk bottles. Production of Vitamilk ceased during the War, but after the War the Company relaunched Vitamilk, which was then produced at and sold from, small premises in Causeway Bay. 1950–The Company moved to new premises in Aberdeen to keep up with growing sales; it now had increased production capacity and facilities for research and development. At the same time the Company became the franchisee for Green Spot, an orange flavoured soft drink. Green Spot proved highly popular in Hong Kong and provided the company with the opportunity to gain important experience in pasteurization and sterilization techniques. 1953–This new expertise led to the Company's development of a sterilized version of Vitamilk, which had a longer shelf life. At the same time the product was renamed Vitasoy in English and repackaged in narrow-necked soft drink bottles, which replaced the traditional milk bottles. Note: In 1953 the company first began to work with UNICEF to popularize the use of soy beverages in developing countries. 1957–The Pepsi-Cola franchise replaced the Green Spot franchise.

1960–The image of Vitasoy as a nutritious quality product received a boost when UNICEF became aware of the attractions of a high protein, vitamin enriched soybean milk for use in developing countries. 1961–An additional soymilk production plant was opened in Kwun Tong to keep up with rapid increases in sales of Vitasoy. 1962–The introduction of a malt Vitasoy helped lead to further increases in sales. From 1955 to 1970 sales of Vitasoy grew from approximately 12 million bottles to approximately 60 million bottles per annum.

1970s–The Company continued to expand and develop.

1975–A major development was the adoption of a new Tetra Pak packaging process, which brought many benefits. “In addition to enhancing the quality of the product, the new light and disposable packaging meant that Vitasoy could be sold in the non-returnable soft drinks market which significantly reduced both the delivery costs of the product and the costs associated with collecting returned bottles. The new packaging also offered greater scope for innovative design which assisted in marketing the Company's products. To coincide with this technical innovation, in the mid-1970s the Company repositioned Vitasoy in the market by promoting it as a soft drink as well as a milk substitute. The remainder of the 1970s saw the Company's product base expand away from Vitasoy and malt Vitasoy.

1976–A range of fruit juice drinks was introduced under the vita brand name. These were also packaged in Tetra Pak cartons and initial flavors included orange, lime, mango, and guava. 1976–The Company decided to relinquish the Pepsi-Cola franchise in favor of producing its own range of carbonated drinks, again under the Vita brand name. The carbonated products, which included cola, orange, lemon lime, and cream soda, were initially sold in returnable bottles and subsequently also in the form of fountain syrups. Both Vita Juice drinks and Vita carbonated drinks won immediate consumer acceptance upon their introduction. 1977–Exports to Australia began. 1978–Vita Juice drinks now have over 30% of the Hong Kong fruit juice drinks market. 1978–The Company moved its Aberdeen production facilities to Heung Yip Road in Aberdeen. 1978–The Company launched a line of traditional teas, the first of which was chrysanthemum, which were sold under the Vita brand and packaged in Tetra Pak cartons.

1979–The Company began a further significant diversification of its business by entering into an agreement with Guang Ming Farm [at Shenzhen, just inside China]. Under the initial agreement, which was for a term of 5 years, and subsequent revisions to this agreement, the Company obtained the rights to market and sell most of the farm's fresh milk output in Hong Kong and Macau. Today the farm produces approximately 55% of all fresh milk sold in Hong Kong.

The late 1970s and early 1980s were characterized by the Company's push into overseas export markets. Each of these export markets took time to develop, both in terms of developing consumer awareness of the Vitasoy and Vita products and particularly in identifying the most suitable and effective distribution channels. 1979–Exports to Papua New Guinea and to Canada began. 1979 Jan. 15–Vitasoy (U.S.A.) Inc. is incorporated.

1980–Exports to the United States began. 1982–In the United States, the Company established its own distribution operations. 1982–Exports to Singapore began. 1985–The Company acquired the operations of its Singapore distributor to gain greater control over and more efficient distribution

of its products. 1987–Due to growth of operations, the Company opened a new head office and principal manufacturing facility in Tuen Mun. 1989–The Company acquired a 12% equity stake in its contract packer in Papua New Guinea to gain greater control over and more efficient distribution of its products.

1990 Sept. 24–The Company name is changed to Vitasoy International Holdings Ltd. from Hong Kong Soya Bean Products Co. Ltd. 1990–The Group made the first of two significant diversifications from its traditional business by entering into a joint venture with Gardner Merchant to provide large-scale contract catering services in Hong Kong. Gardner Merchant, headquartered in the United Kingdom, is one of the leading contract catering firms in the UK; the Group has a 40% interest in the joint venture.

1990 Aug.–In its second diversification the Group entered into the manufacture and distribution of tofu in the United States through the purchase of Nasoya, based in Leominster, Massachusetts on the east coast of the United States. 1993 May–The Group acquired Azumaya, a large tofu manufacturer based in San Francisco, California, with a distribution network covering the west coast and mid west of the United States. These acquisitions have not only made the group a [sic, the] leading manufacturer and distributor of tofu in the United States but have also provided the Group with an extensive distribution network throughout the United States and Canada for its other products. 1992–Distilled water was launched under the Vita brand.

1994 Feb.–The Group opened a new production facility on a site at Guang Ming Farm at Shenzhen in the PRC [China] to replace the group's plant in Aberdeen. The Shenzhen plant, which has been built and will be operated pursuant to a joint venture with Guang Ming Farm, is currently operating at partial capacity and is expected to be fully operational by the middle of 1994. The Group's old production and packaging facility at Aberdeen is currently being leased by the Group to provide production capacity until the Shenzhen plant becomes fully operational. At that time the Group will cease to lease the facility at Aberdeen and all beverage production will then be at Tuen Mun and Shenzhen. Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

524. Marrese, Anthony. 1994. Travels collecting soyfood products, interviewing soyfoods manufacturers, and sending the packages and reports back to Soyfoods Center (Overview). *SoyaScan Notes*. June 3. [Eng]

• **Summary:** Letter–1989 Oct. 28. Report from France.

Letter–1990 Dec. 24. Contains 1 report from India and 11 labels. He is now c/o Richter in Worpswede, Germany.

All the products (priced with “Dm”) from Germany were purchased between Jan. 1992 and June 1992. All the products from Ireland (priced with “P”) were purchased between June 1992 and May 1993. In March 1993 he

interviewed Molly Turner and Teac Macro Center in Ireland. All the products priced with escudos (\$) from Portugal were purchased between May 1993 and May 1994.

Letter–1994 May 12. Contains 19 labels and 3 company reports (all from Ireland). He has been out of touch for about 2 years. From Germany he traveled to England, then Ireland, then Portugal, with interim visits to France, Israel, and Germany. He is now in Lisbon, Portugal. He and girlfriend Mary have just received starter cultures from GEM Cultures in California. They plan to make their own koji and misos this year, for their own use and the use of a small group with which they work. This group is mainly interested in psychic development.

525. Eridania Béghin-Say (Montedison Group). 1994. Annual report 1993. 54, avenue Hoche, BP 47108, 75360 Paris Cedex 08, France. 67 p. 30 cm. [Eng]

• **Summary:** Renato Pico is the company's chairman. The company's turnover (in million French francs) increased from 49,741.4 in 1992 to 50,907.4 in 1993. Operating income increased from 3,618.4 in 1992 to 4,039.8 in 1993. Net income from continuing operations increased from 1,287.0 in 1992 to 1,531.0 in 1993.

The company's core business is sugar and derivatives. It is active in the starch and derivatives sector through Cerestar. It is a leader in the crushing and refining business through Cereol in Europe (which holds a market share of nearly 23%), through Central Soya (number 3 in North America in this sector), with CanAmera in Canada (50% owned), and number 1 in the world for refined lecithins and concentrated proteins. In 1993, the group's 32 plants crushed some 9.4 million tons of oilseed to produce 6.8 million tons of soybean meal and 2.2 million tons of crude oil, including 1.8 million tons of refined oils. Crushing and refining contributed 28.1% of the company's total turnover and 12.4% of the total operating income.

The company is active in animal feed through Provimi in Europe; in 1993 the company's total production of animal feed totalled approximately 2.2 million tons. The company is active in consumer products (mostly refined oils and derivatives) through Medeol, Lesieur in France, Koipe in Spain, Carapelli in Italy, and Ducros in France, Italy, Spain, and Portugal. In 1993, Eridania Béghin-Say marketed 100 million liters of olive oil and 225 million liters of seed oil under its own brands, mainly for consumer and catering markets. Address: Paris, France.

526. *Economist* (London). 1994. Soya coming: Joint ventures in China (Shenzhen). Aug. 6.

• **Summary:** Even when they have local expertise and a good joint-venture partner, foreign companies find it difficult to invest successfully in China. The perils of trying to open a joint-venture factory in China include ever-changing government laws, promised infrastructure that fails to appear,

hidden political agendas, phantom night shifts making products the foreign partner never sees, and corruption that often reaches up to the most senior official. It is frustrating, but the prospect of being left behind still draws in foreign firms—"like moths to a flame." So says Winston Lo, chairman of Vitasoy, a Hong Kong firm with a history of making drinks that dates back to 1940. In addition, Mr. Lo is operator of one of the more successful joint ventures in China, and has learned to sell its products worldwide, first to overseas Chinese, but increasingly now in natural and health food stores in America (where the company is the largest tofu manufacturer).

Vitasoy currently makes more than 400 million packs of drinks a year, 70% of them sold in Hong Kong and the rest exported. During the year ending 31 March 1994, the company made a net profit of HK\$250 million (US\$32 million) on sales of almost HK\$1.2 billion.

Like others, Vitasoy has been beguiled by the immense profits that the Chinese market seems to offer. The average Chinese consumes only 4 liters of non-alcoholic drinks a year, vs. 60 liters per person in Hong Kong. Vitasoy has cautiously chosen as its base the southern province of Guangdong, next to Hong Kong, where many people know Vitasoy's products—which they can see advertised on television. Vitasoy now owns 70% of a new US\$16 million plant just across the border in Shenzhen; the rest is owned by Guang Ming Farm, a state-owned enterprise controlled by the Guangdong provincial government. Four production lines are already running at this new plant, and six more are to be added before the end of 1994, giving a capacity of 620,000 packs of drinks a day. Mr. Lo has found that the hardest part of doing business in China is choosing the right partner, one who is resourceful, co-operative, and fair.

Vitasoy's relationship with Guang Ming began in 1979, when Vitasoy contracted to ship a herd of New Zealand dairy cows to China, install modern milking and processing equipment, and train the staff. In return, Vitasoy was given the right to market most of the firm's output in Hong Kong and Macau [or Macao; a Portuguese overseas territory]. This joint venture has expanded into a 6,000 acre ranch with a herd of 6,300 cows. Vitasoy claims half of Hong Kong's market for fresh milk.

Investors from Hong Kong account for about 80% of the investment in Guangdong province. But they seem to be getting tired of the many problems with doing business in China; the number of new joint-venture projects approved in the province fell by one third in the first 5 months of this year, compared with the same period last year. Unless China's central government is more welcoming to long-term investors like Vitasoy, "the moths circling its flame may soon look for safer flying space."

527. Brown, Lester R.; Kane, Hal; Ayres, Ed. 1994. *Vital signs 1994: The trends that are shaping our future*. New

York, NY: W.W. Norton & Co. 160 p. 24 cm. [200+\* endnotes]

• **Summary:** Discusses (with graphs) important trends that effect a sustainable society in the following areas: Food, agricultural resources, energy, atmosphere/air, economy, transportation, the environment, society/population/medical, and military.

World soybean production per person (p. 28-29) rose steadily from about 7 kg in 1950 to about 21 kg in 1979. Since then it has been flat, averaging about 20 kg, which was also the estimated figure for 1993. Total world production of soybeans has increased steadily from about 18 million metric tons (tonnes) in 1950 to a record 116 million tons in 1992, falling by 4% to 111 million tonnes in 1993. Heavy rains and flooding in the U.S. Midwest, the world's principal growing region, accounted for the decline. Although the U.S. soybean harvest decreased nearly 16% from the previous year, it still accounted for nearly half of the world harvest. Brazil, with a harvest of 23 million tonnes, remained solidly in second place. Argentina edged out China for third place. Soybean yields in China are about 33% lower than those of the 3 leading western producers (which range between 2 and 2.5 tonnes per hectare). The USA regularly exports one third of its soybean crop as unprocessed beans and enough of the remainder as meal so that about 50% of the crop is exported. By contrast, Argentina and Brazil crush most of their soybeans domestically and export them largely as meal, keeping much of the soy oil for domestic use. China exports a small proportion of its crop as beans, largely for food use in Japan and other Asian countries. The leading importers of soybeans are Japan, Germany, the Netherlands, and Spain.

Population trends (p. 98-99): In 1993, the world added 87 million people to its numbers, down slightly from the 88 million in 1992—thanks largely to a dramatic fertility decline in China, home to more than one-fifth of the world's population. Total world population in late 1993 was an estimated 5.557 billion. 94% of the new people lived in developing countries, home to 78% of the world's population. Africa has the world's fastest growing population. The average annual growth rate in world population peaked in about 1962 at 2.2%. It had fallen to 1.75% in 1986 and was 1.56% in 1993. Yet the slowdown in the world's growth rate is happening much more gradually than was expected just a few years ago. In 1982 the United Nations projected that world population would stabilize in the year 2100 at 10.2 billion—almost twice what it is today. The U.N. now projects that world population will grow until it reaches 11.6 billion sometime after 2200. Address: Worldwatch Inst., 1776 Massachusetts Ave., N.W., Washington, DC 20077-6628.

528. Or, Gary. 1994. Our personal experiences with utilizing Ontario soybeans for Vitasoy production. Paper presented at Incoming Soybean Technical Mission. 12 p. 18 Oct. 1994 at



Harrow Research Station, Harrow Ontario, Canada. [Eng]

• **Summary:** Contents: Company profile. Soymilk production. Our experience with Ontario soybean. Varieties to help Vitasoy International in future expansion.

The company was founded in 1940 by Mr. Guan, Mr. Chen, and Mr. Chu. In March 1994 Vitasoy shares were first listed on the Hong Kong Stock Exchange. Today Vitasoy exports to more than 20 countries via distributors in North America, Macao (Portuguese Macau, near Canton), Singapore, and China (PRC). The company's mission is to produce and promote high-quality, nutritious and wholesome products which can be purchased anywhere, at any time, at a price that everyone can afford."

The company makes two kinds of soymilk: Regular and organic. For regular soymilk, which contains 2% protein and 1% fat, Grade No. 1 Ontario soybeans are the first choice; more than 120 containers (mostly 20 tons each) were received from Jan. to Sept. 1994. No shipment was rejected. The current packaging is 45 kg gunny sacks [Note: Gunny, a term first used in 1711, is derived from the Hindi term *gani*. It is a coarse heavy fabric, usually of jute or hemp, used especially for bagging]. The soybeans are first ground into flour. A mild beany flavor is desired. For organic soymilk, which contains 3.5% protein, U.S. soybeans with OGBA [Organic Growers and Buyers Association] certification are used. The whole beans are ground to a slurry, and are not first ground into a flour. The fat content is 3.0% for regular and 1% for lite. Beany flavor is removed.

Vitasoy would like to buy high-protein, organically grown Ontario soybeans—ideally OGBA certified—but they are not readily available. Vitasoy is planning a franchising program. Address: Technical Research and Quality Assurance Manager, Vitasoy International Holdings Ltd., No. 1, Kin Wong Street, Tuen Mun, N.T., Hong Kong. Phone: 466 0333.

529. Carr, Steve. 1994. Re: Work with soyfoods in Spain. Letter to William Shurtleff at Soyfoods Center, Nov. 12. 1 p. Typed, with signature. [Eng]

• **Summary:** "I am presently trying to encourage soyfoods in the Basque region of Northern Spain. I have had some success in persuading some restaurateurs to offer a wider choice of alternatives to meat on their menu, but the particular combination that I am trying to research, and supply, is eluding me at the moment. In particular, the soy dish that I am hoping to be able to provide has a texture rather like hamburger or cutlet." Address: Avda Euskadi 8, 3 izq, 20560 Onati, Gipuzkoa, Spain. Phone: 943 79 07 84.

530. **Product Name:** [Salutem Whole-Grain Spaghetti with Soya].

**Foreign Name:** Salutem Spaghetti Integral Com Soja.

**Manufacturer's Name:** A. Centazzi, Lda.

**Manufacturer's Address:** Rua Aliança Operária 4, 1300

Lisbon, Portugal. Phone: 363 7860.

**Date of Introduction:** 1994.

**Ingredients:** 90% whole wheat and rye flours, 10% soya flour.

**Wt/Vol., Packaging, Price:** 500 gm plastic bag.

**How Stored:** Shelf stable.

**New Product–Documentation:** Label sent by Anthony Marrese. 1994. May. 28 by 20 cm. Green, yellow, white and brown on clear plastic.

531. **Product Name:** [Soybeans].

**Foreign Name:** Feijao de Soja.

**Manufacturer's Name:** Próvida Produtos Naturais, Lda.

**Manufacturer's Address:** Cortegaça, 2715 Sintra, Portugal. Phone: 967 11 93.

**Date of Introduction:** 1994.



**New Product–Documentation:** Label sent by Anthony Marrese. 1994. May. Green, orange, and black on white. "Agrobio–Agricultura Biológica."

532. **Product Name:** [Whole Wheat & Soy Pasta].

**Foreign Name:** Massas Integrais (esparguete).

**Manufacturer's Name:** Próvida Produtos Naturais, Lda.

**Manufacturer's Address:** Cortegaça, 2715 Sintra, Portugal.  
Phone: 967 11 93.

**Date of Introduction:** 1994.

**Ingredients:** Hard wheat flour and soya.

**Wt/Vol., Packaging, Price:** 500 gm plastic bag.

**How Stored:** Shelf stable.

**New Product–Documentation:** Label sent by Anthony Marrese. 1994. May. 5.25 by 3. Green, orange, and black on white. "Agrobio–Agricultura Biológica." Retails for 220.00.

533. **Product Name:** [Tofu].

**Manufacturer's Name:** Tofu-Ya.

**Manufacturer's Address:** Calle Río Manzanares, nº28, Carretera de Valencia, km 25, E-28500 Arganda del Rey (Madrid), Spain. Phone: 91 871 6117.

**Date of Introduction:** 1994.

**New Product–Documentation:** Letter from Wataru Takai. 1994. A new tofu shop started using his equipment in Madrid, Spain.

Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. Tofu-Ya is alive and healthy. Director: Miki Takazumi. All personnel are Japanese. They do not give tours to the public. Closed during the month of August.

534. Pan, Lynn. 1994. *Sons of the Yellow Emperor: A history of the Chinese diaspora*. New York: Kodansha International. xx + 418 p. Illust. (16 pages of plates). Index. 22 cm. [174\* ref]

• **Summary:** On page xiv is a very interesting map of southern China, with a blowup of southern Kwangtung [Guangdong] province, the area around Canton, the Pearl River, the South China Sea, Macao, and Hong Kong. For this area was at the heart of the Chinese diaspora—especially in the 19th and 20th centuries and especially from two small areas southeast of Canton: (1) Sam Yap (Three Districts) of Punyu, Shuntak, and Namhoi—the more affluent counties. (2) Sze Yap (Four Districts) of Hoiping, Sunwui, Toishan, and Yanping—the poorer and ruder area southwest of Sam Yap. Although the people from both areas speak Cantonese, they have difficulty understanding each other's speech. Other important languages of the diaspora were Hakka and its numerous variants (spoken in Guangdong, Fujian, etc.) and Hokkien (spoken in southern Fujian, Taiwan, and by many overseas Chinese throughout Southeast Asia). It is closely related to Teochew / Teochiu, though mutual comprehension is difficult.

In Part Four: 1960s to 1980s, Chapter 16, titled "Food" contains a history (p. 320-23) of Amoy Food Limited, now an international firm, with its headquarters in Hong Kong, owned largely by overseas Chinese. For many overseas Chinese, "perhaps no label has quite the resonance of Amoy." In 1908, T'ao-hua Ta-t'ung, the predecessor of the company, was founded in Xiamen for producing bottled

soy sauce and dairy milk. Its founder was Yang Ko-fei, who soon brought in other shareholders. In 1911 clashes between the founder and other shareholders lead to a break-up of the company, with one party going it alone as T'ai-hua (Tao Fia), and the other as Ta-T'ung. Yang Ko-fei went with the latter company, who chief shareholder was Tan Kah Kee, the rubber and pineapple magnate.

It became increasingly apparent, however, that the two companies would do much better if they operated as a single unit. So in 1928, when a new rival appeared, they merged, with the smaller of the two now located in Hong Kong. Thereafter the company experienced steady growth. Eventually the branch in Hong Kong came to eclipse the parent company in Amoy. In 1937, when the Japanese invaded China and war broke out, almost the entire canning plant was moved to Hong Kong from Amoy. In 1951, when the company went public, the ownership passed mainly into the hands of overseas Chinese.

Today Amoy Foods' products are on the shelves of supermarkets and Asian markets in 37 countries. Half of Amoy Foods' shares are owned by the American food giant Pillsbury (owner of Haagen-Dazs and the Burger King hamburger chain) and the other half by Hang Lung (a Hong Kong real estate company). Amoy's line of 34 sauces include dark soy sauce (lau-ch'ou), light soy sauce (*sheng-ch'ou*), black bean sauce [made of fermented black soybeans], sweet and sour sauce, etc.

On the roof of the Amoy factory's main building a visitor can see a demonstration of the old-fashioned process; "here, an old man with sleeves rolled up goes from earthen vat to earthen at plunging his arm into the thick brew of black and yellow soy beans to give it a gentle, almost loving stir. He works rhythmically, with deep concentration. A Soy Master with thirty or forty years behind him, he stands in a line which goes back to the fifth century, from when dates the earliest surviving soy sauce recipe."

Companies like Amoy have helped to make Chinese foods more widely available in the West. Not so long ago, Chinese cookbooks published in England said that Worcestershire sauce was an acceptable substitute for soy sauce, because the latter was available only at delicatessens and specialty shops [Asian grocery stores] in London. Even during the last five years, the range of Chinese foods available in London's Chinatown has grown remarkably. In Chinatowns in the United States [and especially those in San Francisco {California} and New York] the selection of Chinese foods has long [perhaps always] been greater than at those in London or other places in Europe.

Page 324: The first person to make tofu in Europe was Li Shih-tseng [Li Yü-ying, Li Shizeng], a Chinese intellectual and educator. As a young student of biochemistry in France in 1900, Li was to be greatly influenced by the writings of Nietzsche and Bergson. A Francophile, Li was one of the founders of the Work and Study Program, which

sent Chinese students abroad for part-time work and part-time study. One of these students, who would later become famous, was Deng Xiaoping. While establishing his tofu [beancurd] factory in France, Li drew on his knowledge of biochemistry; the factory provided jobs for many students in the Work-Study Program.

Li, a vegetarian, was a firm believer in the nutritional value of tofu and other soybean foods. His factory also made and sold soybean flour, fermented tofu, soy-bean milk, and soy-bean jam, and these foods nourished not just Chinese, but also Westerners, including American soldiers who fought in France during World War I (Lin Hai-yin 1971, p. 125). “All this was before the faddish demand for tofu by health food enthusiasts, and before it became widely known as an unbeatable source of protein. The company closed after the war, but among certain Chinese *émigrés* [emigrants from China] France was never to lose its reputation for beancurd. In Europe up to the 1980s *tofu kan*, a particular variety of fermented beancurd [sic, pressed tofu] much demanded by eastern Chinese palates, could only be had in Paris, and the handful of *émigrés* in London had to send over for it.”

Li was also a founder of the Université Franco-Chinoise at Lyons, a sort of accommodation and placement agency.

About the author (facing p. 418). Lynn Pan was born in Shanghai; she left as a child. She “has lived as an immigrant in North Borneo and England, and worked as a social scientist, journalist and writer in London, Geneva [Switzerland], Helsinki [Finland], and Hong Kong.” In 1981 she returned to Shanghai for the first time, and was gripped by deep, haunting sensations of nostalgia. She had found the place where she belonged, her inheritance, and she began to write this book. She is the author of at least five other books—all listed facing the title page. Her Epilogue and Afterword at the end of this book are both very interesting.

535. Storup, Bernard. 1995. Société Soy was acquired by Diététique et Santé in July 1993, was renamed Nutrition et Soja, and is now located in Revel (near Toulouse) in southern France. Part I (Interview). *SoyaScan Notes*. March 6.

Conducted by William Shurtleff of Soyfoods Center. [Eng] • **Summary:** In 1993 Bernard was contacted by Diététique et Santé, a big French manufacturer of health foods (founded in 1972), which wanted to buy his company, Société Soy. At the time Bernard’s company was doing well financially and they had excellent equipment. But they had reached the maximum they could achieve in the health food market, and the only market into which they could expand was supermarkets.

First some background: In Sept. 1990 Société Soy had taken in an outside investor, a retired banker, who was wealthy and friendly man, and who invested as a private individual. In exchange for contributing cash funds to help in expansion and give the company more of its own capital (*fonds propre*), he was given ownership of 25% of Société Soy’s shares. The banker also worked at the company one

day a week as an accountant. At this time, the company was making money—but not that much.

In early 1991 Bernard had created the new and more neutral brand *Union Natur* to be used on all products sold in supermarkets by Société Soy. So Bernard was looking for a company with which he could work as a partner in entering this big new market.

In the late 1980s and early 1990s the Sandoz Group accelerated its expansion into the healthy/nutritional foods industry throughout Europe. The Sandoz Group is best known in Europe as a manufacturer of pharmaceuticals (its largest division) and chemicals (its second largest division). Sandoz’s food/nutrition division is now its third largest. About 5-6 years ago Sandoz was involved in major pollution problems related to its chemical production. Sandoz, the big Swiss pharmaceutical company, was famous during the 1960s among young people in Europe and America as the manufacturer of LSD. From one viewpoint, this popular psychedelic started the counterculture revolution in the Western World, including the natural foods movement. One of the Sandoz Group’s earliest acquisitions in the health food field had been the British-based Wander Co. In about 1987-88 the Sandoz Group bought the Céréal Co. Then on 1 July 1992 Sandoz bought Diététique et Santé in Revel, France—which was renamed Nutrition et Santé on 1 Aug. 1994. Also on 25 Aug. 1994 the Sandoz Group purchased Gerber, the huge American manufacturer of baby foods (headquartered in Fremont, Michigan). Two months ago the Sandoz Group announced that it plans to sell its entire chemical division, with about 10,000 employees. Sandoz was a world leader in dyes. Money from the sale chemical division will be used to buy more companies in the field of food and nutrition. In the future, Sandoz plans to keep only its pharmaceutical and its food/nutrition divisions.

Diététique et Santé was established in 1972 in Revel and that year they purchased the brand (registered trademark) Gerblé from a small company located near Lyons (French = Lyon) in France. So now Nutrition et Santé is the head of Sandoz nutrition branch in France. In addition, Sandoz has a nutrition division in every European country, with a major food company as head of that branch. Approximately 95% of the sales of these companies are to supermarkets, and only about 5% to natural- and health-food stores.

Although it is owned by the Sandoz Group, the company Nutrition et Santé is not well known by consumers. Yet its brands, trademarks and products are very well known—some all over Europe. These include Ovomaltine [Ovaltine], Céréal, Wander, Wasa (a Swedish bread, pronounced VA-sa), Gerblé, Nerjisport, and Isostar. The latter two products are non-protein sports drinks, rich in mineral salts, that replace electrolytes after exercise. They are now developing a product named Gerlinea (like Slimfast, a low-calorie diet powder or bars).

Nutrition et Santé is the leading company in the health



food market in France. Sandoz-owned counterparts in other European countries include Sandoz-Spain, Sandoz-Italy, Eden in Germany, Reforma in the Netherlands, and Wander in the UK. They have 54% of the health food market in supermarkets in France.

So in July 1993 Bernard sold Société Soy to the Sandoz Group because he believed the sale would help the company to develop and grow. He stayed on as managing director and was given a great deal of independence and responsibility. Sandoz wanted to keep the acquisition fairly quiet so that retailers and consumers would not be concerned. Very little information about the deal appeared in the public press, except in the financial press. Before the sale, Société Soy was a corporation whose shares were owned as follows: Bernard Storup 35%, Jean de Preneuf 35%, the retired banker 25%, and the company's workers 5%.

After Société was sold, Nutrition et Santé owned 100% of the shares. Bernard and Jean had no difficulty at all giving up their share of ownership in the company they had started in 1982. Nutrition et Santé had offered Bernard and Jean ownership in the company, but the latter two men felt the situation would be more clear if Nutrition et Santé owned 100%. "The world is big and life is short. Daily work is just as interesting as ever." Continued. Address: Managing Director, Nutrition et Soja, Z.I. de la Pomme, B.P. 33, 31250 Revel (near Toulouse), France. Phone: +33 62.18.72.50.

536. Storup, Bernard. 1995. Société Soy was acquired by Diététique et Santé in July 1993, was renamed Nutrition et Soja, and is now located in Revel (near Toulouse) in southern France. Part II (Interview). *SoyaScan Notes*. March 6. Conducted by William Shurtleff of Soyfoods Center. [Eng] • **Summary:** In August 1994 Bernard moved the company from Saint-Chamond to Revel, near Toulouse in the south of France and on 1 Aug. 1994 the company name was changed from Société Soy to Nutrition et Soja (pronounced nu-tree-SYON et so-ZHA). On the same day the name of Diététique et Santé was changed to Nutrition et Santé. Nutrition et Soja still uses *Soy* as their trademark for products sold at health food shops; this trademark is very widely known among health food consumers in France. "Remember that 'Soy' doesn't mean anything in French." The water in Revel is of excellent quality, just like the water in Saint-Chamond. In Revel, Nutrition et Soja gets its water from another natural park.

Bernard's company is now located only 500 meters from another factory owned by Nutrition et Santé that makes Gerblé brand products—such as organic cookies, cereals, etc. The Cérééal brand products are made at a factory in Annonay, 500 km from Revel.

Bernard's company moved into a completely new factory, with an integrated production line from dehulling to packaging in Tetra-Pak cartons. It is really a big installation. The company has not introduced many new products since

it was acquired 18 months ago. Bernard has been working a lot with companies in Germany, Spain, the Netherlands, and Italy which have been selling soymilk made typically by Alpro in Belgium or Innoval in France. But Innoval went out of business and no longer exists. They declared bankruptcy twice, first in 1993 and again in late January 1995. In 1993 an investor bought Innoval for almost nothing, invested a little money in it, but was not able to make it survive. Nutrition et Santé bought all of Innoval's equipment (made by Alfa-Laval; it was very nice), and Bernard is now using some of this equipment (including a large, automatic Buehler dehulling system) and some of the equipment he had before in Saint-Chamond. And Bernard has been working with their former soymilk customers in hopes of becoming their supplier of soymilk. Most of Bernard's sales have always been to health food stores under the *Soy* trademark. This has not changed since the acquisition. Bernard estimates that he has at least 80% of the fresh soyfoods market in France—not including soymilk.

The soymilk market continues to grow, but there is still excess soymilk manufacturing capacity. Nutrition et Soja is now the leading soymilk manufacturer in France, and they may be the second largest in Europe after Alpro—though they are much smaller than Alpro, which sells about 25 million liters of soymilk and soy desserts each year. Alpro has five Tetra-Pak packaging lines, including one that packs in 500 ml (half liter) cartons.

Nutrition et Soja doesn't compete much with Alpro because Nutrition et Soja sells its soymilk under its own trademarks—Cérééal and Gerblé—in supermarkets all over Europe. There is not much difference between these two products, but because they used to be made by two different companies, different consumers have loyalty to each brand. For the health food market, Nutrition et Soja sells its soymilk under the BioSoy trademark, which was first used in 1990 by Société Soy.

Jean de Preneuf is still with the company, working as technical manager. Bernard is in charge of the total company Nutrition et Soja, in charge of production, administration, sales, and marketing. Bernard is very happy with his new parent company, which gives him lots of independence and responsibility, and which is doing a very good job at thinking in terms of the new integrated European market. One of the products with which Bernard is especially happy is their vegetarian sausage—which is 100% organic.

Thirteen years ago Société Soy registered and owned the trademark "tofu." But recently Bernard came to feel that this was not "fair play," so he gave ownership of the trademark to SOJAXA (pronounced so-zhak-SAA), the French soyfoods association. Address: Managing Director, Nutrition et Soja, Z.I. de la Pomme, B.P. 33, 31250 Revel (near Toulouse), France. Phone: +33 62.18.72.50.

537. Silla, José A. 1995. Re: Soymilk is now being produced

in Valencia, Spain. Letter (fax) to William Shurtleff at Soyfoods Center, March 24. 1 p.

• **Summary:** The name of the soymilk manufacturer is not given. Impiva is a public organization for the development of small and medium industries in the region of Valencia. Address: IMPIVA, Plza, Ayuntamiento 8, E-46002 Valencia, Spain. Phone: Fax: 96-394-21 74.

538. Brown, Lester R.; Lenssen, N.; Kane, Hal. 1995. *Vital signs 1995: The trends that are shaping our future*. New York, NY: W.W. Norton & Co. 160 p. 24 cm. [200+\* endnotes]

• **Summary:** Overview: The acceleration of history—Economy picks up, energy use growing, warming trend resumes, food supplies tighten, disturbing health trends, computerizing the world, environmental issues shaping history.

Soybean production jumps. Meat production takes a leap. World grain stocks lowest in 21 years. World grain production per person is declining. The amount of grainland per person has dropped by half since 1950. Fertilizer use continues dropping. Wind power generating capacity rose 22%. World solar cell shipments jumped 15%. World bicycle production exceeds automobiles 3 to 1. Water tables falling on every continent. China's economy expands by 56% in four years. World population grows by 10,000 per hour; last year we added 88 million people. Number of refugees sets new record. Third World debt still growing. Tropical forests vanishing. Breast and prostate cancer rising. Hunger still widespread. CFC production has fallen for the 6th straight year.

The *London Guardian* calls *Vital Signs* the book that "... makes all other works of reference look trivial." "To make your research and analysis easier, Worldwatch has put all the charts, tables, and data from its research data bank on computer disk" (IBM or Macintosh compatible). Address: Worldwatch Inst., 1776 Massachusetts Ave., N.W., Washington, DC 20077-6628.

539. Gonzalez, R.; Varela, J.; Carreira, J.; Polo, F. 1995. Soybean hydrophobic protein and soybean hull allergy (Letter to the editor). *Lancet* 346(8966):48-49. July 1. [5 ref]

• **Summary:** Notes that in the 1980s, several outbreaks of asthma took place in the Spanish cities of Barcelona and Cartagena; they all coincided with the unloading of soybeans at the seaports. The subsequent inland transport and weather conditions were favorable for spreading the soya dust over the cities. For both cities, careful studies established a close link between the asthma outbreaks and the inhalation of soybean dust during the days of unloading and transport. Address: Dipartimento Investigación, Alergia e Inmunología Abelló SA, 19. 28037 Madrid, Spain; and Centro de Investigaciones Biológicas, CSIC.

540. **Product Name:** [Tofu].

**Foreign Name:** Tofu.

**Manufacturer's Name:** Sra. Jane Garbutt.

**Manufacturer's Address:** Capilerilla, Pitres 18414, Granada, Spain.

**Date of Introduction:** 1995.

**New Product—Documentation:** Letter from Jane Garbutt. 1996. Jan. 7. She is a community scale producer of tofu in the Alpujarra (Sierra Nevada) of Spain. She owns and frequently uses *The Book of Tofu* and *Tofu & Soymilk Production*.

Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. This company is dead.

541. Chan, Chi-Keung; Lee, Stella; Le, Naomi. 1996. Vitasoy recalls 30 million drink cartons. *South China Morning Post (Hong Kong)*. Jan. 10. p. 1 (Wednesday, ed. 2).

• **Summary:** "Soft drinks maker Vitasoy yesterday announced it is to recall an estimated 30 million drink cartons from Hong Kong and the rest of the world because of continuing production problems. The company, acting on more complaints about sour-tasting soya milk, is to also suspend production at its Tuen Mun plant. Managing director Winston Lo Yau-lai, who last week announced suspension of the company's Shenzhen carton production lines, last night would not rule out industrial sabotage.

"Retailers are being asked to stop sales of all cartons of Vitasoy drinks including soya milk, lemon tea and juices in 250-millilitre, 375 ml and one-litre packs. Customers and retailers would be offered refunds... The company estimated that recalling the 15 million packs in circulation in Hong Kong and Macau would take 12 days. But it could not say how long it would take to recall a further 15 million packs from more than 10 countries, including Canada, Australia, and the United States.

"Yesterday's announcement followed three more complaints from consumers concerning sour soya milk produced at the firm's Tuen Mun plant... The group decided to recall eight million drinks manufactured in Shenzhen last Thursday after a barrage of complaints. A day later, it also recalled 42,000 cartons produced in Tuen Mun... The company promised none of the 1,000 workers at the plant would be affected. The recall does not affect the company's bottled products including soya milk, iced teas, distilled water and Vita fresh milk. But paper products represent 'a significant proportion' of turnover.

"The firm admitted that the latest recall would have a 'material adverse effect' on profits. Vitasoy International shares will also be suspended from stock market trading from this morning. The news came just as its share price was recovering from the sharp fall caused by last week's announcement of the problems with Hong Kong and Shenzhen production. After falling more than eight per cent

since Friday, the price yesterday rose five per cent to \$3.125.

“Mr. Lo rejected claims the announcement had been provoked by Health Department pressure.” Preliminary results of Health Department tests showed that of the 240 samples tested, only “four had been found to have abnormal acidity.”

“While bacteria were found in these four samples, they were not of pathogenic (disease-causing) nature,” a spokesman said. “Further tests will be conducted to confirm the exact identity of the bacteria.”

542. Doidge, Brian. 1996. Canadian soybean export prospects for 1996. *Canadian Export Soybeans (OSGMB, Chatham, Ontario, Canada)* 9(1):3-4. Jan.

• **Summary:** “The recent formation of the Canadian Soybean Export Association (CSEA), serves to focus attention on this rapidly growing sector of the Canadian soybean industry.” The 1994/95 crop set a new record with soybean exports of 524,254 tonnes (19.26 million bushels). Another strong year is projected for 1995/06.

Note: The CSEA is an association of major Canadian soybean exporters; the association does not itself export. One of its major objectives is to lobby the Canadian government for funding and promotional support.

Talk with Michael Loh of Canada. 1996. Jan. 24. Members of CSEA include W.G. Thompson, Maple Leaf Foods, Cargill, etc. Nutrisoya, Inc. will also be a member.

A half-page table (p. 3) shows Ontario soybean supply and demand for 4 years from 1992/93 to 1995/96. Under soybean supply, statistics show: Acres harvested, beginning stocks, production, imports, and total supply. Under soybean supply are: Crush, export, seed, other domestic use, and total use. Plus ending stocks and average price per bushel.

A full-page table (p. 4) lists Ontario soybean exports for 4 years from 1991/92 to 1994/95. Ontario’s top four export customers in Asia in 1994/95 were: Japan (25,988 tonnes), Hong Kong (23,311), Singapore (22,502), and Malaysia (16,231). Others are Indonesia, North Korea, Philippines, and Taiwan. The top 4 customers in Western Europe in 1994/95 were: Netherlands 73,654 tonnes, Spain 61,134, France 51,119, Belgium 15,428. In Eastern Europe, Poland bought 10,000+ tonnes in 1993/94 and 1994/95 and Uzbekistan bought 7,117 tonnes in 1993/94. Total exports have grown steadily from 238,809 tonnes in 1991/92 to 495,772 tonnes in 1994/95. Address: Education and Business Manager, Ridgetown College of Agricultural Technology.

543. Nelson, Kent. 1996. Re: Soydiesel. Letter to Kenlon Johannes, National Biodiesel Board (NBB), Missouri, Feb. 23. 1 p. Typed, on letterhead.

• **Summary:** “Spoke with representatives at Apollo Group today. They are still very interested in introducing Soydiesel at the ‘98 Winter Olympics [to be held at Nagano, Japan].” They would like info on the use of Biodiesel (who, what,

when, how much) at the 1992 Summer Olympics in Barcelona, Spain, and an update on the 1996 Summer Olympics in Atlanta, Georgia, USA. “Obviously the more precedents the better for us.” Address: American Soybean Assoc., 7th floor, Tameike Tokyu Bldg., 1-1-14 Asakusa, Minato-ku, Tokyo 107, Japan. Phone: (03) 5563-1414.

544. Storup, Bernard. 1996. Re: New developments with soyfoods in France. Letter to William Shurtleff at Soyfoods Center, May 13. 2 p. Typed, with signature on letterhead. [Eng]

• **Summary:** On 22 April 1996 Alpro (Belgium) bought Sojinal (France) [from B & H Holdings].

Bernard recently met with Steve Demos (founder and CEO of White Wave) in Revel, France. They shared experiences, ideas for the future, and dreams. Bernard plans to visit him in Boulder next month for a few days.

The soymilk made by Nutrition & Soja is now packaged in about 12 different package designs [SKUs], including the brands BioSoy, Cereal, Gerblé, l’Abbé Bisson (Barcelona, Spain), and Union Nature. Address: B.P. 33, Z.I. de la Pomme, 31250 Revel (near Toulouse), France. Phone: +33 62 18 72 50.

545. Kuhn, Mary Ellen. 1996. Soy in the spotlight: Disease-fighting benefits may change the image of the once-lowly bean. *Food Processing (Chicago)*. May. p. 52-53, 55, 58.

• **Summary:** This is a cover story; on the cover is written: “Unlocking the secrets of soy,” with four large color photos. The article begins: “What a difference a couple of decades make.” Twenty or 30 years ago, most foodservice operators and consumers used soy with hesitation, sometimes scornful comments. “Today, however, the once-maligned soy protein has a much better image, thanks to a fast-mounting stack of research data suggesting it may help prevent and treat high blood cholesterol, cancer, osteoporosis, and symptoms of menopause.” And this good news has begun to reach health and nutrition professionals. With better products on the market, “soyfoods marketers may soon be dealing with a new generation of mainstream consumers who—far from spurning soy-based products—actively seek them out.

“Much of the current soy research is focused on isoflavones, a unique class of phytoestrogens or plant hormones found primarily in soy protein.” The main soy isoflavone is genistein. Now soyfoods manufacturers are starting to take isoflavone content into consideration when they formulate, label, and promote their products. The isoflavone content of unprocessed soybeans can vary considerably among varieties, years, and place of harvest. Heat treatment does not appear to significantly reduce isoflavone content, but an alcohol wash (used with most soy protein concentrates and isolated soy proteins) removes most isoflavones in the product. The well-known Supro brand of isolated soy proteins are not subject to an alcohol wash,



which helps preserve their isoflavone content.

Rick McKelvey, president of the Soyfoods Association of America, has attended the American Dietetic Association show for the past two years. Last year, most of the questions he heard were: "What is this soy stuff that I'm hearing about?" This year's questions concerned the level of isoflavones in specific products. "This shows how far we've come in the last year," he observes.

ADM, which could easily extract isoflavones from soybeans and sell them has decided not to do so. Jerry Weigel, PhD, who is ADM's vice president of corporate nutrition and regulatory affairs thinks it is probably not legal to sell isoflavones because they do not have GRAS (Generally Recognized as Safe) status or food additive status. Few soyfoods marketers are presently publicizing the isoflavone or genistein content of their products or making specific health or disease-prevention claims.

William Helferich, PhD, an associate professor at Michigan State University's Department of Food Science and Human Nutrition, has been studying dietary phytoestrogens in laboratory animals for 3 years. He has found that "genistein can stimulate estrogen-responsive breast cancer-cell growth in cultured cells and in animals implanted with these cells. He believes that women at risk for estrogen-dependent forms of breast cancer should not consume high levels of phytoestrogens." Most researchers are concerned about consumers taking isoflavone supplements or pills. Yet such products are now on the market and they acknowledge that some consumers will be attracted to them, instead of simply increasing the level of soyfoods in their diet, eating a healthful, balanced diet, and living and healthy lifestyle. Photos show: A jar of Morningstar Farms Roasted Soy Butter (soynut butter) which will be introduced this spring. Jan Remak, president of marketing for Vitasoy U.S.A.

One sidebar, titled "Probing the soy/health connection," discusses the research of Dr. James Anderson and Mark Messina, PhD. "Scientists theorize that phytoestrogens in soy might help compensate for the loss of hormonal estrogen women experience at menopause."

Another sidebar, "Boom times for the bean," notes that starting soon after the research study by Dr. James Anderson was published in August 1995, many soyfoods companies experienced a substantial increase in sales. Peter Golbitz notes that "After years of steady 10% to 15% annual growth, soyfood sales have soared by about 30% in the past year... Many marketers of meat and dairy analogs are reporting sales increases of more than 100%." A 1995 study by the Soyfoods Association of America found that 75% of Americans have heard of tofu, 55% of soymilk, and 50% of soy burgers. Golbitz adds that in Australia, where soymilk based on soy protein isolates is widely available, per capita soymilk consumption is at least three times what it is in the USA. Vitasoy has adopted a niche-market approach to selling its soymilk; it adjusts the amount beany taste according to

the taste preferences of each market. Address: Senior Editor.

546. *United Press International Financial Wire*. 1996.

Product recall pounds Vitasoy profits. July 23.

• **Summary:** Profits of Vitasoy International dropped 75% last year, largely because of a massive product recall in January which the company said cost it US\$10 million (80 million Hong Kong dollars). The recall affected about 30 million cartons of soya milk, lemon tea, and fruit juices sold mostly in Hong Kong, Macau, and southern China, but also in 23 other countries in Europe, the Americas, Africa, and Asia. Despite the setback, Vitasoy promised to pay investors a dividend of 1.2 cents (9.6 Hong Kong cents) per share, the same as the dividend last year. Vitasoy's performance was not all bad: turnover actually increased by 4% to \$169 million.

547. Vitasoy International Holdings Ltd. 1996. Annual report 1995/96. New Territories, Hong Kong. 104 p. July. 30 cm.

[Eng; Chi]

• **Summary:** For the fiscal year ended 31 March 1996, group turnover (sales) was HK\$1,301 million, up 4% over the previous year. Of these sales, 70% came from Hong Kong, 19.6% from North America, and 10.5% from the rest of the world. Operating profit was down dramatically due to a big recall crisis which cost HK\$79.9 million. Earnings per share were 6.0 cents, down 75%. Dividends for the year were 9.6 cents, the same as the previous year.

Chairman's statement: A crisis contained: Because of the "sour-taste" crisis, the Group decided to suspend temporarily operations at its plants in Hong Kong and China and to recall all Tetra Pak products from the markets in Hong Kong and Macau. These actions were in line with our policy of always putting our consumers' interests first" (p. 6).

"In North America, the Group continued the trend set in the first half and turnover grew by 10% for the year. The overall consumption of tofu has significantly increased due to newly published medical evidence—and public awareness—of the health benefits of soya protein and its effect on cholesterol reduction" (p. 7).

In the section on "Markets" (p. 8) is more detail on the North American market, where "the Group achieved sales of HK\$25 million, representing an increase of 10% over the previous year. Despite unexpected sales shortfalls in beverage, the net operating profit of the Group in North America jumped 14%.

"Tofu products were the largest contributor, accounting for 40% of turnover. Tofu also realized the healthiest growth of over 17%. This was followed by beverages which made up about 39% of the region's total sales. Owing to order backlogs, sales were hardest hit in the Canadian traditional markets, resulting in reduced sales of almost 25%. The Hong Kong recall had little impact on the North American Vitasoy soymilk sales in terms of consumer confidence.

“Secondary line products made up 11% of the region’s turnover, representing a 16% increase. The dressings line comprised about 5% of total revenues, representing a 12% growth, while two new product lines under the Newmenu brand, Tofu Mate seasoning and Meat Analog, contributed an additional few percent to sales.” Address: No. 1, Kin Wong Street, Tuen Mun, New Territories, Hong Kong. Phone: 466 0333.

548. *Ontario Soybean Growers’ Marketing Board Newsletter*. 1996. Canadian soybean exports and imports. Dec. p. 2.

• **Summary:** Gives comparative soybean statistics in metric tons (tonnes) for crop year 1994/95 and 1995/96.

Total soy [soybean] imports: Increased 12% from 62,539 to 69,900.

Exports to East Asia: Increased 11% from 110,251 to 122,176. The leading importers, in descending order of thousand tonnes imported in 1995/96, are: Japan (36.5), Hong Kong (31.2), Malaysia (21.3), Singapore (19.7), Indonesia (3.6), South Korea (2.5).

Exports to Europe: Increased 27% from 262,163 to 333,412. The leading importers, in descending order of thousand tonnes imported in 1995/96, are: Spain (100.7), Netherlands (88.2), Portugal (48.2), Belgium (44.0), Norway (28.3).

Exports to USA: Decreased 16% from 150,757 to 136,903.

Total soybean exports: Increased 11% from 528,102 to 586,621 tonnes.

Source: Statistics Canada. Address: Box 1199, Chatham, ONT, Canada N7M 5L8.

549. Kushi, Michio; Kushi, Aveline. 1997. Re: Letter of congratulations to the Lima Team. Lima celebrates its 40th anniversary! Letter to the Lima Team in Maldegem, Belgium, Aug. 30. 5 p. Typed, with signature on letterhead.

• **Summary:** “We extend happy congratulations from our hearts to the Lima team on its 40th Anniversary.

“The Lima team has truly been a European pioneer in organic agriculture and distribution of organic food. Not only many of Europe’s people, but also people who are in organic food production, distribution and consumption all around the world, are extending their gratitude to the Lima team which has shown such dedication to the health and well-being of humanity.

“As we well remember, Lima began in 1957. George Ohsawa and Lima Ohsawa visited France and Belgium, and stayed with the Gevaert family. As are we, they all were advocating the cause of world peace, especially the pursuit of the realization of a world federal government. The father of Pierre Gevaert was one of the prominent European leaders in this peace movement, as well as a well known artist / painter. The Gevaert family, after suffering during World War II, settled, and began organic agriculture. Pierre Gevaert led his

brothers and sisters in the cause of natural health as the base for a peaceful society. George and Lima Ohsawa encouraged their cause and called for four young Japanese students who were experts in their respective fields of food production. With their participation and intensive labor contribution under the leadership of Pierre and other Gevaert family members, together with the spiritual and philosophical guidance from George and Lima Ohsawa, the company—using the name ‘Lima’ from the name of Mrs. Ohsawa—had begun!

“Though the four Japanese left after their initial contribution, the Lima company continued to encourage organic agriculture in Belgium, France and other areas. It produced bread, miso, and other macrobiotic products as well as importing—mainly from Japan through Mitoku Company, Ltd., and others—the best quality of soy sauce and other organic products which were processed through the most authentic methods.

“While many other companies arose in France, Spain, Italy, Portugal, Germany and other areas of Europe, under the influence of macrobiotic education and rising interest in organic natural food, as well as people’s concern for better health through better eating, Lima has steadfastly remained one of the companies which are most conscientious and thoughtful of the health and well-being of humanity.

“We fondly recall visiting the Lima facilities many times, giving advice on several occasions on the qualities of food. We also remember giving lectures, talks, and discussions at the company on several occasions when we visited Europe.

“In addition to the operation of food production and distribution, Pierre Gevaert and other members of the Gevaert family, as well as macrobiotic and natural foods-related friends, made great contributions towards educating people in society and promoting natural health by holding conferences, forums, seminars, lectures and meetings on many occasions and in many cities.

“We sincerely extend our heartfelt thanks to all these founders, contributors, workers and participants in the operation of Lima.

“After the company was bought and its ownership changed, the spirit of its founders continued to remain. Marc Callebert, who continuously stayed until recently, had also carried forward its original spirit. We all know that though the ownership has changed, the spirit of Lima has never wavered, and shall continuously develop towards further realization of the endless dream of humankind: health and peace of the world. We sincerely trust the current owners and management, together with all Lima workers, are sharing the same spirit: to keep the company a symbolic leader in Europe of authentic, organic, natural and macrobiotic Food producers and distributors.

“While, with many friends’ companies, the Lima team is spreading its contribution to maintain and develop human

health in Europe, America has also been changing widely towards organic, natural and macrobiotic food production, distribution and consumption. There are many huge-scale natural food supermarkets which have been set up in every major city in America. The nutritional and eating pattern has greatly turned into one incorporating more whole grains, organic vegetables, beans and fruits, in addition to authentic macrobiotic products such as miso, soy sauce, tempeh, tofu, sea salt, umeboshi, sea vegetables, sourdough bread and many others.

“Food revolution has definitely begun, and we all know that will change the eating pattern throughout the entire world within a few decades.

“For the past five years, we have been pouring our energies into changing Japan and other Far Eastern countries. Although they are several years behind America and Europe, they are quickly awakening, and a large trend of organic, natural, macrobiotic food has been spreading through the participation of hotels, restaurants, food producers, farmers and consumers. This trend will spread to other Asian countries, and eventually towards the Middle East and Africa, and will enable the world to become a more healthy and peaceful society in the near future.

“We further wish to comment that this movement towards healthy food in general is closely associated with and has been inspiring alternative approaches to health care. Many areas of alternative medicine are dealing with healthy dietary practice, largely including a macrobiotic way of eating. Nutritional science has also been changing towards the reduction of animal food and increase of grains, vegetables, beans and other foods which we have been promoting.

“All of you are part of this wonderful positive movement in the world, and so, together with many friends, we again extend our congratulations to you on your 40th anniversary, and we pray from our hearts for your continuous contribution and success in the development of human health and well-being through the best quality of food. To the many people who have put their efforts into developing Lima as a symbolic existence in the industry: Thank you very much!

“In peace and love, Michio Kushi, Aveline Kushi, with many American macrobiotic, natural food friends.”

Note: Lima NV is now located at Industrielaan 11A, B-9990, Maldegem, Belgium. Phone: +32 50 71 05 64. Address: 62 Buckminster Rd., Brookline, Massachusetts 02146. Phone: 617-232-6876.

550. Froding, Joy. 1997. Through the eye of the storm: Biotechnology controversy creates a new niche. *Bluebook Update (Bar Harbor, Maine)* 4(3):4-5. July/Sept.

• **Summary:** In the Netherlands, it is required by law that all consumer packaged products containing ingredients created by biotechnology must be so labeled. According to Victor Meidendorp de Bie, General Manager of Fa. L.I. Frank in

Twello, The Netherlands, many European food companies want to keep genetically modified (GM) ingredients out of their foods. Moreover, the Netherlands, Spain, Switzerland, Austria, Hungary, and France are committed to growing only non-GMO soybeans intended for European food uses. Yet as much as 2% of the soybeans harvested in the fall of 1996 and imported to Europe were GM. The GM soybeans have been a boon for those growing and selling organically grown or identity preserved soybeans.

551. Brown, Lester R.; Renner, Michael; Flavin, Christopher. 1997. *Vital signs 1997: The environmental trends that are shaping our future*. New York, NY: W.W. Norton & Co. 165 p. 24 cm. [1000+endnotes]

• **Summary:** Overview: A year of contrasts—Near record energy expansion, carbon emissions set record (Graphs show global warming: (1) Atmospheric concentration of carbon dioxide, 1764 to 1996; (2) Average temperature at the earth's surface, 1866-1996), storms rock insurance industry, bike output triple that of cars, food security deteriorating, the growing appetite for protein, economic pace picks up, population growth slowing, the world is disarming.

Population growth: The annual addition to world population fell from a peak of 87 million in 1990 to 80 million in 1996 (See p. 80-81). In percentage terms, the annual population growth rate peaked at 2.2% in 1963 and now stands at 1.4%. Population growth is slowing because (1) the worldwide fertility rate—the average number of children born to a woman in her lifetime—dropped from 4.2 in 1985 to 2.9 in 1996, and (2) the mortality rate is rising in some regions—as from AIDS deaths in Africa and shorter life expectancy in the former Soviet Union. World population in billions was 2.556 in 1950, 3.039 in 1960, 3.706 in 1970, 4.458 in 1980, 5.282 in 1990, and 7.772 (estimated) in 1996.

Food trends: World grain harvest sets record, soybean harvest recovers to near-record, meat production growth slows, global fish catch remains steady, grain stocks up slightly.

Nuclear power was the slowest growing power source last year; it grew only 1%. 1996 was the fourth warmest year since record keeping began. Summer temperatures in northern Siberia are the warmest in 1,000 years. World population rose by 80 million people in 1996. The world consumes five times as much paper as it did in 1950. The number of men and women in the armed forces worldwide has fallen 20% since 1988, to 23 million. Half of the world's languages are becoming extinct.

World soybean production has increased dramatically since 1950: In million metric tons it was 17 in 1950, 25 in 1960, 44 in 1970, 81 in 1980, 104 in 1990, and 133 (estimated) in 1996. Per capita soybean production also continues to increase rapidly: In kg/capita it was 6 in 1950, 8 in 1960, 12 in 1970, 18 in 1980, 20 in 1990, and 23 (estimated) in 1996. Address: Worldwatch Inst., 1776



Massachusetts Ave., N.W., Washington, DC 20077-6628.

552. Food and Agricultural Organization of the United Nations. 1997. Soybeans: Area harvested, yield, and production. *FAO Yearbook-Production (Rome, Italy)* 51:102-03.

• **Summary:** The 1997 Production Yearbook, under “Soybeans” (p. 102-03, in English, French, and Spanish) gives area harvested (1,000 ha), yield (kg/ha), and production (1,000 MT), each for the years 1989-91, 1995, 1996, 1997, for the following places: World. Africa: Benin, Burkina Faso, Burundi, Congo–Democratic Republic, Cote d’Ivoire, Egypt, Ethiopia PDR, Ethiopia, Gabon, Liberia, Morocco, Nigeria, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

North and Central America: Canada, El Salvador, Guatemala, Honduras, Nicaragua, USA.

South America: Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela.

Asia (fmr = former). Asia: Azerbaijan, Bhutan, Cambodia, China, India, Indonesia, Iran, Iraq, Japan, Kazakhstan, Korea–Democratic People’s Republic of (north), Korea–Republic of (south), Laos, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Syria, Thailand, Turkey, Viet Nam (Vietnam).

Europe (former). Europe. Albania, Austria, Bosnia Herzegovina, Bulgaria, Croatia, Czechoslovakia, Czech Republic, France, Germany, Greece, Hungary, Italy, Latvia, Moldova Republic, Romania, Russian Federation, Slovakia, Spain, Switzerland, Ukraine, Yugoslav SFR, Yugoslavia.

Oceania. Australia.

USSR.

553. Asgrow Seed Co. 1998. Asgrow Seed Company chronology. Kalamazoo, Michigan. 2 p. Unpublished typescript. 28 cm. Merged with another chronology of Nov. 1997.

• **Summary:** This chronology, compiled by Soyfoods Center, is based on several chronologies issued by Asgrow from 1994 on. Non-quoted portions are added by Soyfoods Center.

1856–Everett B. Clark, of Connecticut, raised a crop of Jersey Wakefield cabbage, which went to seed ahead of its time. In a flash of genius, Clark decided to sell the seed for \$1.50 a pound; he made \$350 and started a profitable new company in the process. His seed business was interrupted by the Civil War, but after mustering out, Clark continued to grow seed crops, with an early interest in sweet corn.

“1883–Everett B. Clark is one of the founding members of the American Seed Trade Association.

“1897–Business incorporated as Everett B. Clark Seed Co. Sons Herbert, Frederick and Arthur (a Yale graduate) serving as directors.

“1902–Production branch opened in Wisconsin for pea seed to supply the canning trade.

“1906–Production branch opened in Michigan for bean seed to supply the canning trade.

“1907–Arthur Clark becomes president following the death of Everett Clark in 1907.

“1912–Government water projects supply irrigation to fertile areas in the Rocky Mountain valleys. Production locations are opened in St. Anthony, Idaho, and Bozeman, Montana, areas free from the diseases in the East and Midwest.

“1915–Locations established in Filer, Idaho, and Greeley, Colorado.

“1916–Location established at Fairfield, Washington, in the great pea growing Palouse district.

“1925–Company’s first California warehouse opened in Salinas.

“1927–Everett B. Clark Seed Co. and two competitors, the John H. Allan Seed Co. (est. 1856) and N.B. Keeney & Son (est. 1860) formed a new corporation, the Associated Seed Growers, Incorporated. Headquarters were located in New Haven, Connecticut. Cable code name for the company, Asgrow, was formed, and soon thereafter adapted as a brand name and registered.

“1939–Jerome B. Rice Seed Co., (est. 1832) was acquired and operated as a packet seed business.

“1942–Arthur Clark becomes Chairman of the Board of Associated Seed Growers, and his son A. Bryan Clark takes over as president.

“1958–Associated Seed Growers, Inc., formally changed names and became the Asgrow Seed Company.

“1967–Negotiations are begun with The Upjohn Company, a major U.S. pharmaceutical manufacturer looking to strengthen its agricultural division.

“1968 April 30–Asgrow Seed Company is acquired by (in a stock swap), and becomes a subsidiary of The Upjohn Company. Headquarters are moved from Orange, Connecticut, to Kalamazoo, Michigan, home base for the Upjohn Company.”

“1974–Asgrow acquires Farmers Hybrid Company, an Iowa seed corn business, from Monsanto.

“1975 or 1974–Asgrow first introduces soybean seeds.

“1977–A2575, Asgrow’s first private soybean variety with iron-chlorosis tolerance, is introduced.

“1979–A3127, Asgrow’s first high-yielding, indeterminate soybean variety is introduced.

“1983–Asgrow purchases O’s Gold Seed Company, a noted hybrid field corn producer in the Midwest U.S. Asgrow corn research stations are re-established in Iowa, Indiana, and Wisconsin.

“1983-85–Asgrow introduces A5474 and A3307, the first private soybean varieties with resistance to Races 3 and 4 of soybean cyst nematode.

“1986–Asgrow enters a joint venture with Complejo Agrícola Semillas, S.A., a Spanish seed company. Venture operates as Complejo Asgrow Semillas S.A.

“1987–The company purchases Bruinsma Seeds b.v., Honselersdijk, Holland. Bruinsma specializes in seeds for greenhouse-grown peppers, tomatoes, butterhead lettuce and cucumbers.

“1988–Asgrow introduces A2234, the first private soybean variety with Rpk1 gene for Phytophthora root rot protection.

“1989–Asgrow becomes the first seed company to begin crossing the Roundup Ready gene into soybean germ plasm.

“1989–Asgrow acquires Genecorp, Inc., a Salinas, California company specializing in the lettuce seed business.

“1992–Asgrow’s first Concept Farm opens at Tuscola, Illinois.

“1994–Agreement is reached for Asgrow Seed Company to be purchased from Upjohn by Empresas La Moderna (ELM), a multi-national agricultural company based out of Monterey, Mexico.

“1995–Asgrow vegetable division merged with Peto Seed [Petoseed] and Ball Seed to form Seminis Vegetable Seeds (still owned by ELM).

“1996–Asgrow introduces six Roundup Ready soybean varieties and has 95 percent of the available units for American farmers.

1997 Feb. 3–Monsanto completes its acquisition of Asgrow Seed company from Empresas La Moderna, S.A. (ELM) of Mexico. Monsanto purchased only the agronomic portion of Asgrow, which develops soybeans as well as corn, sunflower, sorghum, and some alfalfa. “Asgrow currently introduces between 20 and 40 new vegetable varieties, and 10 and 20 new agronomic products per year.” Address: 2605 E. Kilgore Rd., Kalamazoo, Michigan 49002-1744. Phone: 616-384-5622.

554. Kluis, Alan. 1998. Currency woes threaten ag exports: Devaluations have hurt some of our best customers. *Soybean Digest*. Jan. p. 108-09.

• **Summary:** The USA now grows about 50% of the world’s soybeans. One graph shows the world’s top soybean producing nations and states (in hundred million bushels): USA (280), Brazil (110), Argentina (55), Iowa (50), Illinois (40), Minnesota (28). A second graph shows U.S. soybean exports by country (in million bushels): Japan (145), Netherlands (125), Mexico (122), Taiwan (75), China (68), Brazil (62), Korea (55), Spain (55), and Germany (43). Address: President, NorthStar Commodity Investment Co.

555. Schweitzer, Peter. 1998. Plenty International (Interview). *SoyaScan Notes*. March 25. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Plenty International is now the official name of their organization. This is the name under which they are registered with the United Nations, Canadian International Development Agency, and other government organizations. But “it’s a mouthful,” so they usually call it just “Plenty”

for short. In the past, however, Plenty has sometimes used two names at the same time. In about 1982-83, after the original Plenty split up, the U.S. half usually called itself Plenty USA vis a vis Plenty Canada. In early 1998 the Board officially changed the name to Plenty International, and the organization is incorporated under that name with the state of Tennessee. They had to re-do the by-laws.

There is now also a Plenty Spain in Barcelona started by a guy from Argentina who worked with Plenty in the USA and Lesotho for many years. They do many projects but none of them are soy-related.

Bisi Iderabdullah, the founder and director of the Imani House project and soy program in Liberia, is currently in Brooklyn, New York, trying to raise grant money for her program in Liberia. Plenty recently sent their clinical director to Senegal for medical training. The work is ongoing, run by their local staff people, in Liberia, and Bisi plans to return soon.

Plenty Canada has gone through major changes. They moved their headquarters to an Indian reservation for a while and their whole board of directors was Native Canadian for a while. Peter is trying to find out what is going on; he has heard that some of the original people are now coming back into the organization.

Of Plenty’s various soy projects around the world, the one in Guatemala is currently by far the most successful and active. The soy dairy is now on a solid financial footing, managed by Agostine and Elena Xoquic (pronounced cho-KEEK), who have been actively involved since about 1995. Amada del Valle, who worked with Plenty Canada and was close friends with Laurie, is no longer involved. Laurie has worked with both Plenty Canada and Plenty USA. The soy dairy is under the auspices of the *Comité de San Bartolo*, which is the village committee. They have struggled and hung in there during the difficult times, and now things are going much better. Their biggest market is the tourist restaurants in Panajachel and Antigua (Guatemala), but they do have 3-4 outlets in Guatemala City. They now have an outlet right on the village square in Solola, where they sell soy ice cream, tofu, and a soymilk popsicle that is very popular. Suzi and Peter went down to offer assistance in recent years. Plenty bought them a truck so they could start doing deliveries instead of riding buses with their buckets of tofu, and also helped them with some Spanish-language publications. Suzi did many soy demos in restaurants in Panajachel. Chuck Haren has been going there several times a year. Plenty has gotten them grants of roughly \$10,000 a year so they could upgrade broken equipment and refrigeration. They have developed some new products, and they are now making tempeh. The ongoing outside help has been essential to their survival, but they have learned how to operate—though they are not that ambitious. Chuck believes they could be much more successful. He feels they have an unlimited market. They earn enough money to pay the staff

and put some back into the village. They operate a little nutritional outreach program.

Peter notes that the work with soy has always been very prominent through the history of Plenty's activities worldwide. "It's always been a part of the programs that people seem to like. I see a really healthy future for it."

Plenty had one 3-year period when Chuck was really well funded, with about \$50,000 from three public welfare foundations. New programs started in many places, including Liberia. Address: Executive Director, Plenty International, P.O. Box 394, Summertown, Tennessee 38483. Phone: 931-964-4864.

556. Bertran, Magda. 1998. Pioneros de la soja en España: Locos por la macrobiótica [Pioneers of soya in Spain: Crazy about macrobiotics]. *Vital*. March. p. 66-69. [Spa]

• **Summary:** This is the story of a community of about 20 adults and children who live in southeastern Spain, just north of Barcelona, in Moianés, near the towns of Castellerçol and Castellcir. Tofu, tempeh, veggie burgers, and other soyfoods (*derivados de la soja*) form an important part of their diet. Members of the community have created new food companies such as Vegetalia and Natursoy, and become pioneer soyfood processors in Spain. More recently, Luz de Vida has started to import high-quality natural products into Spain.

"The history of the production of soyfoods has diverse origins, according to the version of the protagonists. It can be said that it started about 20 years ago in the little village of Tavertet, due to the efforts of Josep M. Villagrasa, a person who was crazy about macrobiotics (*un "loco por la macrobiótica"*). We must also remember the pioneering work of Javier Arozena [sic. Arocena] and his company Zuaizto (*Arbolito*) in Vasco region.

In addition, two couples who were also "crazy," Joan Mateu and Lluïsa Playà, and Josep Maria Clapés and Sandra Cano, came together to share a house and experiences in La Floresta (Barcelona). Lluïsa (along with others) was running the restaurant Macrobiotic Zen, the first macrobiotic restaurant in the city of Barcelona, while in the kitchen Joan was preparing tofu for the restaurant, helped by Sandra and Josep Maria. The latter also worked as a homeopathic doctor. Lluïsa maintains that the first tofu manufactured in Spain was made in 1978, in the kitchen of that house named La Floresta.

Little by little the production of tofu grew, and Joan started to make seitan for the first alternative food shops that were created in Barcelona, and then throughout Spain. Address: Spain.

557. Dunn-Meyell, Catalina. 1998. Re: Requesting information about the Soyfoods Center's activities. Letter to William Shurtleff at Soyfoods Center, April 21. 2 p. Handwritten, with signature. [Eng]

• **Summary:** "Dear Sir or Madam, I recently received 'The Book of Tofu' through family in England. although I knew of its existence from French friends who has worked in an organic bakery in California.

"I am impressed by the quality and depth of what I have read so far and offer you my sincere congratulations.

"In Spain there is next to nothing published on the subject and your book has given me a few ideas as I am at a moment of change in my professional life.

"Your book mentions that you have founded 'The Soyfood Centre' which helps and advises people who wish to produce tofu and other soy products. My country has a population of nearly 40,000,000 and there exist only three small producers of soy products such as tofu or tempeh. Therefore I would be very grateful if you could send me information about The Soyfood Center's activities as well as about equipment and so on for the production of tofu and other soy products. I should like to make good quality tofu and at the same time develop an information centre along the lines of The Soyfood Centre to share knowledge and encourage the use of products like tofu.

"Thanks to the fact that I have lived for some time in a macrobiotic community in the south of France, I do have some knowledge (although limited) about tofu production. I haven't had the good fortune to meet George Ohsawa but his work and his life continue to be a source of inspiration to me.

"With thanks in advance, I look forward to hearing from you. Yours truly, Catalina Dunn-Mayell."

Note: W. Shurtleff replied with a letter on May 1. Address: Partida Rosers 26, E-03750 Pedreguer (Alicante) Spain.

558. Ralston Purina Company. 1998. Agribrands International, Inc. St. Louis, Missouri. 95 p. April 1. 28 cm.

• **Summary:** Ralston Purina Co. has decided to create a new company, Agribrands, by spinning off its international animal feeds and agricultural products operations. The company, whose stock symbol will be AGX, will be traded on the New York Stock Exchange. Shareholders of record of Ralston stock as of 1 April 1998 will receive one share of Agribrands Stock for every ten shares of Ralston stock they own. The spinoff will occur on April 1.

The production and sale of animal feed was the primary business of Ralston when it was established in 1894. Animal feeds and agricultural products continued to be the dominant business until the 1950s. "The development at that time of a new extruded dry dog food by Ralston revolutionized the pet food industry and transformed Ralston into primarily a consumer products company. Since then, the pet food business has continued to grow in importance to Ralston while the relative contribution of the animal feeds and agricultural products business declined. In the 1980's, Ralston's focus became increasingly directed away from the animal feeds and agricultural products business as Ralston



acquired Continental Baking Company, the nation's largest wholesale baker, in 1984, and the worldwide Eveready battery business in 1986. The intention of Ralston's management to focus on consumer packaged goods and its stable of leading brands culminated in the sale of its U.S. animal feeds and agricultural products business to a subsidiary of British Petroleum in 1986. British Petroleum did not acquire Ralston's international animal feeds and agricultural products business, which became a non-core business, having limited synergies with Ralston's other international businesses."

"In 1994, Ralston spun-off Ralcorp Holdings, Inc., a subsidiary to which Ralston had contributed its breakfast cereal, baby food, cracker and cookie, coupon redemption and all-seasons resort businesses. In 1995, Ralston sold all of the capital stock of Continental Baking Company. In 1996, Ralston sold its assets associated with its cereal business in the Asia Pacific region (which it had retained in the Ralcorp spin-off), and terminated its European cereal operations. In 1977, Ralston sold its international soy protein technologies business. In line with this focus on its core businesses, Ralston attempted to sell its international animal feeds and agricultural products business to PM Holdings Corporation in 1994, but negotiations broke off as the parties were unable to agree on key terms of the transaction."

Agribands' principal properties are its animal feed manufacturing facilities and property, which are located in the following countries: Brazil (7 plants), Canada (7), Colombia (6), France (7), Guatemala (1), Hungary (2), Italy (5), Korea (3), Mexico (8), People's Republic of China (4, incl. 3 joint ventures), Peru (3), Philippines (2), Portugal (2), Spain (7), Turkey (2), Venezuela (4, plus a hatchery) (p. 41-43; notes which are leased, joint venture, under construction, or to be divested). Address: Checkerboard Square, St. Louis, Missouri 63164.

559. Castillo, Joaquín. 1998. Re: More information about early soyfoods companies in and around Barcelona, Spain. Letter to William Shurtleff at Soyfoods Center, May 22. 3 p. Typed, without signature. [Spa]

• **Summary:** The companies are: (1) Vegetalia S.L., c/ Placa de l'era S/n. 08183 Castellcir (Barcelona). Phone: 93 866-6161. Fax: 93 866-8298. Sr. Salvador Sala. They make tofu, tempeh, seitan, tofu paté, tofu hamburgers. 20 workers. Products sold mostly in health food shops.

(2) Natursoy, c/ Josep Galles, No. 36-52, 08183 Castell Tercol (Barcelona). Phone: 93 866-6042. Fax: 93 866-6250. Sra. Carmen Ascension. Vegetalia and Natursoy used to be the same company, but they separated a few years ago. They make different types of tofu, seitan, hamburgers, etc. They also import organic products; cereals, biscuits, fruit juices, etc.

(3) La Sojeria—also situated in Barcelona. Address: Partida Rosers 26, E-03750 Pedreguer (Alicante) Spain.

560. Smith, Rod. 1998. Bunge International to accelerate soybean strategy. *Feedstuffs*. June 1. p. 5, 8.

• **Summary:** Bunge International (BI) Ltd., founded in 1818 and headquartered in Sao Paulo, Brazil, is the third largest soybean processor in the world and the largest exporter of soybean meal and oil. Bunge Corp. based in St. Louis, Missouri, is the third largest soybean processor in the USA. The International company is the controlling holder of Ceval Alimentos, based in Gaspar, Brazil, the largest soybean processor in Latin America, and a subsidiary of Guipeba. Bunge is also a major processor in Argentina, and a partner in Moyresa, based in Barcelona, Spain, the largest oilseed processor in Spain.

The three largest soybean processors worldwide are Archer Daniels Midland (24%), Cargill, Inc. (21%), and Bunge International (15%).

In 1994 BI began a restructuring strategy to sell non-agriculture and non-food businesses in order to concentrate on its core segment in grain marketing, oilseed processing, and fertilizer production—according to Oscar Bernardes, the CEO of Bunge International. In 1997 the company had total sales of \$13 billion, of which \$9 billion (about two-thirds) came from agriculture businesses. Over the next 5 years, BI plans to invest more than \$1 billion in agribusinesses, mainly in Argentina and Brazil, two countries with acreage available for soybean planting. It will also invest in fertilizer production. Address: Staff Editor.

561. Brown, Allan; Brown, Susan. 1998. Making tempeh and other natural foods at McDonalds Corners, Ontario, Canada (Interview). *SoyaScan Notes*. June 22-24. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** In June 1985, after about 5 years in Toronto, they bought ten acres of land near McDonalds Corners (not far from The Farm in Lanark, Ontario), and moved Noble Bean onto that land. There they started to make tempeh.

Throughout the 1980s, Allan and Susan trained Plenty volunteers at Noble Bean to make tempeh; these volunteers then took that knowledge abroad—mostly to developing countries. Maya Clarke took it to St. Lucia, Peter Dudding to Sri Lanka, a Canadian lady to Lesotho, and Mario and Laura Rimoldi [not Rimaldi] to Barcelona, Spain. Allan and Susan had met the Rimoldis on The Farm in Lanark in 1983; they later started making tofu as well in Barcelona.

Also during the 1980s, the Browns started some new businesses to bring in additional income. First came a natural cookie company named Casey's Cookies—after their firstborn son, Casey. Soon they were selling 40 to 60 dozen organic Casey's Maple Pecan and Honey Walnut cookies into the Ottawa market. In 1990 they sold the cookie company and took a trip/vacation to Mexico in their camper. On the way, they stopped by The Farm in Summertown, Tennessee, where they stayed with their old friends Cynthia and Albert

Bates—who had taught them how to make tempeh and tempeh starter in 1974. Now the Bates were “deep into the Mushroom People trip. They were pumpin’ the spores into logs out in front of their home with major rock and roll going on in the woods.” Again the Bates taught the Browns a new occupation—how to grow shiitake mushrooms. Back home in Ontario, the Browns grew shiitake on about 25 logs outside their home—but mainly for their own consumption, because it was a very labor-intensive process. Soon, however, they were buying and re-selling shiitake—which they do to this day. Later, they started an incense import business named Soul Scents, which soon became the most profitable of all.

The Browns now make 600 lb/week of tempeh, working 3 days each week. It is still a very hands-on process. Allan and Susan are both active in the tempeh-making process (they also share child care), but now they have hired a woman who does much of the physical tempeh work. Most of Larry’s time is focused on Soul Scents. Allan has always believed that vacuum packaging lowers the quality of tempeh. Their business has not grown in the last 5 years. He thinks it is because of the influx of meat analogs. Seth Tibbott did a survey before the Bali conference which showed that tempeh production in the USA peaked in 1989 or 1990. But several years ago Allan and Susan started an import business which has sales of \$250,000 last year, so they are now in good shape financially. Two other tempeh companies in Canada are Soy City Foods in Toronto (they make mostly tofu; their tempeh is sold mostly in large cakes to foodservice) and Sooke Soyfoods in Vancouver, BC (owner Wayne Fatt gets plenty of competition from Seth Tibbott’s Turtle Island Foods in nearby Oregon). Address: Founders, Noble Bean, R.R. #1, McDonalds Corners, ON K0G 1M0 Canada. Phone: 613-278-2305.

562. Castillo, Joaquín; Dunn-Meyell, Catalina Mary. 1998. Re: Three pioneering soyfoods companies in and around Barcelona, Spain. Letter to William Shurtleff at Soyfoods Center, Aug. 17. 3 p. Handwritten, with signature. [Eng; Spa] • **Summary:** This letter was written first in Spanish, then sent back with an English translation done by Joaquim’s wife, Catalina, who is English. For the last ten years Joaquim has been involved in the sale of a variety of ecological products, such as recycled stationary. He is currently contemplating a change in career and is looking at production of organic foods, which appears to be a very promising field in Spain. The region of Catalunya, of which Barcelona is the capital, has always been the pioneer in Spain with respect to organic products.

The three companies are: (1) Vegetalia S.L., c/ Placa de l’era S/n. 08183 Castellcir (Barcelona). Phone: 93 866-6161. Fax: 93 866-8298. Sr. Salvador Sala. They make tofu, tempeh, seitan, tofu paté, tofu hamburgers. 20 workers. Products sold mostly in health food shops.

(2) Natursoy, c/ Josep Galles, No. 36-52, 08183 Castell

Tercol (Barcelona). Phone: 93 866-6042. Fax: 93 866-6250. Sra. Carmen Ascension. Vegetalia and Natursoy used to be the same company, but they separated a few years ago. They make different types of tofu, seitan, hamburgers, etc. They also import organic products; cereals, biscuits, fruit juices, etc.

(3) La Sojeria—also situated in Barcelona. “I have been unable to obtain information about them, but their distributors are: Nutresco S.L., c/ Mossen Lluís David, No. 69. 08180 Moia (Barcelona). Phone: 93 830-0166. Fax: 93 820-8404. Sr. Dionis Guiteres.

Macrobiotic community: Ecole Cuisine et Santé, Fondation Macrobiotique, Pont de Valentine, F. 31.800 St. Gaudens, France. Phone: 61 89-7514. Fax: 61 89-3607. Run by M. René Levy, disciple of G. Ohsawa. The organization continues Ohsawa’s work and endeavours to make known the benefits of macrobiotics. Tofu is only produced for use within the community, which has been in existence for nearly 20 years. It is situated in a beautiful spot in the southeast of France. Address: Partida Rosers 26, E-03750 Pedreguer (Alicante) Spain.

563. 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: Alkalies.

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 Tanganyika). 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.

564. Golbitz, Peter. 1998. New directions ahead for the *Soya & Oilseed Bluebook* (Interview). *SoyaScan Notes*. Sept. 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This year the Bluebook has a new title, *Soya & Oilseed Bluebook*, and is bigger and better than ever. A special section contains translations of all key terms related to oilseeds from English into German, French, Spanish, and Portuguese. One reason for the translations is that the Bluebook is headed for a complete electronic edition on CD-ROM with a multi-language interface. After you pop the CD into its drive, the first page will ask you what language you want to search in, then where in the directory you want to go. If you choose Spanish, the instructions, interface, and all titles will be in Spanish. So if you are interested in information on soy flour, you click on *farina de soya*. Of course the names, address, phone numbers, etc. that are called up would be in English, just as they are now. Eventually Soyatech hopes to add translations and interfaces in Mandarin.

Peter is very cautious about introducing an electronic version because there are so many uncertainties and unanswered questions. Should they deliver it on the Internet and on CD? How should they price the CD? Would the CD kill mailing list sales? When should they introduce it and how should they position it? It means another product to market and they are not sure how much people need it—how many they will sell. The big corporate libraries might buy one for their corporate office, then perhaps buy fewer or no printed books.

The next revolution in book publishing appears to be electronic tablets, which are typically the size of piece of paper (8½ by 11 inches) or a 6 by 9 inch book. You insert a data card and voilà—you have a book. Address: Soyatech, P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

565. *Soya & Oilseed Bluebook*. 1998-- . Serial/periodical. Bar Harbor, Maine: Soyatech, Inc. Peter Golbitz, publisher and editor. Frequency: Annual.

• **Summary:** Preceded by *Soya Bluebook Plus*. A directory and information book for the soybean processing and production industries. The first issue (shipped Sept. 1998) is subtitled "The annual directory of the world oilseed industry." On the cover, below a map of the world is printed the date "1999" in large letters, followed by "A Soyatech Publication." Crops featured on the front cover and inside are "soya, corn, cottonseed, canola, rapeseed, sunflowerseed, palm kernel, palm, coconut, and peanut."

Contents (the four main sections are marked with a fold-out tab): Translations of oilseed terminology (English, German, French, Spanish, and Portuguese). Organizations and government agencies: Complete listings by country. Oilseeds and oilseed products: White pages (Index, individual crops), catalog pages, yellow pages (complete



company listing by country). Equipment supplies and services. Oilseed statistics. Oilseed reference: Oilseed glossary, standards and specifications, oilseed technical charts and tables. Indexes: Comprehensive index, internet address index, brand name index, advertiser index.

Soy-related terms appearing in the translation section (p. 9-15) are: (1) Oilseeds and products: dairy analogs, lecithin-edible, lecithin industrial, meat analogs, miso, organic soy products, soy distillate, soy fiber, soy flakes-defatted-edible, soy flakes-full fat, soy flour-defatted, soy flour-enzyme active, soy flour-full fat, soy flour-low fat, soy flour-roasted, soy flour-textured, soy grits, soy isoflavones, soy livestock feed, soy oil margarine, soy oil shortening, soy oil-crude, soy oil-edible, soy oil-hydrogenated, soy oil-industrial, soy oil-refined, soy oil-based fuel, soy protein concentrate, soy protein isolate, soy protein-hydrolyzed, soy protein-industrial, soy sauce, soy sterols & tocopherols, soy-based foods-other, soybean fatty acids, soybean hulls, soybean meal, soybean meal-full fat, soybean seed breeder, soybean seed (for planting), soybean soapstock, soybeans-food grade, soybeans genetically modified, soybeans-green vegetable, soybeans-identity preserved, soybeans-non-gmo, soybeans-organic, soybeans, whole dry, soymilk beverages, soymilk powder, soynuts, tempeh, tempeh starter cultures, textured vegetable protein, tofu & tofu products, tofu powder. (2) Equipment & services: Coagulants for tofu, soymilk & tofu processing equipment, sprouting equipment. Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207-288-4969.

566. Soyatech, Inc. 1998. *Soya & Oilseed Bluebook 1999*: The annual directory of the world oilseed industry. Bar Harbor, Maine: Soyatech. 424 p. Sept. Comprehensive index. Internet address index. Brand name index. Advertiser index. 28 cm.

• **Summary:** The Bluebook has a new title (see separate "serials" record). On the cover is a rectangular [Mercator projection] map of the world made of the different oilseeds now included in the Bluebook: Soya, corn, cottonseed, canola, rapeseed, sunflowerseed, palm kernel, palm, coconut, and peanut. The inside front cover and first page contain full page color ads from Lucas Meyer, "The Lecithin People" and "Edelsoja: The Protein People." On the back cover is a color ad from ADM promoting their vitamin E.

The Foreword begins: "The next millennium is just around the corner. A new age, perhaps, in which increased interdependence and trade are coupled with the free flow of information. A new era where the efficient utilization of the Earth's resources is a key factor in all activities of business and daily life.

"One of Soyatech, Inc.'s founding principles is the dictum that, 'the world would be a better place if it used its agricultural resources more efficiently—for food, for animals and as a renewable industrial product source.' We continue to

see this as a primary goal of our publication and information services."

The Bluebook's new title "more aptly describes the directory's continuing evolution to encompass the expanding field of plant-based proteins and oils."

Another new section, near the front of the book, titled "Translations of oilseed terminology" (p. 9-15), includes over 300 terms related to oilseeds translated from English into German, French, Spanish, and Portuguese.

Note: This is the earliest English-language document seen (Nov. 2014) that contains the term "plant-based proteins" (or "plant-based protein"). Address: 318 Main St., P.O. Box 84, Bar Harbor, Maine 04609. Phone: 207.288.4969.

567. Martinez, R.M.; Gimenez, I; Lou, M.; Mayoral, J.A.; Alda, J.O. 1998. Miscellaneous-Membrane NA<sup>+</sup>-K<sup>+</sup>-2Cl-cotransport and anion exchanger inhibition by soy isoflavonoids (Abstract). *American J. of Clinical Nutrition* 68(6S):1542S. Dec. Supplement.

Address: Dep. of Pharmacology and Physiology, Faculty of Medicine and Dep. of Organic Chemistry, Faculty of Sciences, Zarazoga, Spain.

568. Martínez, Rosa M.; Giménez, I.; Lou, J.M.; Mayoral, J.A.; Alda, J.O. 1998. Soy isoflavonoids exhibit in vitro biological activities of loop diuretics. *American J. of Clinical Nutrition* 68(6S):1354S-57S. Dec. Supplement. [23 ref] Address: 1. Universidad de Zaragoza, Departamento de Farmacología y Fisiología, c/Domingo Moral s/n, 5009 Zaragoza, Spain.

569. Ruiz, Hipólito. 1998. The journals of Hipólito Ruiz: Spanish botanist in Peru and Chile 1777-1788. Translated by Richard Evans Schultes and María José Nemry von Thenen de Jaramillo-Arango. Transcribed from the original manuscripts by Jaime Jaramillo-Arango. Portland, Oregon: Timber Press. 357 p. See p. 192. Illust. Index. 27 cm. [Eng]

• **Summary:** In Chapter 31, titled "Description of the village of Sayán," states that the valley of Huara stretches from Huara to Sayán. (Note: A modern map of Peru shows that Huara is a town on the seacoast about 80 miles northeast of Lima (the capital) and Callao, and just north of the seaport city of Huacho; Huara is about 30 miles inland, directly east.) In about Sept. 1781, the Spanish botanists and artists traveled a little southward along the coast to the province of Chancay. Note: Today the town of Chancay is on the coast about midway between Huara and Callao/Lima. In this province they collected and dried many plant specimens. For each, the author gives the scientific name (genus and species), local Spanish name; the translator adds the English name (if known). One of the plants collected (p. 192) is "*Dolichos soja?*, frijolillos (little beans); the seeds are eaten cooked and are very tasty. It is a cultivated plant. I have

never seen it growing wild.” Note 1. The question mark after “soja” probably means that Ruiz was unsure of the plant’s identity. Note that two other plants mentioned on p. 192 also have a question mark after their scientific names. This question mark also appears after *Dolichos soja* in the index of this book (see p. 347). Why did the translator not give the English name?

Note 2. If Ruiz correctly identified *Dolichos soja*, an early scientific name for the soybean, this would be by far the earliest document seen concerning soybeans in Peru or South America or all of Latin America. And this document would contain the earliest date seen for soybeans in Peru, or South America, or South America.

Talk with Juan del Campo, historian at the Peruvian Embassy in Washington, DC. 2000. March 16. In 1777 Peru was a colony of Spain ruled by a Viceroy who represented the king of Spain—so more precisely it was the viceroyalty of Peru—which was established by Spain in 1542. But the phrase “Kingdoms of Peru and Chile” was widely used by the Spanish at the time.

During the 1600s and 1700s, Peru and Mexico were the two main Spanish dominions in the New World. Up until the 18th century, the viceroyalty of Peru included Panama and all of Spanish South America except Venezuela. The region now corresponding approximately to Bolivia was named “Upper Peru.” In 1717 New Granada (now Colombia), and in 1776 Buenos Aires (La Plata; now Argentina) were made separate viceroyalties.

There was a very large seaport at Callao. Founded in 1537 and incorporated as a town in 1671, it is presently the chief port of Peru, on Callao Bay, 8 miles (13 km) west of Lima. The Spanish even built a large fort at Callao to fight against the English pirates Francis Drake (1543-1596) and John Hawkins (1532-1595). The Manila Galleons that went from the Philippines to Acapulco, Mexico, usually went next to Callao to trade. At the time, the Philippines (called Capitanía General) was ruled by Spain from Mexico. During its peak of trade with Asia, for more than a century from about 1650 to 1760, Callao was the biggest port of the Spanish dominions in the Americas—much bigger even than Acapulco in its volume of trade. So anything (such as soybeans plants or seeds) that went on a Manila Galleon to Acapulco might very well have also gone to Callao.

The first Asian immigrants to Peru came from China in the early 1850s to work in agriculture and on the railroads. They continued to arrive until the 1880s. The first wave of Japanese immigration to Peru started in the late 1890s. In the Quechua language, the language of the indigenous Peruvians, several similarities have been found between Quechua words and Japanese words—which is amazing, and of great interest to linguistic researchers. One theory says there was trade with East Asia during the Incan empire, which ruled Peru from ca. 1230-1533, when it was conquered by Spanish explorer Francisco and fellow Spanish soldier Diego de

Almagro.

Talk with Prof. Ted Hymowitz, Prof. of Plant Genetics, Univ. of Illinois. 2000. March 28. Richard Schultes started the field of ethnobotany; he is now approximately in his 80s. Ted thinks the plant that Ruiz was describing was probably the lima bean. Linnaeus first gave the name *Dolichos soja* to the soybean in 1753 (*Species plantarum*. Vol. II., p. 727). Ruiz had probably never seen a soybean but he may have had Linnaeus’ manuscript or book with him.

Contains numerous interesting and early color maps, including one of Lima, Peru, and the coast, including Callao (facing p. 176) based on a survey conducted in May 1771. Address: Spain.

570. *Canadian Soybean Bulletin (OSGMB, Chatham, Ontario, Canada)*. 1999. Canadian soybean exports. 13(1):4. June.

• **Summary:** A large table shows statistics on tonnes (metric tons) of soybeans exported to various countries, and regions, each year from 1994/95 to 1997/98. The countries are: In Asia—China, Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, and Thailand. In Western Europe—Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Portugal, and Spain. By continent—Africa, Central America, Eastern Europe, Middle East, Oceania, South America, and United States.

In 1997/98 the countries to which the largest amount of Canadian soybean exports went were (in tonnes): Norway 159,000, United States 134,706, Japan 62,931, Portugal 58,465, Spain 34,759, Hong Kong 23,210, Belgium 20,687, and Malaysia 20,539.

571. Greenfield, Beth. 1999. Yo! Soy! The road to enlightenment is easy to discover in India. Finding tofu is another matter. *Long Island Voice (New York)* 3(46):11. Nov. 18-24.

• **Summary:** The author, a vegetarian, hungered for tofu as she traveled in sun-drenched Goa on the southwestern coast of India. An Indian state since 1987, Goa used to be a Portuguese colony, and the capital of Portuguese India. Suddenly she discovered a new-looking restaurant named “Bean Me Up,” started by Lisa Ann Camps (age 37) of Islip, Long Island.

In 1984 Lisa had come to Goa from Florida to take care of an ex-boyfriend who had broken his arms and legs in an accident. She never left. And the reason was Goa—not the ex-boyfriend. During the late 1960s, Goa had been made popular as India’s southern beach resort by wandering Western hippies in search of enlightenment and sunny escapism. Always resourceful, Camps began by starting her own lingerie company named Ooh La La. But as a vegetarian, she missed tofu. So she learned how to make her own soymilk and tofu. Then last year (1998), at the urging of veggie tourists, she started her own tofu shop using soybeans

imported from the northern state of Himachal Pradesh. Since local restaurants were reluctant to carry her tofu and since she had restaurant experience from Florida, she decided to start her own place to serve the tofu she made. Camps, now an apostle of tofu in India, hopes to introduce this vegetarian source of protein to rich and poor alike who come to enjoy India's Riviera.

Photos show: (1) The sign announcing Bean Me Up; the words are written across a large circle with a figure seated in meditation at the center. (2) Lisa Camps, in Indian-style dress, seated at a table in her restaurant. Address: New York.

572. Okura Boeki-cho (Ministry of Finance, Division of Trade). 1999. Miso yûshutsu tsûkan jisseki—Heisei 10 nen [Japan miso exports worldwide in 1998]. Tokyo, Japan. 1 p. [1 ref. Jap]

• **Summary:** This 1-page table, written in Japanese, gives the exports of miso to various countries, in calendar year 1998, by region. We will list them here in descending order of volume by region—in kilograms. Asia: Taiwan 349,591. Hong Kong 332,325. Korea 232,115. Singapore 120,681. Thailand 100,459. Philippines 44,605. Malaysia 40,129. Indonesia 26,585. China 23,024.

Middle East: United Arab Emirates (*Arabu*) 9,895. Israel 4,887. Kuwait 1,256.

Europe (Western and Eastern): Netherlands 115,703. Germany 102,724. England 74,231. France 45,971. Sweden 40,170. Italy 20,283. Belgium 17,932. Austria 13,370. Spain 6,118. Denmark 4,090. Canary Islands (Spain) 2,000. Russia 1,715. Finland 1,310. Switzerland 450.

North America: United States: 2,297,893. Canada 242,240.

Latin America: Argentina 12,589. Brazil 12,338. Costa Rica 400.

Africa: South Africa 2,678.

Oceania: Australia 164,601. Guam 31,553. New Zealand 27,621. Mariana Islands 6,578 (of which the largest is Guam). Palau Islands 650.

Note: This is the earliest document seen (March 2010) concerning soybean products (miso) in Palau; soybeans as such have not yet been reported.

Total exports. 4,531,300 kg. Total amount of miso made in Japan in 1998: 548,750,000 kg. Percent of miso made that is exported: 0.82%. Address: Japan.

573. *Canadian Soybean Bulletin (OSG, Chatham, Ontario, Canada)*. 2000. Canadian soybean exports. 14(2):3. Nov.

• **Summary:** A large table shows statistics in tonnes (metric tons) of soybeans exported to various countries, and regions, each year from 1996/97 to 1999/2000. The countries are: In Asia—China, Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, and Thailand. In Western Europe—Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Portugal, and Spain.

By continent—Africa, Central America, Eastern Europe, Middle East, Oceania, South America, and United States.

In 1999/2000 the countries to which the largest amount of Canadian soybean exports went were (in tonnes): Japan 179,708, United States 121,860, Malaysia 99,919, Indonesia 64,426, Denmark 47,444, Germany 43,410, and Netherlands 36,392.

574. **Product Name:** [Tempeh, Amazake, Miso].

**Foreign Name:** Tempeh, Amazake, Miso.

**Manufacturer's Name:** Rui Rato Tempeh.

**Manufacturer's Address:** Bairro da Coopalm, Lote 291, 2727 Algueirao, Portugal. Phone: +351 21 920 2798.

**Date of Introduction:** 2000.

**New Product—Documentation:** Talk with Roy Kamiki of Nutrideas, Portugal. 2001. June 10. Ricardo currently makes tempeh, amazake, and miso, but does not have a company name. He has only one customer. He sells tempeh frozen to a big organic co-op—BioCoop—An organic farming Product Co-op is Lisbon.

“Mr. Rui Rato is a fan of yours and a great appreciator of your books. He has nearly all your publications, but does not depend on soyfoods production for his source of income. He has another steady job and makes soyfoods in his spare time.”

575. Corum, Ann Kondo. 2000. *Ethnic foods of Hawai'i*. Revised ed. Honolulu, Hawai'i: The Bess Press. vi + 234 p. See p. 53-54, 74, 88. Illust. Recipe index by category. Recipe index by ethnic group. 23 cm. 1st ed. 1984. [73 ref]

• **Summary:** The semi-Japanese recipe for Microwave azuki mochi (p. 74) concludes: “Roll in katakuriko (potato starch) or kinako (soybean flour).”

The Okinawan recipe for “Nantu: Steamed Okinawan mochi” (p. 88) calls for “kinako (soybean flour) as an ingredient.

The ethnic groups whose recipes are represented in this collection are (listed alphabetically): Chinese, Filipino, Hawaiian, Japanese, Korean, Okinawan, Portuguese, Puerto Rican, Samoan, Thai, and Vietnamese.

The section titled “Soybean and bean products” (p. 53-54) discusses miso, tofu, and shoyu, sukiyaki, aburage, okara, miso soup, teriyaki, and kuromame (black soybeans).

About the author: On the rear cover, with a portrait photo, we read: “Ann Condo Corum was born in Honolulu and graduated from Punahou School. She has a degree in English from California State University at Long Beach and a Master of Science degree from the University of Southern California.” Address: Author.

576. Green, Shia. 2001. *Tempeh: La mejor proteína vegetal [Tempeh: The best source of plant protein]*. Barcelona, Spain: Océano Grupo Editorial, S.A. 144 p. Illust. 20 cm. Series: La naturaleza cura. [Spa]



• **Summary:** Contents: What is tempeh?: Brief history of tempeh, soybeans—protein source of the future. How to make tempeh at home. How to make a tempeh incubator. Preparatory techniques. Tempeh recipes: Easy recipes to start with, Western-style recipes, Asian-style recipes. Appendixes: I. Other types of soyfoods (glossary). II. Useful contacts in Spain: Natursoy, S.L. (Barcelona). Vegetalia (Barcelona), BioSpirit, S.L. (Girona).

Describes the secrets of preparing recipes that are delicious, nutritious, and healthful.

577. Ishige, Naomichi. 2001. The history and culture of Japanese food. London, New York, Bahrain: Kegan Paul. x + 273 p. Illust. Maps. No index. 24 cm. [59 ref. Eng]

• **Summary:** This book is crippled by the lack of an index. Moreover, the sources of most of the interesting material in the text are not cited. Otherwise it is very well researched and well written.

Contents: Introduction—The historical framework. Part I: The dietary history of Japan. 1. The prehistoric era: The Paleolithic age, the advent of earthenware, Jōmon society and dietary culture. 2. Establishment of a rice-growing society: A crop held in special regard, the dissemination and development of rice, rice cooking, sake brewing, fermented fish and flavourings. 3. The formative period of Japanese dietary culture: Historical setting, the taboo on meat eating, the lack of a dairy industry, annual observances and rites of passage, place settings and table settings, cooking and banquet styles, the roles of the monasteries, the popularization of noodles.

4. The age of change: Historical setting, the diffusion of tea, the impact of the ‘Southern Barbarians’ (*nanban*; first came the Portuguese and Spaniards, Catholics from Iberia, then the Dutch and English, Protestants from northwest Europe called *kômōjin* {“redheads”} to distinguish them from the Iberians, Saint Francis Xavier, introduction of meat eating {beef} by Catholics by 1557 in the town of Oita in northwest Kyushu, expansion of meat eating by non-Christians in Nagasaki and Hirado island {northeast Kyushu}, in 1612 Christianity and meat eating are prohibited by the Tokugawa shogunate but the Chinese colony in Nagasaki is exempted, Dutch traders are the only Europeans allowed to remain in Japan after the country is closed but they are isolated on a tiny island in Nagasaki harbor and barred from contact with ordinary citizens, dishes with *nanban* influence include fried tofu patties {called *ganmodoki* in the east of Japan, or *hirōsu* or *hiryōzu* in the west}, tempura, *nanban* confectionary {such as *kasutera*} is especially popular, introduction of new crops by Europeans {incl. sweet potato, two types of pumpkin squash, cayenne pepper, kidney beans, peanuts}, formation of a new style (banquet-style meals {*honzen ryōri*}, *kaiseki*), change in the frequency of meals (from two to three).

Note 1. This is the earliest (and only) English-language

document seen (April 2013) that contains the word *hirōso*; it refers to Kyoto-style deep-fried tofu balls.

5. The maturing of traditional Japanese cuisine: Historical setting town and country, the spread of soy sauce, the emergence of the restaurant, snack shops, books on cooking and restaurants, the Ainu, the Ryukyu Islanders. 6. Changes in the modern age: Historical setting, the resumption of meat eating, milk and dairy products, entry of foreign foods, zenith and nadir, new meal patterns, integration of foreign foods—a model.

Part II: The dietary culture of the Japanese. 7. At the table: Gohan—framework of the meal, the rise of the table, the tabletop as landscape, chopsticks and table manners, etiquette—as you like it. 8. In the kitchen: The secularization of fire and water, from wood fire to electric rice cooker, the knife—a sword in the kitchen, restaurants—the public kitchen. 9. On the menu: Soup and umami flavouring. Sashimi—Cuisine that isn’t cooked, Sushi—from preserved food to fast food, sukiyaki and nabemono, tofu and nattō—meat for vegetarians, vegetarian temple food, tempura and oil, noodles and regional tastes, pickled and preserved seafood, mochi, confectionery and tea, the dynamics of sake and tea.

Teriyaki developed during the Edo / Tokugawa period (1600-1867) (p. 116; However no citation for the source of this information is given).

During the Edo period, most commoners living in Japan’s cities ate plain and repetitive meals. In Edo (later Tokyo) most had a breakfast of rice, miso soup, and pickles; for lunch and dinner they ate approximately the same thing “with the addition of one dish of simmered vegetables or tofu, or simmered or grilled fish” (p. 113). Address: National Museum of Ethnology, Osaka, Japan.

578. Rivas, M.; Garay, R.P.; Escanero, J.F.; Cia, P., Jr.; Cia, P.; Alda, J.O. 2002. Soy milk lowers blood pressure in men and women with mild to moderate essential hypertension. *J. of Nutrition* 132(7):1900-02. July. [19 ref]

• **Summary:** This research suggests that soymilk lowers blood pressure in men and women with essential hypertension. Subjects consumed either 500 ml of soymilk or an equivalent amount of cow’s milk for 12 weeks. At the end of the study, systolic and diastolic blood pressure decreased by about 18 and 16 mm of mercury, respectively, in the soy group, but only about 1 and 4 mmHg in the cow’s milk group. Differences between groups were statistically significant. The results are encouraging, but more research is needed. Address: 1. Dep. of Internal Medicine, School of Medicine of Zaragoza, Spain.

579. *Natural Foods Merchandiser*. 2002. Soy milk lowers blood pressure. Sept. p. 42.

• **Summary:** ... in people with hypertension according to a study conducted by Miguel Rivas, M.D. and co-workers, of the Medical School of Zaragoza in Spain. The results

were published in the *Journal of Nutrition*, July 2002, 132(7):1900-02.

580. *Canadian Soybean Bulletin (OSG, Chatham, Ontario, Canada)*. 2002. Canadian soybean exports. Winter. p. 2.

• **Summary:** A large table shows statistics in tonnes (metric tons) of soybeans exported to various countries, and regions, each year from 1998/99 to 2001/2002. The countries are: In Asia—China, Hong Kong, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand. In Western Europe—Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Portugal, and Spain. By continent—Africa, Central America, Eastern Europe, Middle East, Oceania, South America, and United States.

In 2001/2002 the countries to which the largest amount of Canadian soybean exports went were (in tonnes): Japan 126,619, Malaysia 101,698, United States 60,244, Germany 29,377, Indonesia 26,836, Hong Kong 22,800.

Total Canadian soybean exports have declined dramatically during the past two years, from a peak of 946,360 in 1999/2000, to 746,241 in 2000/2001, down to 471,492 in 2001/2002.

581. Stevanon, Margarita. 2002. *Cocinar con tofu: recetas sabrosas y nutritivas para todos los gustos* [Cooking with tofu: Savory, nutritious recipes for every taste]. Barcelona, Spain: Integral. 171 p. Illust. (by Carmen Luz Domínguez Rocha). 21 cm. [Spa]\*

• **Summary:** Margarita Stevanon was born in 1938.

582. Hymowitz, Ted. 2003. Samuel Bowen and James Flint: Mung beans (Luk Taw), Chinese vetches, and soybeans (Interview). *SoyaScan Notes*. July 9. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Samuel Bowen coined the term “Chinese vetches” in about 1766 or 1767. We know that he used the term in London before May 1767 when he personally presented as sample of “Chinese vetches” to the Society for the Encouragement of Arts, Manufactures, and Commerce (see Templeman 1767). He also appears to have been the first to use the term “Luk Taw,” but (curiously) we have only one record of its use—in the 1767 article in *Gentleman's Magazine*.

Bowen and Flint first met on the ship *Success*, and sailed together on 13 June 1759 from Canton (site of the East India Company's trading post), via Ningpo north to Tientsin, where Flint disembarked on July 29. Bowen probably disembarked at the same time—but we are not sure. Although they were probably on the same ship for about 6 weeks, we do not know how well they got to know one another. Flint was stationed in China, where he had been an employee of the East India Company since 1736; he was the Company's interpreter and supercargo—a high, well-paid position. Bowen arrived in Canton from London as a lowly seaman on the

East India Company's ship *Pitt*.

The two men probably parted in Tientsin; each somehow worked his way back to Canton via the overland route. The *Success* and her crew were lost at sea on the return voyage to Canton. Flint was imprisoned by the Chinese at Macao from Dec. 1759 to Nov. 1762, then banished forever from China. Bowen claimed that he was a prisoner in China for nearly 4 years and was carried from place to place throughout the country's interior. We do not know how long Bowen lived in Canton or southern China, where or how he learned how to make soy sauce, and where or how he got the soybean (and perhaps mung bean) seeds he took to Georgia. So he could have learned the word “Luk Taw” while he was in southern China. Flint, who had a sound knowledge of Chinese culture and language, could have given seeds to Bowen and advised him that they were valuable.

Bowen and Flint apparently returned to London on different ships, but they were both there in late 1763. On 16 Nov. 1763 Bowen petitioned the Court of Directors of the East India Co. for compensation. At about the same time, Flint petitioned the same Court. Ted is sure they met again at this time in London. They must have become close friends, because Flint later visited Bowen in Savannah, Georgia, and two of Bowen's sons bear the name “Flint.”

Henry Yonge / Young had no Chinese ancestry or friends. Address: Prof. of Plant Genetics, Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

583. Toscano, Dawn. 2003. Work with tofu in Japan and Spain (Interview). *SoyaScan Notes*. July 16. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Dawn has been living in Spain since 1988—for the last 15 years. Now she wants to start making tofu in Valencia, Spain, where it is available only at high prices, vacuum packed in plastic, at trendy herb stores or via Chinese distributors.

She knew Nahum & Bev Stiskin, whose fledgling publishing company, Autumn Press, published *The Book of Tofu* in late 1975. In March 1974, when she went to Japan (because she could not find a job in USA), she lived in Minami-ku, Yokohama, and worked at the YMCA. Then, during her yearly gynecological visit, she met a gynecologist at the Yamate Hospital who was a Lt. Commander in the U.S. Navy. He lived on the navy base in Yokohama. Later in 1974 she moved to Hayama and got into paper-making then into weaving. Beverly Stiskin was selling one of her looms, but Bev needed to see a gynecologist, so Dawn took Bev to the Yamate Hospital and Dawn's boyfriend helped her, free of charge. Dawn ended up not buying the loom. But she did talk to Nahum and showed him a newspaper article she had about tofu. He was interested. She may have given Shurtleff's phone number to Nahum or she may suggested to Shurtleff that he call Nahum.

In the 1970s she called Shurtleff at least 3 times in Japan

and once in ca. 1980-81 from a phone box in Lafayette, California; her future ex-husband lived in Walnut Creek. In Japan she sent Shurtleff a draft of an article she wrote about tofu and wanted to submit to *Mother Earth News*. Shurtleff suggested some corrections, but it was never published. She used to make tofu all the time at home in Japan, and she has continued since she arrived in Spain. She bought a first edition of *The Book of Tofu*, then wrote a letter to *Mother Earth News* and urged them to review the book. They wrote back saying “no, the timing is not right,” because they had never heard of tofu. She still has both letters *Mother Earth News* wrote to her. The second says “Thanks so much for bringing this book to our attention.” She was a *Mother Earth News* lifetime subscriber (“Lifer,” for \$250) #447 or #449. Address: Calle Uruguay 59, pta 13, 46007 Valencia, Spain. Phone: +34 96 380 2129.

584. Toscano, Dawn. 2003. Re: List of active and inactive tofu makers in Spain. Letter to William Shurtleff at Soyfoods Center, July 17 and 31. 2 p. Typed, with signature.

• **Summary:** “Dear Bill, I personally called and talked to everyone. Some were very helpful and offered information, others were loathe to say little more than their address. In all cases where there was erroneous information [in the list Shurtleff sent Dawn], I tried to discover if the person still lived in the neighborhood or if the company had changed it’s name, etc., by calling telephone operator assistance, the respective town chambers of commerce, and companies if they had heard news of either defunct or flourishing companies not on my list. In this last case it appears that there is very little communication amongst producers. All information is up to date as of July 17, 2003.”

Living and healthy companies: Vegetalia (Barcelona). Natursoy (Barcelona). Zwaitzo (Vitoria-Gasteiz). Integral Artesán (Barcelona). Tofu-ya (Director: Miki Takazumi. Madrid). Oriente Alimentación (Madrid).

Doubtful: Jane A Garbutt (Granada).

Dead: Tofu Sur (Granada). La Soyaria (Owner: Mario Rimoldi, Barcelona). Address: Calle Uruguay 59, pta 13, 46007 Valencia, Spain.

585. Vandemoortele. 2003. [History of Vandemoortele: Centennial (Website printout-part)]. [www.vandemoortele.com/nl/honderdjaar/frameset/timebody.html](http://www.vandemoortele.com/nl/honderdjaar/frameset/timebody.html) Printed Aug. 5. [Dut]

• **Summary:** 1899–Factory in Izegem is established.

1921–“NV Huileries Vandemoortele” is established. 1936–Consumer oils first produced. 1947–Oils in bottles are launched. 1951–Acquisition of the firm Albers uit Lier. 1955–The firm Metro is established. 1957–Oilseed extraction plant is constructed in Merksem. 1958–A margarine factory is established in Oudenbosch (Netherlands).

1962-67. Further introduction of a line of products.

1969–Acquisition of Meyer Lippinghausen (Meylip). 1974–

Vamo Mills established. 1978–NV Vamix established. 1978–Acquire the consumer oils and fats activities of Oleofina.

1980–NV Alpro is established. Construction of a soymilk extraction factory at Gent. 1981-1989–Extension of market positioning into France and Germany. 1989–Acquisition of NV Vleminckx. 1990-1991–Expansion into Eastern Europe. 1991–Construct a new factory for baked goods in the UK. 1992–Joint venture with Fuji Oil Co. 1993–Further expansion of margarine into freezers. 1996-1997–Acquisition of Sojinal in Issenheim, France. Further expansion into southern and eastern Europe. 1998–Divestiture of bulk industry. Joint venture with Cargill. Acquisition of the packaged fat activities of Cargill Europe. Expansion of freezer activities. 1999–Alpro builds a new factory in England.

2000–Vandemoortele Dough Products gets a new logo and a new name: Vandemoortele Bakery Products Division. Vandemoortele Bakery Products opens a new factory for frozen goods in Eeklo, Belgium. Acquisition of the Italian baking specialist Star SpA. Acquisition of Alain Sobrie S.A. Vandemoortele becomes a shareholder of *Cuisine de France* (CdF). Group Vandemoortele sells its share of NV Vamo-Fuji to Fuji Oil.

2001–Vandemoortele acquires Alimas in Italy. 2002–Acquisition of Lasem of Spain. Sale of shares in aOP to Cargill. Address: Netherlands.

586. *The Non-GMO Source* (Fairfield, Iowa). 2003. Europe’s non-GM soy production news. 3(9):4. Sept.

• **Summary:** Soybean production in the European Union (EU) decreased to 808,000 tonnes (metric tons) in 2002-2003, down from 1,234,000 tonnes in 2002-2001. Use of soybean meal continues to be greater than 30 million tonnes.

Soybean production in the past year in the EU is concentrated in Italy (566,000 tonnes; 70.0% of the total) and France (204,000 tonnes; 25.2% of the total). Small amounts are also produced in Austria (which bans GMO-soy) and Spain.

Carrefour, France’s No. 1 supermarket chain, says it has secured a non-GMO supply chain from Brazil with a GM threshold of below 1%.

587. **Product Name:** [Tofu].

**Manufacturer’s Name:** Integral Artesán.

**Manufacturer’s Address:** Calle Batista y Roca 5, 08029 Mataró (Barcelona), Spain. Phone: 93 757 9350.

**Date of Introduction:** 2003.

**New Product–Documentation:** Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. Integral Artesan is alive and healthy. Director: José Vincent. Soybeans come from Brazil. They do not give public tours. It is a co-op and the members decided against tours.



588. **Product Name:** [Tofu].

**Manufacturer's Name:** Oriente Alimentación.

**Manufacturer's Address:** Poligono Valmor, 2B, Carretera de Andalucía, km, 28,700 28340 (Madrid), Spain. Phone: 91 895 3622.

**Date of Introduction:** 2003.

**New Product–Documentation:** Letter from Dawn Toscano of Valencia, Spain. 2003. July 17. Survey of tofu makers in Spain. Oriente Alimentación is and healthy. Soybeans come from Canada. Do not give tours to the public. Former address: Poligono Valmor, 2B. Founded 1987. Dawn says this is a Korean-run company but he will not give her his name.

589. Dillman, Erika. 2003. La Soja, un tesoro nutritivo: Sus numerosos beneficios para la salud [The soybean, a nutritive treasure: Its numerous health benefits]. Barcelona, Spain: Ediciones Oniro, S.A. 125 p. No index. 21 cm. Series: Terapias Naturales. [Spa]

• **Summary:** A Spanish-language translation of the following book: Dillman, Erika. 2001. *The little soy book*. New York, NY: Time Warner. 190 p. Address: [Seattle, Washington].

590. Food and Agricultural Organization of the United Nations. 2003. Soybeans: Area harvested, yield, and production. *FAO Yearbook–Production (Rome, Italy)* 57:115-16.

• **Summary:** The 2003 Production Yearbook, under “Soybeans” (p. 115-16, in English, French, and Spanish) gives area harvested (1,000 ha), yield (kg/ha), and production (1,000 metric tons), each for the years 1989-91, 1995, 1996, 1997, for the following places: World. Africa: Benin, Burkina Faso, Burundi, Congo–Democratic Republic, Cote d’Ivoire, Egypt, Ethiopia PDR, Ethiopia, Gabon, Liberia, Madagascar, Morocco, Nigeria, Rwanda, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

North and Central America: Belize, Canada, El Salvador, Guatemala, Honduras, Nicaragua, Panama, USA.

South America: Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Suriname, Uruguay, Venezuela.

Asia (fmr = former). Asia: Azerbaijan, Bhutan, Cambodia, China, East Timor (1,000 MT), Georgia, India, Indonesia, Iran, Iraq, Japan, Kazakhstan, Korea–Democratic People’s Republic of (north), Korea–Republic of (south), Laos, Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Syria, Tajikistan, Thailand, Turkey, Viet Nam (Vietnam).

Europe (former). Europe. Albania, Austria, Bosnia Herzegovina, Bulgaria, Croatia, Czechoslovakia, Czech Republic, France, Germany, Greece, Hungary, Italy, Moldova Republic, Romania, Russian Federation, Serbia-Montenegro, Slovakia, Slovenia, Spain, Switzerland, Ukraine. Note: Serbia-Montenegro appears for the first time. Harvested 112,000 ha (yield = 2,099F kg/ha) in 1999-2001, 87,000 (yield = 2,369F) in 2001, 100,000 (yield = 2442F) in 2002,

and 131,000 (yield = 1,720F) in 2003. Produced 224,000 metric tons in 1999-2001, 207,000 MT in 201, 244,000 MT in 2002, and 226,000 MT in 2003.

Oceania. Australia.

Note: In this 2003 Yearbook the USSR was not listed for the first time in the history of the publication.

591. Panetta, Walter. 2003. Todo sobre la soja: que cura la diabetes, la colitis, la hipertensión, los trastornos de la menopausia, el estre’s... [Everything about soya: which cures diabetes, colitis, hypertension, the troubles of menopause,...]. Barcelona, Spain: Terapias Verdes: Círculo de Lectores. 96 p. [Spa]\*

592. Purti, Iona. 2003. El libro del tofu [The book of tofu]. Oceano Ambar. 136 p. [Spa]\*

593. Toscano, Dawn. 2004. Re: Translating *The Book of Tofu* into Spanish. Three Spanish-language books on tofu. Updating lists of tofu makers in Spain and Israel. Letter to William Shurtleff at Soyfoods Center, Jan. 1. 3 p. Typed, with signature.

• **Summary:** Dawn is working each day to translate *The Book of Tofu*, by Shurtleff and Aoyagi, into Spanish; she has not yet found a publisher. She has found three Spanish-language cookbooks dedicated to tofu, which she cites and will send to Soyfoods Center. She then updates information about 5 tofu makers in Spain and adds new listings for 3 tofu makers in Israel. She and a friend visited Zuaizto Proteinas Vegetales (legal name: Ekosal-Luz, S.L.) in Vitoria. The founder, Javier Arocena Arumburu, is now a major “stock holder.” The director is José Ignacio Orlando. Address: Calle Uruguay 59, pta 13, 46007 Valencia, Spain. Phone: +34 96 380 2129.

594. Drosihn, Bernd. 2004. Update on soyfoods in Europe. Part I (Interview). *SoyaScan Notes*. March 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** This interview was conducted during Bernd’s visit to Soyfoods Center. The biggest development for soyfoods in Europe during the past 5-7 years is that soymilk has entered the mainstream market in several countries, driven mainly by Alpro (whose brand was changed to AlproSoya from Alpro 2-3 years ago), the main soymilk maker in Europe. AlproSoya is spending lots of money promoting soymilk and educating consumers about the health benefits of soyfoods. And although there are no health claims in Europe (there is sort of one in the UK) and no FDA, there is a great deal of information available about the health benefits of soy. Women, especially those in their 40s and 50s near the age of menopause, are the target of much advertising and educational material. AlproSoya uses brochures, Internet and TV advertising to educate these people. However Bernd feels that Alpro’s style is a little old-fashioned.

Meat alternatives and dairy alternatives are also growing

rapidly, but they are still niche products. The organic movement in Europe has long been bigger and stronger than its American counterpart, and it continues to grow at a healthy rate. In Germany, the government greatly helps the organic movement—which is also strong in France, Italy, and Spain in both mainstream and health food sectors. The organic and soyfoods movements have generally worked closely together to help one another, although not all soyfoods companies (especially those based in the Asian market) use organic ingredients. Sojaxe, the former European soyfoods association, is now named Ensa. Ensa is still based in France and it gets some money from the department of agriculture in France because some soybeans are grown in southern France. Since soybeans are not an important European crop (most are imported), they are not promoted by European governments.

The discovery of mad cow disease in about the year 2000 in many European countries outside of the UK had a very positive effect on soyfoods. It was a rising tide that lifted all ships (soyfoods companies). From that time on soyfoods gradually started to be recognized in mainstream markets.

Bernd buys all his soybeans (specific desired varieties at a specified price) under a “Fair Trade” contract from a specific organization in southern Brazil; all are certified non-GE (genetically engineered).

Many European companies now state in their brochures that the FDA has given a heart-healthy claim for soy protein in the USA. But American food has a bad reputation in Europe, being strongly linked with McDonalds, Coca-Cola, Burger King, etc. So Europeans tend to be skeptical of American claims related to food. Instead European companies prefer to cite the original research articles and summarize their findings.

Bernd is not aware of any negative information about soy on the Internet—probably because most of it is in English.

The three largest soyfoods markets in Europe (in total sales) are probably the UK, France, and Germany—in that order. But in terms of per capita consumption, the largest are probably the UK, Netherlands, Belgium, France, and Germany—in that order.

Alpro, which has a very close connection to France, has done a great deal to develop the market there. Bernard Storup’s company, Nutrition et Soja S.A., now owned by Novartis, is doing well and is also strong in France. Bernd just saw Bernard (and his business partner Jean de Preneuf) at the Nuremberg show in Germany. Bernard would like to get out of his relationship with Novartis (formerly Sandoz), because they no longer get funding and Novartis has no interest in Nutrition et Soja. Note: Sandoz AG (Basel, Switzerland) merged with Ciba-Geigy in March 1996 to become Novartis. Jean is “the Steve Demos of Europe”—very creative and very crazy. He has an old farmhouse in the south of France and he also has another business that makes

sunglasses.

The creation of the EU (European Union) and the euro as a currency has helped Viana and most other soyfoods companies in Europe by greatly facilitating exports and imports across country borders. As a result of its move to a new and larger factory, the creation of the EU, and the advent of mad cow disease, Viana’s exports now 35-40% of total sales, and are growing faster than sales in Germany. Viana exports outside the EU (to Croatia, Czechoslovakia, Israel, Morocco, Bahrain, etc.) account for about 1.5% of sales. The economies of eastern Europe are developing very slowly. Bernd knows of 2-3 tofu makers in Poland (incl. Polsoja; tofu is sold in supermarkets) and at least 2 in Czechoslovakia (one employs 60-80 people). In Austria, Guenter Ebner works for Viana, sells Viana products, knows the eastern European market very well, provides much information to Bernd about this market. The founder of Sojarei Vollwertkost GmbH, Guenter had his company taken over by the major shareholder in an unfriendly way; they kicked Guenter out.

The boundaries between eastern and western Europe are slowly breaking down. The move toward a unified greater Europe will be accelerated on May 1 of this year when 10 eastern European countries are scheduled to join the EU: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

Bernd estimates that only about 10% of Germans consume soyfoods at least once a month; this figure is much lower than in the USA. Viana’s exports have grown. Continued. Address: Founder and president, Viana Naturkost GmbH, 54578 Wiesbaum / Vulkaneifel, Germany. Phone: +49 06593-99670.

595. Drosihn, Bernd. 2004. Update on soyfoods in Europe. Part II (Interview). *SoyaScan Notes*. March 15. Conducted by William Shurtleff of Soyfoods Center.

• **Summary:** Soymilk: A major new soymilk maker in Europe is named Wild ([www.wild.de](http://www.wild.de)), an old German food company that specializes in fruits and ingredients; their retail soymilk is named Soy and Joy. Their most famous brand is Caprisun, a non-soy drink in a foil pouch, well known in the USA. They and So Good, the Australian soymilk now made with Solae, are both strong competitors of Alpro.

Several weeks ago Hain-Celestial of New York purchased two German soymilk makers, both owned by Bruno Fischer, Jr.: Natumi and Gut Honneroth. He sold both companies at a low price—probably because he had to. Bruno had gotten his soymilk into Aldi, the mother company of Trader Joe’s and the No. 1 discounter in Germany—and maybe in all of Europe, and he developed a large soymilk business with Aldi—perhaps so large he could no longer handle it himself. Bruno also made a lot of private label soymilk. With Hain, Bruno found a large German dairy to make soymilk for Aldi under a new Aldi brand. The new European CEO of Hain-Celestial is Philippe Woitrin, who

was CEO of Lima Foods when Hain acquired it.

Triballat makes the best soy yogurts (Sojasun brand) in the world—in Bernd's opinion. They have a new brand, Sojadé, which are delicious creamy yogurt drinks—maybe organic. The Japanese Yakult concept of drinking live beneficial probiotic bacteria each morning has now caught on in a big way in Europe. Yakult is one of the best entries into the European food market in years. Bernd just saw White Wave's Silk Alive [the name was soon changed; it was sold commercially only under the name "Silk Live"], a similar product, at the Anaheim Natural Products Expo. But he liked the Wildwood smoothie even better, and the WholeSoy fermented soymilk best of all American products.

In France a small company named Sojami (pronounced so-zha-MEE), which started about 10 years ago, makes very creative, unique, and interesting soy cheeses and cultured soy yogurts. The founder has a university research background and is a very nice guy.

Tofu: Tofu consumption in Europe has expanded steadily over the past 5-7 years, but it is still a very small product. The largest maker of the tofu and tofu products sold in Germany is Life Food GmbH / Taifun Produkte, run by Wolfgang Heck and Guenter Klein. Heuschen-Schrouff B.V. (Landgraaf, Netherlands) and Viana are tied for second place. About 10 years ago, Heuschen-Schrouff started selling their tofu under the organic So Fine brand ([www.sofine.nl](http://www.sofine.nl)). An Indian-run company in Kerkrade, Netherlands, run by the brothers Singh (both Sikhs), makes tofu mostly for the Asian (Indonesian) market. In 2001 Viana started selling its tofu to the mainstream market under the Veggie Life brand; this English-language brand name communicates well to people speaking many different languages throughout the EU (European Union)—though distribution is still limited to Germany and Austria. Soto Tofu, formerly run by Rolf Barthof has been sold to a very large dairy company, Algäuland. Viana's main products are tofu and tofu products—such as meat and cheese alternatives. Viana is #1 in Germany in meat alternatives. Germans buy soyfoods for three main reasons: They are good for one's health, they taste good, and good for the environment. Bernd is a vegan, but about 90% of Viana's products are sold to non-vegetarians.

Early tofu companies still active in Europe include Sojafarm (founded and still run by Lothar Stassen), Albert's Tofuhaus (Albert Hess; exports lots of his products to France). A basic problem with the smaller, early tofumakers in Germany is that they didn't have the creativity or power to put a brand on the market. So both these companies produce a lot of tofu under private labels. Lothar bought the Svadesha brand (Svadesha was the first German tofu company) and produces tofu under the Svadesha brand. About 2-3 years ago he also purchased the Nagel's Tofu brand from Christian Nagel, who now markets the tofu under his former brand. So Lothar makes tofu under 3 brands. Berief Feinkost (in Beckum, northern Germany), started 10-15 years ago, tries to

cover the mainstream tofu market, but not very successfully. Kassel Tofu Kato (started by Gyoergy / Yuri Debrecini, who was at Soyastern). Thomas Karas is no longer involved with soyfoods; he tried to enter the computer business but Bernd does not know what he is doing now. In Spain, the market leader is Natursoy near Barcelona. Nearby is Salvador Sala of Vegetalia. In Spain, there is a lot of interest in and rapid growth of soyfoods and organic foods. In Italy the Ki Group (Schenker) owns a tofu company—fairly old but not very creative.

In the United States, Pulmuone now has three U.S. factories; their first one in Southgate, southern California, a new one at Fullerton, California, and a 3rd one in New York. The Fullerton factory is the most modern Bernd has ever seen. There they make Gourmet Tofu, introduced in about Jan. 2004, which is presliced and marinated, in 4 flavors / styles: Baked, Sliced, and Marinated.

Meat alternatives: Nestle now owns Osem which owns Tivall, the Israeli maker of meat alternatives. Since all of Tivall's products are held together by eggs or egg whites, none of them are vegan—and none are organic. Quorn, which also contains lots of egg protein, is owned by AstraZeneca [Marlow Foods]—which wants to sell the company because growth and profits have been lower than expected. DE-VAU-GE in Germany is a very big company, they make large amounts of meat alternatives (incl. burgers), and they do a lot of business with Aldi in breakfast cereals—not in soyfoods. Bernd thinks they are good, and very economical manufacturers, but they are not very creative and they have no USP (unique sales point); moreover, many of their products contain egg protein, but their quality is lower than that of Tivall. Bernd believes his meat alternatives are as good as Tivall's, but more expensive, in part because of organic ingredients. Tivall makes its raw materials in Israel, then exports these to Europe for cutting and flavoring.

Klaus Gaiser owns Topas which sells Viti brand meat alternatives based on wheat gluten, with no soy; he owns the brand and markets the products, but he has meat companies manufacture them. However, when his typically 3-year contract with the manufacturer expires, he has to find a new manufacturer, but the previous one keeps making his products under their own brand. In the USA: At Turtle Island Foods (Hood River, Oregon), Bernd met Hans Wrobel, a German who does product development. Note: Hans and Rhonda Wrobel of The Higher Taste developed Tofurky in Portland, Oregon. Bernd makes Pizzarella, a tofu-based cheese alternative. Address: Founder and president, Viana Naturkost GmbH, 54578 Wiesbaum / Vulkaneifel, Germany. Phone: +49 06593-99670.

596. Hymowitz, Ted. 2004. Early experimental gardens and swapping stations established by European powers during the Age of Exploration (Interview). *SoyaScan Notes*. April 12. Conducted by William Shurtleff of Soyfoods Center.





• **Summary:** Early experimental gardens (agricultural experiment stations) and major swapping stations were developed by the Portuguese on the Cape Verde Islands (west of Guinea-Bissau), the Spanish (under Cortez / Cortés) in Mexico City, the British at Kew, Nairobi, Singapore, and the colony of Georgia (the Trustees' Garden of Georgia, a government experimental farm at Savannah, laid out in 1733), etc.

The swapping consisted of bringing plants from Europe to these gardens or new colonies, and taking plants to Europe from these places.

Cortez was too busy with conquest to attend to the botanical garden in Mexico City (not Acapulco), so he put one of his fellow generals in charge of it; that man kept a meticulous log of his acquisitions. Unfortunately, there is no mention of soybeans. Address: Prof. of Plant Genetics, Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

597. Wilcox, James R. 2004. World distribution and trade of soybean. In: H. Roger Boerma and James E. Specht, eds. 2004. Soybeans: Improvement, Production, and Uses. 3rd ed. Madison, Wisconsin: American Society of Agronomy. xxv + 1144 p. See p. 1-14. Chap. 1. [14 ref]

• **Summary:** Contents: Introduction. 1. World soybean production: USA, Brazil, Argentina, China, India. 2. World trade in soybean, soybean oil, and soybean meal. 3. World

production trends. 4. Potential changes in seed yields. 5. Summary. Address: Prof. Emeritus, Dep. of Agronomy, Purdue Univ., West Lafayette, Indiana 47907-1150.

598. U.S. Agency for International Development. 2004. Celebrating Food for Peace 1954-2004: Bringing hope to the hungry. Washington, DC: U.S. Government Printing Office. 16 p. [http://pdf.usaid.gov/pdf\\_docs/PDABZ818.pdf](http://pdf.usaid.gov/pdf_docs/PDABZ818.pdf)

• **Summary:** At the top of the cover: "Food can be a powerful instrument for all the free world in building a durable peace."—President Dwight D. Eisenhower.

On page 2 is a message from President George W. Bush: "Across the earth, America is feeding the hungry. More than 60 percent of international emergency food aid comes as a gift of the people of the United States... Millions are facing great affliction, but with our help, they will not face it alone. America has a special calling to come to their aid and we will do so with the compassion and generosity that have always defined the United States. February 1, 2003, Washington, D.C."

Contents: Message from Secretary of State Colin Powell. Message from USAID Administrator Andrew S. Natsios. Over the past 50 years, "Approximately 3 billion people in 150 countries have benefited directly from our food." What is Food for Peace? ("Over the past 50 years, the Food for Peace program has sent 106 million metric

"Food can be a powerful instrument for all  
the free world in building a durable peace."

—President Dwight D. Eisenhower

Celebrating  
**50**  
**FOOD FOR PEACE**  
**1954–2004**

*Bringing Hope to the Hungry*

tons to the hungry of the world, feeding billions of people and saving countless lives. The program depends on the unparalleled productivity of American farmers and the American agricultural system. Without this vast system there would be no Food for Peace program. On average, American generosity provides 60 percent of the world's food aid, feeding millions of desperately hungry people every year").

Who has received our food? ("\* The number of countries in the program has varied from 47 to 106. \* The number of those assisted has varied from 17.3 million in 1963 to 133 million in 2003. \* In 1958, Food for Peace shipped 4.48 million metric tons, the largest single-year donation to the world's hungry. \* The commodities that Food for Peace sends around the world come from virtually every state. \* One hundred thirty-five countries have received FFP food aid since 1954").

"The history of America's food aid: America's food assistance programs began in 1812, when President James Madison sent emergency aid to earthquake victims in Venezuela. Herbert Hoover led a huge feeding program in Russia during the 1920s in addition to famine relief programs during World War I and World War II in Europe. In 1949, the United States launched the Marshall Plan, which brought tons of food to the people of Western Europe, planted the seeds for a rejuvenated and now fully united Europe, and laid the foundations for a permanent U.S. food aid program. Many European countries we helped at that time have long since become major food exporters and important international donors.

"On July 10, 1954, President Dwight D. Eisenhower signed the Agricultural Trade Development Assistance Act or Public Law (PL) 480 into law. The purpose of the legislation, the President said, was to "lay the basis for a permanent expansion of our exports of agricultural products with lasting benefits to ourselves and peoples of other lands." The Food for Peace of 1966 revised the basic structure of the programs and placed the emphasis clearly on the humanitarian goals of the program. The policy statement shifted from surplus disposal to planned production for export to meet world food needs.

"From food aid to self reliance. Many countries that received U.S. food aid in the early years of PL 480 have become self-sufficient or even food exporters and major international donors. Among them are such prosperous European nations as France, Germany, Belgium, Austria, Italy, the United Kingdom, Spain, Greece, Portugal, Cyprus, Turkey, Poland, and the former Czechoslovakia."

"Partnerships in food aid: USAID works with many NGOs and PVOs (private voluntary organizations) to provide food for both emergency and long-term development projects."

Food for Peace Success: Afghanistan, Ethiopia, India (During the 1960s, 1970s, and 1980s, India was the largest recipient of American food aid, reaching a historic high

of \$1.5 billion worth in the 1960s), Iraq, Southern Africa drought, improving agriculture, enhancing health, reducing the impact of HIV/AIDS, increasing access to education

Looking ahead. Fifty years of Food for Peace. A full-page table with 5 columns shows: (1) Year (1954-2003). (2) Number of beneficiaries (millions). Commodity value (\$ millions). Gross value (\$ millions). U.S. agricultural exports (metric tons). Address: Washington, DC. Phone: 703-875-4901 (1991).

599. Yamasaki López, Martha Elena. 2004. Tofu [Tofu]. Madrid, Spain: Editorial Edaf. 233 p. Illust. 18 cm. Series: Vida Natural. [Spa]

• **Summary:** Contents: 1. Soybeans and soyfoods (*alimentos a base de soja*): Nutritive value of soybeans, health benefits of soybeans. 2. Tofu. 3. The balanced diet. 4. Food guide: The good dish to eat, the food pyramid, the new food pyramid (the healthy food pyramid), other food guides. 5. Tofu and food guides.

6. Cooking with tofu: Basic culinary techniques with tofu. 7. Diet, the energy value of the food and weight: Advice for a healthy diet and maintaining the ideal weight. 8. Our physique and the food: Hair, skin, and nails, brain and nervous system, bones and teeth, heart and circulatory system (cholesterol, what's important for your heart's health), hormonal system, hormonal regulators, the phytoestrogens (*fitoestrógenos*) in tofu, soybeans and hormonal replacement therapy, cardiovascular protection, osteoporosis, phytoestrogens and cancer, food allergies, lactose intolerance.

9. Nutrition throughout life: Food habits and diet, breastfeeding, soymilk as an alternative, soymilk for infants, women at the time of breastfeeding, weaning and food habits, preschool (integrating the familiar diet), growth and development, elementary school, puberty and adolescence, eating disorders (anorexia and bulimia), the ten commandments of healthy nutrition for kids and teens, adulthood, healthy lifestyle, pregnancy, climacterium / menopause, andropause (male menopause), the elderly, nutrition for the elderly, general recommendations, factors that influence the nutritional status of the elderly, evaluative questionnaire about the risk of unhealthy eating in old age, importance of sleep; tofu in light dinners for sleep, growth, and maintaining oneself, the food and mood, food and coexistence, Mexican synonyms / variants of Spanish words (*variantes léxicas mexicanas*). Address: Spain.

600. AGP—A Cooperative. 2005. Annual report to members: Adding value to your harvest. 12700 West Dodge Road, P.O. Box 2047, Omaha, Nebraska 68103-2047. 40 + 20 p. 28 cm.

• **Summary:** Net sales for 2005 (year ended Aug. 31) were \$2,349.849 million, down 11.8% from \$2,663.632 million in 2004. Earnings from continuing operations (before income taxes): \$50.656 million, up 75.0% from the \$28.941 million



in 2004.

The report begins with a 2-page list of AGP's members (as of 31 Aug. 2005). They are located in the following states (listed alphabetically): Arkansas (1). California (1). Illinois (1). Iowa (87). Kansas (23). Michigan (1). Minnesota (40). Missouri (3). Nebraska (28). North Dakota (1). Oklahoma (1). South Dakota (30). Utah (2). Wisconsin (4). Saskatchewan, Canada (1).

"Double vegetable oil refining capacity at Hastings, Nebraska plant... New product launches: Vistive low-linolenic soybean program in the U.S." (p. 5).

"Renewable fuels: In 1996, AGP became the first company in the industry to construct a methyl ester production plant that exclusively utilized soybean oil. That plant, at Sergeant Bluff, Iowa, not only produces biodiesel but also products for industrial uses such as solvents and agricultural spray adjuvants... The biodiesel industry grew from 25 million to approximately 70 million gallons this fiscal year and is expected to increase to at least 400 million gallons in the next two to three years. In part, the increase will be due to passage of the federal energy bill. New state biodiesel legislation also will have an impact. In Minnesota, for example, a new law requires that all diesel fuel sold in the state contain a two percent vegetable oil blend, known as B2. Illinois also ordered government fleets to use biodiesel beginning in 2006, and similar standards are being considered in at least seven other states.

"In light of these circumstances the AGP Board of Directors approved expansion of the Sergeants Bluff plant to more than double biodiesel capacity. The project was completed this year, giving AGP the ability to produce over 15 million gallons of biodiesel per year... AGP was the first and remains the industry leader in methyl ester and biodiesel production. AGP markets its biodiesel, branded as SoyGold, through its wholly owned subsidiary Ag Environmental Products LLC" (p. 20-21).

AGP now has European offices in: Antwerp, Belgium. Barcelona, Spain. Komarno, Slovakia. Pecs, Hungary. Address: Omaha, Nebraska. Phone: (402) 496-7809.

601. Miller, Scott; Kilman, Scott. 2005. Biotech crop battle heats up as strains mix with others: Nations seek rules to attempt to keep varieties separate; fears hurt U.S. farmers. Mr. Ballarin's tainted corn. *Wall Street Journal*. Nov. 8. p. A1, A6.

• **Summary:** When one farmer's prized traditional crops are contaminated by genetically engineered (GE) crops and that farmer suffers a financial loss, who is legally responsible for the loss? How can this "biotech contamination" be minimized or eliminated? Is coexistence of traditional and biotech crops possible? These have become major issues in many countries.

A bar chart shows the acreage of fields planted with GE crops world-wide, from 1996-2004.

602. Shurtleff, William. 2006. Thoughts and questions concerning Dutch traders, the Dutch East India Co. (VOC), soy sauce in the Dutch East Indies and the Netherlands, and the words "catchup," "catsup," "ketchup" and "ketjap" (Editorial). *SoyaScan Notes*. Jan. 15.

• **Summary:** During the 1600s and 1700s, traders and merchants of the Dutch East India Co. in Asia greatly preferred Japanese shoyu [soy sauce] to Indonesian kecap / ketchup [soy sauce]. In the 1640s, the Dutch replaced the Portuguese as the only nation allowed by Japan's ruling shoguns to trade with Japan. Dutch traders purchased Japanese shoyu from their trading post at Deshima, then filled orders for it from their many trading posts in the Dutch Indies (today's Indonesia and parts of India), where it was used to season foods. Dutch traders also sold it in India to British East India Co. traders, who shipped it back to England and on to the United States; in both these places it became quite popular—much more popular than it ever became in the Netherlands. The British had no access to Japan; the only way they could obtain Japanese soy sauce was to buy it from the Dutch East India Co. In short, the Dutch were the first foreigners to buy, sell, and use Japanese soy sauce.

It seems very surprising that, during this period, there is almost no evidence that these Dutch traders were importing any kind of soy sauce to the Netherlands.

Soy sauce was in England by 1679, when it was reported by John Locke in his journal. This is also the earliest date seen for soy sauce in Europe. It was not reported in the Netherlands until 1727; that year the German physician and traveler Engelbert Kaempfer wrote: "This *Soeju* [shoyu, or soy sauce] is exported by the Dutch, and brought even into *Holland*."

From 1641 to 1858 there was a Dutch East India Co. trading post on Deshima, an artificial island in Nagasaki harbor, Kyushu. The earliest date seen for a shipment of shoyu from Deshima by Dutch traders is 1651.

About 20 years earlier, in 1619, the Dutch built Batavia [today's Jakarta] and established a settlement on Java [part of today's Indonesia].

When the British started buying "Ketchup" from the Dutch: (1) What type of Ketchup was it? Sweet or salty. Perhaps we could find the answer by doing a careful analysis of its early imitations—mushroom, walnut, and oyster ketchup. Were they basically sweet and thick like the more modern kecap manis, or were they thinner and salty—like ketjap asin or like Japanese or Chinese soy sauce? (2) Where in the Dutch East Indies was it made? (3) At which trading post did the Dutch East India Co. sell it to the British East India Co. (4) When did the earliest known sale take place and where is it recorded? (5) In what type of containers was it packaged and shipped?

If only one VOC ship a year was allowed to export

Japanese goods (including soy sauce) from Deshima, the VOC would plan that shipment very carefully to maximize profits. Why would they want to sell the soy sauce at wholesale prices to the British East India Co.

The best way to understand what early ketchup was, is to study it together with soy sauce—not by itself, alone.

Did the VOC or the Dutch ever import soy sauce from the Dutch East Indies to the Netherlands? If so, starting when? What did they call it? Did they import different types?

When did soy sauce first appear in Holland / The Netherlands?

What were the characteristics of earliest homemade ketchup recipes in English—make a table of ingredients with date down left column. Did they tend to be sweet or salty? When salty, how was the salty flavor obtained? The savory flavor? Were any early ones fermented? Or just aged? Address: Founder and owner, Soyfoods Center, Lafayette, California. Phone: 925-283-2991.

603. Altieri, Miguel; Pengue, Walter. 2006. GM soybean: Latin America's new coloniser. *Seedling (Quarterly Newsletter of Genetic Resources Action International, Barcelona, Spain)*. Jan. p. 13-17. [17 footnotes]

• **Summary:** Contents: Introduction. Soybean deforestation. Forcing small farmers out. Soybean cultivation degrades the soil. Monocultures and ecological vulnerability. Other ecological impacts. A table titled “Global status of biotech crops in 2005,” with a world map, states: “21 countries have adopted biotech crops. In 2005, global area of biotech crops reached 90 million hectares, representing an increase of 11% from 2004, equivalent to 9 million hectares. Biotech mega-countries, with 50,000 hectares or more, are (in million ha): USA 49.8. Argentina 17.1. Brazil 9.4. Canada 5.8. China 3.3. Paraguay 1.8. India 1.3. South Africa 0.5. Uruguay 0.3. Australia 0.3. Mexico 0.1. Romania 0.1. Philippines 0.1. Spain 0.1. Those with 50,000 acres or less are Colombia, Iran, Honduras, Portugal, Germany, France, Czech Republic.

A graph shows global area (million hectares) of 4 GM crops (in descending order of acreage in 2005): Soybean, maize, cotton, canola. Address: 1. Prof. of Agroecology, Univ. of California at Berkeley; 2. Prof. of Agriculture and Ecology, Univ. of Buenos Aires, Argentina.

604. *SoyaScan Notes*. 2006. Chronology of the Dutch East India Company (VOC), 1602-1799 (Overview). Feb. 6. Compiled by William Shurtleff of Soyfoods Center.

• **Summary:** Throughout the 16th century (1500s), Portugal became fabulously wealthy from its monopoly of the spice trade in the East Indies. Like many commercial advantages of the time, this was achieved by control of sea routes, especially domination of the route to the East Indies via the Cape of Good Hope (at the southern tip of Africa).

A well-organized Protestant church movement developed in the Netherlands, and the dissatisfaction with

Catholic Spain coincided with the Protestant revolt against the Roman Catholic Church.

1566—Anti-Catholic riots spread across the Spanish Netherlands. Philip II of Spain sends his troops whose harsh actions result in open revolt.

1568—The 80-year war of independence by the Dutch against Spain begins (ended 1648).

1579—Signing of the Union / Treaty of Utrecht with Spain marks the foundation of the United Provinces. These are the 7 northern Protestant provinces of Holland, Zeeland, Utrecht, Gelderland, Groningen, Friesland, and Overijssel. The 7 provinces that joined the union would eventually become the Netherlands; the 10 southern Catholic provinces that did not would become Belgium.

1581—The Union of Utrecht (United Provinces) declare independence from Spain.

1596—Dutch merchants begin trading with Jayakarta (today's Jakarta).

1600—The Dutch ship *Liefde* is stranded in Usuki Bay, Japan; the first Dutch contact with Japan.

1600—The Honourable East India Company is established in London, Europe's first such international trading company. The Tokugawa shogunate begins in Japan.

1602 March 20—The Dutch East India Company (*Verenigde Oostindische Compagnie*, VOC—literally “United East Indies Company”) is established by Dutch merchants, when the Estates-General of the Netherlands granted it a monopoly to conduct trade, business and colonial activities in Asia. It was the world's first company to issue stocks and the first multinational corporation. The VOC eventually became the world's largest company, in existence for over 200 years. It built over 1,600 ships called East Indiamen.

The VOC consisted of 6 Chambers (*Kamers*) in Amsterdam (with 8 delegates), Middelburg (for Zeeland; 4 delegates), plus Enkhuizen, Delft, Hoorn, and Rotterdam (1 delegate each). Delegates of these chambers convened as the *Heeren XVII* (the Lords Seventeen). Because of its majority 8 delegates, the Amsterdam bloc basically decided policy. The start-up capital was 6.4 million Gulden, raised by the 8 chambers, of which 27% came from Amsterdam. This capital was raised by selling VOC stock to 1,143 subscribers.

1603 Dec. 18—The first VOC fleet of 12 ships sails under the command of Steven vander Hagen.

1605—VOC first lands in Asia. Armed Dutch merchantmen capture the Portuguese fort at Ambon (Amboyna / Amboina, a town and island in the Moluccas, in today's eastern Indonesia) and take control of the island which was the most important of the Moluccas (Spice Islands) at this time. The Portuguese had established a factory here in 1521; it was the source of their clove monopoly. This fort is developed in the VOC's first secure fort. Ambon was the headquarters of the VOC from 1610 to 1619 until the founding of Batavia (now Jakarta) by the Dutch.

1609–VOC factory (comptoir, trading post) established on site of Jacatra / Jakatra (today's Jakarta) by Dutch merchant Jan Pieterszoon Coen. Located at the far western end of the island of Java, it becomes the headquarters of the Dutch East India Company, which gradually extends control over neighboring sultanates and principalities.

1609–First VOC factory (trading post) in Japan established on the island of Hirado (Por. Firando), off Japan's southernmost island of Kyushu (northwest of Nagasaki).

1609–Twelve Years' Truce, signed in Antwerp, calls a halt to hostilities between Spain and the Seventeen Provinces.

1610–Small walled town of Paliacatta (also spelled Paliacatte; today's Pulicat) established on the east coast of southern India. It soon becomes the chief Dutch settlement and headquarters of the VOC factories on the Coromandel Coast. At its center is Fort Geldria, with its permanent garrison of Dutch soldiers, its cannon and armory to protect the various Company trading posts along the Coromandel Coast.

1612–Fort established on Ceylon (today's Sri Lanka).

1613–As early as this year, VOC leaders recognize the importance of direct trade with China. However attempts to establish a settlement on the Chinese coast in the early 1600s are not successful.

1615–Powerful Dutch merchant Isaac Le Maire tries to break the VOC monopoly on trade routes to the Indies by sailing westward through dangerous and uncharted waters around Cape Horn, the southernmost tip of South America and into the Pacific Ocean, avoiding the VOC-controlled Straits of Magellan. The ship arrived in Jakarta in Oct. 1616, to the amazement of Governor-General Jan Coen.

1616–Danish East India Company founded.

1619–The Dutch attack and destroy Jayakarta (Jakarta, Jacatra). East of the ruins they build a new coastal town, which Coen names Batavia (essentially he renamed Jayakarta). Batavia becomes the headquarters of the VOC and of Dutch colonial power in Asia for almost 350 years.

1621–Banda Islands (in today's south central Moluccas, Indonesia) conquered by the VOC, which establishes its monopoly over nutmeg and mace there.

1621–Dutch West India Company founded. In 1624 this Dutch West India company establishes a settlement in New Amsterdam (now Manhattan, New York).

1622–VOC attack on the Portuguese in Macao / Macau fails.

1624–Chinese armies drive the VOC from the Pescadores Islands. A fortified settlement on Formosa (Taiwan) becomes VOC's base for trade with China until 1662.

1633–St. Helena island in the South Atlantic Ocean becomes a supply station.

1635–The Portuguese blockade Malacca (until 1640).

1638–Goa (capital of Portuguese India) blockaded by

Dutch fleets (until 1644).

1638–Beginning of VOC's conquest of the coast of Ceylon near Kandy.

1639–The Portuguese are expelled from Japan by the shogun.

1641–The Dutch put a blockade on Melaca / Malacca (the city in today's Malaysia that controls the crucial Straits of Malacca) then seize the city from the Portuguese after 6 months. They keep this hold on Melaka for the next 150 years.

1641–The VOC trading post on Hirado (closed in 1640 by the shogun) is moved to the tiny artificial island of Deshima in Nagasaki Bay, where the men are kept as virtual prisoners (with more severe restrictions than before Shimabara Revolt and the seclusion {*sakoku*} of Japan in 1641) and allowed only one trading ship a year. The Dutch are the only Europeans allowed to trade with Japan for the next 200 years—until 1853.

1648–Treaty of Muenster ends the 80-years' war; Spain recognizes the sovereignty of the Dutch Republic, which is now the foremost commercial and maritime power in Europe, and Amsterdam is the financial center of the continent.

1651–Repeat of the war with Portugal in the Indies—in Ceylon and on the Malabar Coast of southwest India.

1652–Jan van Riebeeck establishes a supply station at Table Bay, the first European settlement near the Cape of Good Hope (on the southern tip of today's South Africa). This post later became a full-fledged Dutch colony, the Cape Colony.

1652–54–First English-Dutch sea war.

1658–Dutch replace Portuguese in Sinhalese kingdom (Ceylon) as the occupying power.

1661–Beginning of the definitive campaign (completed in 1663) to drive the Portuguese out of the Malabar Coast and to control their production of pepper.

During the 1600s (17th century), British and Dutch traders became bitter rivals in international commerce.

1662–VOC is driven out of Formosa / Taiwan by Ming Chinese troops under the command of Cheng Ch'eng-Kung, known to Europeans as Koxinga. In 1684 Manchu troops occupy Formosa.

1664–French East India Company founded.

1665–67–Second English-Dutch sea war.

1667–Dutch seize town of Macassar (Ujung Pandung) and develop trade monopoly in Makassar Strait (in today's Indonesia between East Borneo and West Sulawesi).

1667–VOC takes trading post at Achem (Aceh), the native kingdom of Sumatra.

1669–The VOC is now the richest private company the world has ever seen, with over 150 merchant ships, 40 warships, 50,000 employees, a private army of 10,000 soldiers, and a dividend payment of 40%. By now, the company is in almost constant conflict with the English.



Moreover, the VOC has now grown to become a state within a state.

1682–Dutch seize Bantam in West Java. VOC outposts were also established in Persia (today's Iran), Bengal (now Bangladesh), Siam (now Thailand), and mainland China (Canton).

Dutch policy encourages monoculture of the fine spices they controlled: Amboyna for cloves, Timor for sandalwood, the Banda Islands for mace and nutmeg, and Ceylon for cinnamon.

During the 17th century, the VOC was the most important European company in the Asia trade, and Amsterdam became Europe's most important market. It took a Dutch ship 3 to 6 months to travel from Holland to Batavia. The trip was risky, in part because of the inherent dangers of bad weather and uncertain navigation, but also because no reliable method of determining longitude was discovered until the 1770s (by John Harrison in England) and measures to prevent scurvy (carrying fresh fruit, vegetables, and sauerkraut) were not put in place until the period 1772–1795.

The 17th century has been called the Dutch Golden Age, in which Dutch trade, science, and art were among the most acclaimed in the world. This Golden Age was caused by wealth, tolerance, and a new national consciousness.

1731–The Swedish East India Company founded.

1780–1784–Fourth war between the United Provinces and England; England wins, capturing many VOC ships and imposing peace terms that enabled it to trade without hindrance from the VOC and to take over key VOC settlements in Asia. After this war, the VOC is in deep financial trouble.

1795 Jan 19–The seven provinces which have comprised the Republic of the Seven United Netherlands proclaim the *Bataafse Republiek* (Batavian Republic), rendering the Netherlands a unitary state—one country. From 1795 to 1806, the Batavian Republic designated the Netherlands as a republic modelled after the French Republic.

1799 Dec. 31–The bankrupt Dutch East India Company is nationalized, dissolved and liquidated; its huge debt of 219 million Dutch guilders and all of its property are taken over by the Dutch government.

From 1806 to 1810, the *Koninkrijk Holland* (Kingdom of Holland) is set up by Napoleon Bonaparte as a puppet kingdom governed by his brother Louis Bonaparte in order to control the Netherlands more effectively. The name of the leading province, Holland, was used for the whole country. French domination lasted until 1815 when the “United Kingdom of the Netherlands” was formed by the Congress of Vienna at the end of the Napoleonic Wars.

605. Hymowitz, Ted. 2006. Re: Why are “India Soy” and “Indian Soy” early names for soy sauce? Letter (e-mail) to William Shurtleff at Soyfoods Center, Oct. 21. 2 p.

• **Summary:** Ted's guess as to why “India Soy” or “Indian

Soy” were used as names for soy sauce is that it was imported into England by the Honourable East India Company. Remember, the EIC traded in China and what is today Southeast Asia. More importantly, “East India” covers more than India. Soy Sauce was probably picked up in Asia by British ships and transported to Calcutta. From there it was transshipped to England.

For the British, the main transshipment cities for Southeast Asia and greater India (what is now India, Pakistan, Sri Lanka, Bangladesh, Burma, Nepal, etc.) were Calcutta in the west, Madras in the south, and Bombay in the west. For the Spanish, Manila was a main transshipment city; goods were shipped from there to Acapulco and the Americas.

The name “ketchup” probably comes from the imports by the Dutch East India Company. Address: Prof. of Plant Genetics (retired), Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

606. Hymowitz, Ted. 2006. Re: Note on “India Soy” and “Indian Soy” as early names for soy sauce. Letter (e-mail) to William Shurtleff at Soyfoods Center, Oct. 31. 2 p.

• **Summary:** “Looking through gobs of historical documents it is obvious that certain cities in Asia were centers of trade within and between Asian countries and with the west.

“For example, when the Spanish started trade with the Philippines in 1560 they recorded what was brought back to Mexico. I was amazed at the stuff that came from China, Japan, etc.

“I was puzzled by the diversity of items in the Spanish trade. However, when I visited the Pescadores Islands a little snooping about solved my Manila problem. During the day the fishing boats were out fishing. However, at night they were also gone. Aha, the boats were loaded with electronics for trade with Mainland China. The fishing boats would meet with boats from mainland China somewhere mid-point between the Islands and China and exchange goods. Probably exchanges were made by family contacts.

“Manila was a trading city as was Calcutta and places in Indonesia. Thus India soy was the name given to soy that arrived from Calcutta. Obviously it was not made in Calcutta but rather was brought there via local trading ships. Thus soy sauce was shipped to Calcutta and from there transported to England. Now the Dutch had their own contacts in India, Japan and Indonesia. Thus soy sauce reached the Netherlands via the Dutch ships who transported the sauce via the Dutch East India ships. The Dutch were the main importers of ketchup since it was made in the Malaysia area where they had extensive contacts.

“Was soy sauce made in China? In 1711 Lockyer says so. But I suspect most of the stuff in international trade came from Japan via the Dutch.

“The first English factory in India was in Surat. Could very well be that Surat was or had been the transshipping

point of soy sauce to England.”

Note: This e-mail was a reply to one that Shurtleff had written Hymowitz the day before:

Not much soy sauce was made in China in the 1600s and 1700s, and several travelers in Asia from that period say that Chinese “soy” was not nearly as good as Japanese soy. The reasons were simple:

(1) The Chinese saw making soy sauce as wasteful; what were they going to do with all that residue, except feed it to pigs. So they spent little effort in trying to improve the process and the product.

(2) Chinese soy sauce, to this day, is usually made with soybeans only, and little or no grain; it is basically the same as Japanese tamari—a product with a tiny niche market in Japan and worldwide. The standard Japanese formula calls for equal parts soybeans and roasted wheat. The wheat is hydrolyzed by the koji enzymes into alcohol and many fragrant and volatile compounds, such as esters, giving Japanese shoyu a real “bouquet.”

So I ask again, where do you think the Chinese got the soy sauce that they shipped to India? China? The Dutch East Indies (they had a small base there)? Address: Prof. of Plant Genetics (retired), Dep. of Crop Sciences, Univ. of Illinois, Urbana, Illinois.

607. 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 (*purée de fèves de soya fraîches*; a thick white puree of well-soaked uncooked soybeans). 6. Okara or Unohana. 7. Curds and whey (*Caillé et petit-lait*). 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 (*Tofu frit*): Thick agé or nama agé (*Agé épais {côtelettes de tofu frit}*), ganmo or ganmodoki (*burgers de tofu frit*; incl. *hiryozu / hirosu*), agé or aburagé (*pochettes de tofu frit*; incl. “Smoked tofu,” p. 197). 10. Soymilk (*Lait de soya*). 11. Silken tofu (Kinugoshi ou tofu soyeux) (“*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 (*Tofu grillé*). 13. Frozen and dried-frozen tofu (*Tofu surgelé et tofu surgelé sèche*). 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 (*Tofu particuliers*).

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, in Europe {Germany 11, Austria 1, Belgium 2, Denmark 1, Finland 1, France 6, Ireland 1, Italy 3, Netherlands 4, Portugal 1, Spain 6, Switzerland 4, UK 9, Wales 1}, 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, 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. This is the earliest French-language document seen (Sept. 2013) that mentions soy cream cheese (p. 125),

which it calls *Fromage à la crème au tofu*. Address: Soyinfo Center, P.O. Box 234, Lafayette, California 94549 USA. Phone: 925-283-2991.

608. *SoyaScan Notes*. 2008. Xiamen (Amoy), Hokkien, and the word “ketchup” (kiô-chap) (Overview). Aug. 8. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** In 1541, European traders (mainly Portuguese) first visited Xiamen (also known as Amoy), which was China’s main port in the nineteenth century for exporting tea. As a result, the Hokkien dialect (also known as the Amoy dialect) had a major influence on how Chinese terminology was translated into English and other European languages. For example, the words “Amoy”, “tea” (tê), “ketchup” (kiô-chap), “Pekoe” (peh-hô), kowtow (khâu-thâu), and possibly Japan (Jit-pún) originated from the Hokkien.

It seems likely that the Indonesian word for soy sauce (ketjap, kecap) also originated in or around Hokkien of southeast China.

609. Uyttenhove, Chantal. 2009. Re: Lima Seasalt was being sold by 1957. Letter (e-mail) to William Shurtleff at Soyinfo Center, Jan. 27. 1 p.

• **Summary:** “Indeed, we were the exporters of Lima seasalt to the US. As far as I can remember, Eden Foods did import the salt and before that, it was Pierre Gevaert himself who had contacts with Erewhon. EdenSoy has long be produced with Lima sea salt and yes, we delivered salt to the American Miso company.

“In those days, Lima seasalt came from France, from the Isle of Noirmoutier. The so called ‘grey’ seasalt because it is/was harvested from handmade clay pans—*salières*. The gray clay interacts with the salt and thus gives it its color. Today, we still have Lima seasalt but years ago, I decided to step away from Noirmoutier salt because of some issues we had. Today, the Lima seasalt comes from South Portugal, from a company who, years ago, decided to repair and restore century-old *salinas* [salt fields] and started cultivating sea salt the old way. They have hand harvested salt, traditionally sun dried and have been rewarded as a ‘slow food company’ several times. Their ‘Fleur de sel’ is a real ‘delice.’

“The only difference: the salt is white. There is a much longer harvesting season in Portugal so that they don’t have to scrape the salt to the bottom of the salinas. And so, the salt stays pure white because it does not interact with the clay. That company in Portugal is a real beauty.” Note: Chantal encloses two color photos of the white seasalt being harvested in Portugal.

Update: Jan. 29 e-mail. “I started working for Lima in January 1985. Since Lima started in 1957, there is a lot of history before me.

“We are planning on moving to a new building at the end of this year—an ecological friendly building with the least possible footprint—so, I’m in charge to make sure we

don’t throw away the old things. I’m sitting on the first ever Lima-Tamari packaging (brown plastic bottle, actually a cosmetic bottle) and all sorts of things. There are a lot of old documents that I still have to go through. There is also a very old movie from before my time which needs to be digitalised. (When finished, I can send you that if you are interested. There is a French and a Flemish version).

“The oldest document I have referring to the sea salt is a handwritten order from 1962. So my guess is that we started with the salt even before that as we have contracts older than that. I did not go through old invoices nor do I have a price list but I’m sure we have that somewhere. Later this year, those things will ‘surface’ again.”

Follow-up e-mail from Chantal. 2009. Feb. 2. “Dear Bill, We do have a well documented history—there is the start of a book; it begins with the engagement of the father of Pierre, Edgar Gevaert, his work for world peace, first contacts with Ohsawa—and with the start of the Lima production in the kitchen and the opening of the first store to the start the company Lima. One catch: it’s all in Flemish ! I’m so sorry.

“Here it says that Pierre Gevaert made a trip to Ile de Ré in France to buy seasalt and that only later, in 1957, he bought machinery. That would mean he started even before 1957 with buying seasalt for the production of tahini and gomashio which was produced in the kitchen.

“The history is so rich Bill, that I could put my job aside and do only this. Unfortunately, that is not possible. I wish more was available in another language but then Flemish and French were the languages at the time so all the documents are in those languages.

“Should something come up during the move, of course we’ll think of you. Thank you and kindest regards, Chantal.” Address: Purchasing Manager, Hain Celestial Europe [Belgium] (formerly Lima Foods N.V.).

610. *SoyaScan Notes*. 2009. Soybean germplasm collections on the IPGRI website (Overview). May 6. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** These four spreadsheet databases were sent to Soyinfo Center by Dr. Randall Nelson, curator, USDA Soybean Germplasm Collection, Urbana, Illinois. He created the databases (which reside only on his computer) using information found at the FAO website for germplasm collections: [http://www.biodiversityinternational.org/Information\\_Sources/Germplasm\\_Data\\_bases/Germplasm\\_Collection\\_Directory/index.asp](http://www.biodiversityinternational.org/Information_Sources/Germplasm_Data_bases/Germplasm_Collection_Directory/index.asp). At the “Biodiversity Directory of Germplasm Collections Query Form,” after “Taxon” enter “Glycine max” then click “Search” at bottom of page. Wait for several minutes for results to be displayed.

(1) The 40 largest global *Glycine max* [domesticated soybean] germplasm collections—in descending order of no. of accessions in collection. (1) Institute of Crop Germplasm Resources (CAAS), China, 23,578 accessions. (2) Soybean



Germplasm Collection, USDA, USA, 18,046. (3) Asian Vegetable Research and Development Centre (AVRDC), Taiwan, 12,508. (4) Nanjing Agricultural University, China, 10,000. (5) Institute of Agroecology and Biotechnology, Ukraine, 7,000. (6) N.I. Vavilov Research Institute of Plant Industry, Russia, 6,126. (7) Centro Nacional de Pesquisa de Recursos Geneticos e Biotec. (CENARGEN), Brazil, 4,693. (8) Soybean Research Institute Jilin Academy of Agric. Sciences, China, 4,200. (9) All India Coordinated Research Project on Soybean, Govind Bal. Pant Univ., India, 4,015. (10) Centro Nacional de Pesquisa de Soja (CNPSo), EMBRAPA, Brazil, 4,000.

(11) Department of Genetic Resources I Nation. Inst. of Agrobiol. Resour. Japan, 3,741. (12) Crop Experiment Station Upland Crops Research Division, Korea, Republic of, 3,678. (13) Australian Tropical Crops Genetic Research Centre, Australia, 3,144. (14) Genebank, Inst. for Plant Genetics and Crop Plant Research (IPK), Germany, 3,063. (15) Regional Station, National Bureau of Plant Genetic Resources (NBPGR), India, 2,808. (16) Taiwan Agricultural Research Institute (TARI), Taiwan, 2,699. (17) National Research Centre for Soybean, India, 2,500. (18) Crop Breeding Institute DR & SS, Zimbabwe, 2,236. (19) Sukamandi Research Institute for Food Crops (SURIF), Indonesia 2,194. All the 2,194 *Glycine max* (cultivated soybean) accessions in this collection are from Australia, China (including Taiwan), Japan, and USA. None are apparently indigenous to Indonesia. Why? (20) Nanjing Agricultural University, China, 2,168.

(21) Instituto Agronomico de Campinas (I.A.C.), Brazil, 2,000. (22) National Plant Genetic Resources Laboratory, IPB/UPLB, Philippines, 1,764. (23) CSIRO Division of Tropical Crops and Pastures, Australia, 1,600. (24) Genetic Resources Dep.–Research Inst. for Cereals and Ind. Crops, Romania, 1,600. (25) G.I.E. Amelioration Fourragere, France, 1,582. (26) Soyabean Research Institute, Heilongjiang Academy of Agric. Sci., China, 1,558. (27) Institute of Oil Crops Research CAAS, China, 1,529. (28) Institute of Plant Breeding, College of Agriculture UPLB, Philippines, 1,508. (29) Instituto Nacional de Investig. Agricolas, Station de Iguala, Mexico, 1,500. (30) Station de Genetique et Amelioration des Plantes, INRA C.R. Montpellier, France, 1,404.

(31) Kariwano Laboratory, Tohoku Nat. Agricultural Experiment Station, Japan, 1,400. (32) Int. Institute of Tropical Agric. (IITA), Nigeria, 1,358. (33) Centro de Investigacion La Selva, (CORPOICA), Colombia, 1,219. (34) Institute of Crop Breeding and Cultivation, CAAS, China, (1,200). (35) Institute for Field and Vegetable Crops, Yugoslavia, 1,200. (36) Institute of Industrial Crops Jiangsu Academy of Agric. Sciences, China, 1,199. (37) Corporacion Colombiana de Investigacion Agropecuaria, CORPOICA, Colombia, 1,170. (38) Genebank Cereal & Oil Crops Inst. Hebei Academy of Agric. Sciences, China, 1,154. (39)

Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias (INIFAP), Mexico, 1,124. (40) Maharashtra Association for the Cultivation of Science, India, 1,081.

(2) Germplasm collections (105) that have *G. max*, *G. soja*, advanced cultivars, breeding and inbred lines, cultivars, genetic stocks, introgressed forms, landrace or traditional cultivar, mutants, wild / weedy species, or unknown. Listed alphabetically by country: Albania 1 collection. Argentina 3. Australia 3. Bolivia 1. Brazil 5. Bulgaria 1. Canada 1. Chile 1. China 15. Colombia 2. Cuba 1. Czech Republic 1. Ecuador 1. France 6. Germany 1. Hungary 2. India 8. Indonesia 3. Japan 5. Korea, Rep 1. Madagascar 1. Mexico 2. Nepal 2. Nigeria 1. Papua New 1. Paraguay 1. Peru 1. Philippines 2. Poland 1. Romania 2. Rwanda 1. Slovakia 1. South Africa 1. Spain 1. Sri Lanka 1. Sweden 1. Switzerland 1. Taiwan 3. Thailand 4. Ukraine 4. Uruguay 1. Venezuela 1. Vietnam 4. Yugoslavia 1. Zambia 1. Zimbabwe 1.

(3) The 23 largest global *Glycine soja* [wild annual soybean] germplasm collections—in descending order of no. of accessions in collection. (1) Institute of Crop Germplasm Resources (CAAS), China, 6,172 accessions. (2) Soybean Germplasm Collection, USDA, USA, 1,114. (3) Soybean Research Institute Jilin Academy of Agric. Sciences, China, 600. (4) Soyabean Research Institute, Heilongjiang Academy of Agric. Sc., China, 400. (5) Crop Experiment Station Upland Crops Research Division, Korea, Republic of, 342. (6) Asian Vegetable Research and Development Centre (AVRDC), 339. (7) N.I. Vavilov Research Institute of Plant Industry, Russia, 310. (8) Breeding Laboratory, Faculty of Agriculture, Iwate University, Japan, 151. (9) CSIRO Division of Tropical Crops and Pastures, Australia, 60. (10) Taiwan Agricultural Research Institute (TARI) Taiwan, 46. (11) Hunan Academy of Agriculture Sciences, China, 45. (12) Tieling District Agricultural Research Institute, China, 29. (13) Department of Agronomy National Chung Hsing University, Taiwan, 20. (14) Eastern Cereal & Oilseed Research Centre, Saskatoon Research Centre, Saskatchewan, Canada, 18. (15) Soyabean Breeding Laboratory, Tokachi Agric. Exp. Station, Nemuro, Hokkaido, Japan, 15. (16) Instituto Nacional de Investigaciones Forestales, Agricolas y Pecuarias (INIFAP), Mexico, 9. (17) All India Coordinated Res. Project on Soybean, Govind Bal. Plant Univ., India, 7. (18) Maharashtra Association for the Cultivation of Science, India, 6. (19) Sukamandi Research Institute for Food Crops (SURIF), Indonesia, 4. (20) Research Institute for Food Crops Biotechnology–RIFCB, Indonesia, 4. (21) Kariwano Laboratory, Tohoku Nat. Agricultural Experiment Station, Japan, 3. (22) Genebank, Inst. for Plant Genetics and Crop Plant Research (IPK), Germany, 2. (23) S.K. University of Agriculture and Technology, India, 1.

(4) Germplasm collections that have at least one wild perennial relative of the soybean (*Glycine* species, such as *Glycine clandestina*), in descending order of total number of accessions: (1) CSIRO Division of Plant Industry, Australia,

2,102. (2) USDA Soybean Germplasm Collection, USA, 919. (3) Plant Genetic Resources Unit, Agricultural Research Council, South Africa, 281. (4) CSIRO Division of Tropical Crops and Pastures, Australia, 87. (5) Asian Vegetable Research and Development Centre (AVDRC), Taiwan, 69. (6) N.I. Vavilov Research Institute of Plant Industry, Russia, 31. (7) Breeding Laboratory, Faculty of Agriculture, Iwate University, Japan, 23. (8) National Dept. of Agriculture, Dir. of Plant and Quality Control, South Africa, 23. (9) Seed Bank, Seed Conservation Sect. Royal Botanic Gardens, Kew, UK, 1.

611. Chico. 2009. Re: Testing different tempeh starters. Letter (e-mail) to William Shurtleff at Soyinfo Center, Dec. 3. 2 p.

• **Summary:** In September 2009 I got hold of some samples of different commercial tempeh starters.

One sample was given by the Belgian company that holds the website [tempeh.info](http://tempeh.info). It consists of a *Rhizopus oryzae* (rather than *Rhizopus oligosporus*) culture. This starter is being sold as not developing black spots during “regular” incubation time (i.e., up to 48 hours). Another sample was obtained from GEM Cultures in the USA.

A fellow member of the yahoo discussion group on tempeh provided me with a sample of the famous Indonesian Raprima starter that is produced by The Indonesian Institute of Sciences (LIPI–Lembaga Ilmu Pengetahuan Indonesia). Actually, he provided 2 samples: one was pure Raprima out of the bag and the other, he had cut with rice flour. Of course Raprima is already originally cut with some extender, so this person only further extended it, as he claimed that Raprima was already too strong.

Finally, the fourth sample was sold by the friendly person that runs the blog Kedai Perantauan (Overseas Store) <http://kedaiperantau.blogspot.com/>. He did not provide any details on the origin of starter, but he assured it was not Raprima.

The conditions of the trial do not, by any means, comply to any rigorous scientific experiment. The information I’m providing is to be taken at best with a pinch of salt. On top of that, the different starter providers all specify different procedures to making tempeh (temperature and incubation time differ greatly), and most important of all, specify different quantities of starter. I did my best to adjust accordingly, and since all the batches were incubated for the same time, results might not be fair and not a standard “apples with apples” comparison.

The previously cracked and dehulled and rehydrated organic soybeans were cooked for approximately 1 hour. They were split into 5 different pots and inoculated with the different starters. They were incubated on a custom-built, dedicated cabinet incubator using a thermostat.

After approximately 24 hours at 32°C, the tempeh that created the most mycelium was definitely the one from GEM

Cultures. But, it was the only one that created a lot of black spots. As we all probably know, black spots are the result of the mould having reached maturity and having reproduced sexually. There is a downside to this. I personally don’t find eating the result of fungal sexual activity “yucky,” but some people that do not know what this is, think that this tempeh is gone off and that the black spots are the presence of mould. Of course they are right, to some extent, but those people think that those moulds are external to tempeh and that they are pathogenic, and ignore the fact that tempeh in itself is a mould! Anyway, some commercial sellers avoid producing tempeh with black spots and this is the reason why Tempeh.info sell their special starter with a slower metabolism never creating black spots. And it didn’t, in our experiment. This starter also created a rich, dense mycelium. The tempeh incubated with Raprima also didn’t create black spots. The starter provided by Kedai Perantau only created very little black spots. The starter from Kedai Perantau and from Raprima created a not so dense, compact mycelium but this was, I suspect, due to the not enough starter being used. I noticed very little difference between the batches using custom-extended Raprima starter and out-of-the-bag Raprima. The further extended one produced slightly more mycelium than the other.

Having said this, let’s move to the organoleptic results.

There was a “panel” of 4 people that tasted tempeh slices marinated with garlic and tamari, toasted on a skillet with olive oil. Because we wanted to be able to identify the different tempeh batches we cooked them all one after another, so this ended up being another variable that might have affected the results. But anyway. We all seemed to agree that the best tempeh was the one inoculated with the Raprima starter. This tempeh had a more dense flavour, much richer and with different, subtle, tones. Compared to it, the tempeh made with the GEM Cultures starter seemed more bitter, and with a poorer flavour. It was nonetheless quite good, but definitely not as good as the Raprima. The tempeh made with the Belgium tempeh.info starter tasted a bit of “chicken” but that might have been due to the fact that some slices were slightly overtoasted, mimicking a roasted chicken skin. (For the record, I haven’t eaten any meat of fish for over 12 years, but others had the same impression too.) Apart from the chicken flavour, this tempeh was pretty bland, which on the good side means it was less bitter than the one from GEM Cultures. On the end of the spectrum we all seemed to agree that the tempeh made with starter provided by Kedai Perantau was the less interesting one.

It would be great to find out the exact details of each starter: strains of *Rhizopus* spp, extender dilution, if pure or mixed cultures, etc. Unfortunately this information is very hard to obtain.

Best Wishes, Chico. Address: Lisbon, Portugal.

612. American Soybean Association. 2010. History of

the American Soybean Association, 1964-1989 (Website printout-part). [www.soygrowers.com/history/default.htm](http://www.soygrowers.com/history/default.htm) Printed April 22.

• **Summary:** “1964: States began forming soybean associations affiliated with ASA to involve more farmers. ASA began funding research to find new uses for soybeans and reduce production costs.

“1968: States affiliated with ASA resolved to initiate work on state-by-state passage of legislation to enable first point of sale deduction of one-half to one cent per bushel. Farmer elected boards of soybean farmers would control funds for market development and research.

“1975: The American Soybean Association Market Development Foundation was created from the American Soybean Institute and a funding agency called the American Association Market Development Fund. The Fund’s purpose was to receive farmer checkoff funds, review market development programs and budgets, authorize ASA to conduct these activities and pay for services provided by ASA.

“1978: ASA established World Headquarters in St. Louis, Missouri.

“1980: The American Soybean Association Market Development Foundation and the American Soybean Research Foundation were merged to become the American Soybean Development Foundation.

“1984: ASA opened an office in Caracas to serve the South American market. This brought the number of ASA international offices to 11 including Brussels, Hamburg, Madrid, Mexico City, Peking, Seoul, Singapore, Taipei, Tokyo and Vienna.

“1987: ASA launched a truth-in-labeling campaign to stop hidden use of highly saturated tropical fats in foods and increase market share for soybean oil. ASA asked the Food and Drug Administration to require food manufacturers to stop calling tropical fats “vegetable oils” and to put an end to “and/or” wording on food labels. The truth-in-labeling campaign was part of a new checkoff-funded initiative to expand domestic use of soybeans and soybean products.

“1988: Exports to the Soviet Union increased from 2.5 million to 91 million bushels. Palm oil imports declined as U.S. consumers became more concerned about saturated fats in their diets, and soybean oil use increased. ASA promotions for soybean oil for dust control and for newspaper printing inks helped boost demand.

“ASA launched major Targeted Export Assistance (TEA) promotions in Europe that greatly increased consumer awareness of soybean oil.

“1989: Bold new actions by ASA farmer-leaders set the organization on a new course. After more than a year of study and discussion, Delegates approved a resolution to work toward a national soybean checkoff. Legislation to create the one-half of one percent checkoff for market promotion, research and industry education was introduced.

“ASA introduced a new SoyMark developed with funding provided by CIBA-GEIGY Corporation. Earlier in the year, ASA introduced a SoySeal developed by Monsanto Agricultural Company to mark industrial products such as soy-based inks and agricultural chemical carriers made with soybean oil.” Address: 12125 Woodcrest Executive Drive, Suite 100, St. Louis, Missouri.

613. American Soybean Association. 2010. History of the American Soybean Association, 1990-1997 (Website printout-part). [www.soygrowers.com/history/default.htm](http://www.soygrowers.com/history/default.htm) Printed April 22.

• **Summary:** 1990: Years of ASA market promotion in Eastern Europe and continuing efforts in the Soviet Union gave US soybeans an advantage. With the collapse of Communism, Romania turned to ASA for help in ordering US soybeans. In Western Europe, ASA used checkoff funds and TEA funds to implement a major consumer education campaign. European purchases of US soybeans increased 22 percent. A GATT Dispute Settlement Panel ruled in favor of US soybean farmers stating that European oilseed subsidies are unfair competition and illegal under GATT rules. ASA initiated the complaint in 1987. ASA reached an all-time high of 34,000 members.

“1991: The national soybean checkoff started. The ASA Board authorized, and state checkoff boards funded, expanded promotion in the Soviet Union including the opening of an office in Moscow. As authorized in the 1990 Farm Bill, the \$5.02 non-recourse soybean marketing loan began.

“1992: Activities were funded by the national soybean checkoff through the United Soybean Board (USB), and flourished under the direction of ASA farmer-leaders and staff. ASA created a strategic plan to tackle changes brought about by the checkoff. ASA opened a new office in Cyprus. Market Promotion Program (MPP) funds (formerly TEA) were invested to increase demand for US soybeans and products in Spain, Portugal, Greece, Germany, Venezuela and Mexico.

“1993: ASA contracted with Gordley Associates to provide Washington [DC] representation. ASA was successful in securing elimination of the two percent loan origination fee as a part of the FY 1994 budget reconciliation process.

“ASA worked with the United Soybean Board to structure and carry out national soybean checkoff-supported programs in the US and around the world. ASA became heavily involved with SoyDiesel on the legislative, research and development levels.

“ASA continued as the primary contractor with the United Soybean Board and a major cooperator with FAS on international programs. The ASA Board of Directors voted to offer health insurance to members in participating states. ASA unveiled a new logo at Soybean EXPO ‘93 in Denver



[Colorado].

“ASA expressed concern and disappointment over the resolution of the oilseed subsidy dispute with the European Community (301 case). The resulting Blair House Agreement limited the maximum area on which payments will be made to stimulate surplus oilseed production in the EC. ASA subsequently helped develop and rally support for a ‘zero-to-zero’ proposal to eliminate global tariffs and government export incentives for oilseeds and products.

“1994: ASA was instrumental in forming the American Oilseed Coalition (AOC). ASA withheld endorsement of the Uruguay Round agreement of the General Agreement on Tariffs and Trade, because the agreement, failed to correct conditions that have proven detrimental to interests of US soybean growers and allows continuation of unfair practices of other countries in oilseed trade. ASA commended the Administration for identifying elimination of trade distorting practice in the oilseeds sector as a priority in future multilateral and bilateral trade negotiations.

“The referendum to continue the national checkoff was held in February and passed—with 54% of the farmers who cast their ballots voting in favor of continuation.

“Congress approved the Vegetable Ink Printing Act that requires the federal government to use vegetable-based inks in its printing operations where technically feasible and cost-competitive with petroleum-based inks. This comes on the heels of the USDA announcement last year that required all printing ordered by USDA to employ ink derived from agricultural products.

“1995: ASA and USB leaders went to Europe to ensure compliance with the Blair House Agreement. ASA and the National Oilseed Processors Association continued to work closely with the US Trade Ambassador throughout the year. ASA and USB leaders went to China to meet with senior government and trade officials to provide encouragement to import US soybeans and soybean meal.

“+ASA leaders conveyed their support for inclusion of biodiesel in the Energy Policy Act of 1992. ASA leaders urged lawmakers to enact Farm Bill legislation designed to make soybeans more competitive and soybean producers more profitable. ASA also led successful efforts to restore funding for the Foreign Market Development (FMD) cooperator program, and to enact legislation that differentiated agricultural oils from petroleum oils.

“+Reversing several years of declining membership, the ASA recruitment campaign delivered a net membership increase of four percent. In December, the ASA Board adopted a new committee structure to more closely align itself with the structure of USB’s committees.

“+ The Stephen M. Yoder Foundation ‘Leadership for LIFE’ program was established to promote farm safety. ASA celebrated its 75th Anniversary at the Soybean EXPO in Saint Louis.

“+ASA, USB and many other soybean industry

stakeholders participated in the development and distribution of the Soybean Industry Vision. ASA was instrumental in launching the American Soybean Industry Council. 1996: ASA maintained a consistent and reasoned position on its policy objectives for the Farm Bill that included full two-way planting flexibility, an equitable soybean loan rate and an adequate safety net. ASA also continued its efforts to reform the estate tax code and obtain conservation provisions that reflect a common sense balance of producer interests and protection of natural resources and wildlife.

“+ ASA prevented an amendment to require a producer referendum on the soybean checkoff program in 1999 from being included in the Farm Bill.

“+ ASA joined the National Biodiesel Board and other interested organizations in filing a petition with the Department of Energy (DOE) requesting approval of B20 as an alternative fuel.

“+ At year-end ASA membership count was 29,799—an increase of more than 5% over 1995.

“+ The first-ever Commodity Classic was hosted by ASA and the National Corn Growers Association in Phoenix, Arizona. Nearly \$20,000 was raised to benefit The Stephen M. Yoder Foundation’s Leadership for LIFE program.

“+ ASA and the U.S. Feed Grains Council jointly contracted for representation in Vietnam. ASA also opened its Asia Subcontinent Office in New Delhi, India.

“+ The American Soybean Industry Council (ASIC), issued statements on the global acceptance of biotechnology and on the protection of intellectual properties.

+ ASA issued Grower Advisories pertaining to import clearances for soybeans grown from genetically modified seedstock in major export markets.

“1997: ASA was successful in gaining expansion of the Crop Revenue Coverage (CRC) program into 12 additional states for the 1998 crop year, which doubled the number of states eligible for CRC. ASA worked behind the scenes on enactment of tax legislation that included elimination of the alternative minimum tax; incoming averaging provisions; a reduction in the capital gains tax rates; new estate tax exclusions; and an increase in the percentage of health insurance costs deductible by self-employed persons.

“+ ASA and the National Biodiesel Board (NBB) obtained Department of Energy agreement to consider B-20 (a blend of 20 percent biodiesel made from vegetable oil and 80 percent petroleum diesel) as an approved alternative fuel.

“+ ASA implemented an aggressive international marketing program for US soybean producers. ASA wisely leveraged the almost \$16 million in soybean checkoff funds to obtain another \$9.4 million from USDA. ASA increased the size of its membership for the third year in a row. The final total was 31,525, an increase of 5.6 percent from the previous year. The ASA Today membership newsletter was redesigned into a full-color format.

“+ ASA ended FY 97 with a financial gain from

operations that exceeded the forecast. This was a reversal of the losses experienced by the Association in recent years, and was the result of a coordinated effort by ASA leaders, ASA staff, state affiliates, and other stakeholders.” Address: 12125 Woodcrest Executive Drive, Suite 100, St. Louis, Missouri.

614. Drosihn, Bernd. 2010. Tofutown.com: Network of activities. To do list for a sustainable world. Portrait [Tofutown.com: Network of activities. To do list for a sustainable world. Portrait]. Tofutown Wiesbaum, Germany: Tofutown.com. 12 p. Illust. (all color). 30 cm. [Ger]

• **Summary:** Contents: Tofu is coming: In 1980 tofu was sold in about 100 Reform Houses, Bioläden, and vegetarian restaurants in Germany. In 2010 it is sold at more than 40,000 locations in a great variety of forms. Tofutown is there: Making it easy for people to eat and drink without going through the detour of animals.

After 30 years of making tofu in Germany, all is well. Photos show an earlier and present view of the company's plant.

Brands: Viana: Listen to your heart. Veggie life. Demeter (First soya sprout drink). Soyatoo whipped soy cream. Private labels. Tofu Musick.

Marketing. To youth. Quality. Customer relations.

Protecting animals and the environment, health. We believe in food democracy. Tofuismus No. 6. “In a Tofu Body lives a Tofu Spirit.”

Tofu Fact No. 4. Four photos inside and outside the company's headquarters.

Nine website URLs and four photos. Very big numbers. Awards and prizes.

Milestones in the company's history / chronology: 1981/82–Founding of the tofu collective Soyastern, at the time the 3rd so-called “Tofurei” in Germany. In the 1970s and 1980s many small tofu projects were based on vegetarianism.

1988–Founding of Viana Naturkost GmbH on Cologne.

1990–Move to a larger building in Cologne.

1992.–Move to a former dairy in Euskirchen Kuchenheim.

1995. Expansion. 1997 Expansion.

1999–Move into a new building in Wiesbaum / Vulkaneifel.

2001. Detour to Wiesbaum.

2002–Develop the “Veggie Life” brand.

2003–Rename the company Tofutown GmbH.

2004–Development of the “Soyatoo!” brand.

2005–Major expansion of the cold storage area and the final packing area.

2007–Expansion of production.

2008–Start-up a Spaceshuttle Tofu- and Soymilk plant.

2009–Establish Tofutown North America LLC in San Francisco, California, for marketing the company's products in North America and Canada.

Note: During the years 2008 (*Inbetriebnahme*) and 2010 (Take over a modern production facility formerly owned by De-Vau-Ge Gesundkostwerk in Lüneburg) the story gets very complex, so Shurtleff writes Drosihn to please explain what it means. He kindly explains the 2010 entry in an e-mail dated 1 Nov. 2010: “I’ll try to answer your questions. It is a little Gordian [knot] and complex: De-Vau-Ge in Lüneburg is a ‘big city’ and we did take over a ‘small garage’ (a small but separate building including about 60 employees) where the home of the ‘vegetarian production’ has been situated for years. The present owners of the ‘De-Vau-Ge Dailycer Group’ (50% is owned by ‘One Private Equity’ a Chase Manhattan Bank PE Company and 50% is owned by the Seventh-day Adventist Foundation ‘MSP’) focused the company strictly to the core business ‘breakfast cereals’ and carved out everything else to spin off. (Vegetarian Products) to Tofutown, Baby Food (to Sunval Company) and so on.

Already in 2007 all the health food businesses (brands for so called ‘Reform Häuser’ and natural food stores and supermarkets) owned by De-Vau-Ge has been carved out to a daughter company named ‘Prima Vita’ and moved to ‘Heimertingen’ in the South of Germany. So they did concentrate on the health food brands (most important one is ‘Granovita,’ the other ones are ‘Eden,’ ‘Linusit,’ ‘Granovital’ and also the smaller ones ‘Martin Evers’ and ‘Bruno Fischer,’ in total maybe 10 to 15 health food brands). Nowadays also the other European businesses are consolidated into the newly developed ‘Bio Herba Group’ which is beside the ‘Prima Vita’ in Heimertingen also Granovita UK and Granovita Spain. This health food business in total is, compared to the De-Vau-Ge Dailycer Group, of almost no economic importance and is still owned by Seventh-day Adventist money. The De-Vau-Ge Dailycer Group is a competitor of the Kellogg Co. and Nestlé in breakfast cereals and makes about 500 billion Euro turnover [sales] per year. They have several locations in Europe (France, Netherlands, UK, Switzerland).

“Tofutown is still very small compared to this big business; it has two production locations in Germany (Wiesbaum and Lüneburg) and a small bureau in San Francisco.

“A complex story and this is only the short version. Good to hear that you are well and still interested in companies and soy foods and the developments on the market.

Follow-up e-mail (Nov. 2): “There is a SoyaCow (made by ProSoya) grazing and giving milk in Tofutown. Frank Daller and Raj Gupta are both very credible people in the soy market.

“Yes, you are right with the mad accountants and also with mad consultants.

“I do use Google Books and Wikipedia as you do. In my Tofugraphy there is a scene where I tried to register a ‘Tofu company’ at the city hall somewhere in the beginning

of the nineties and the two guys in the line before me tried to register a 'search engine.' Both were completely unknown and therefore nearly impossible to register. Now we have Tofu in every supermarket and we have Google on every computer." Address: Founder and president, Tofutown.com GmbH, Industrie und Gewerbe Park, D 54578 Tofutown Wiesbaum, Germany. Phone: 06593 9967-0.

615. Otsuka Pharmaceutical Co., Ltd. 2011. Otsuka to begin phased launch of Soyjoy nutritional food product (News release). Japan. Feb. 2.

• **Summary:** "Otsuka Pharmaceutical Co., Ltd. has announced that it will begin a phased launch of its Soyjoy nutritional fruit product in France, Belgium, Italy and Spain, starting in February 2011 through its subsidiary Nutrition & Sante SAS.

"For the Otsuka Group, with its two core pharmaceutical and nutraceutical businesses (NC business), the development of the NC business in Europe is an important step in its globalization efforts.

"Soyjoy, a fruit soy bar made from soy flour, is a product that could help unlock the global potential of soybeans due to their high nutritional value. The SOYJOY line up in Europe will feature seven varieties, including strawberry and blueberry which have become hits in Japan.

"Moving forward, Otsuka Pharmaceutical will first focus efforts on the success of SOYJOY in Europe by expanding sales channels in the region, followed by the strengthening of its product line up to include original items and reviewing the potential for localized production." Address: Japan.

616. Davis, John. 2011. Veganism from 1808 [chronology]. *Vegsource.com*. May 25. <http://www.vegsource.com/john-davis/veganism-from-1806.html>.

• **Summary:** "This is a brief summary of a talk I will be giving at the International Vegan Festival in Malaga, Spain, June 4-12, 2011.

"1806–Dr. William Lambe FRCP, in London, England, changed his diet at the age of 40—and gave us the first known unambiguous statement: 'My reason for objecting to every species of matter to be used as food, except the direct produce of the earth, is founded on the broad ground that no other matter is suited to the organs of man. This applies then with the same force to eggs, milk, cheese, and fish, as to flesh meat.'

"1811–John Frank Newton, a patient of Dr. Lambe, in his book 'Return to Nature' expanded Lambe's medical ideas to include ethical values towards all animals.

"1813–Percy Bysshe Shelley, poet, joined a 'vegan commune' which alternated between Newton family homes in London and Bracknell.

"1830s–Sylvester Graham, in Boston, USA, had been promoting the 'vegetable diet'—generally 'with or without' eggs/dairy. In 1837 he exchanged letters with Dr. Lambe,

and his 1839 book clearly claimed that 'without' was more effective for health.

"1830s–Dr John Snow, 'vegan' since reading Newton's book when he was 17. Moved to London in 1838 and eventually achieved fame for discovering the way in which cholera was spread. In 2003 British doctors voted him the greatest physician of all time.

"1838–James Pierrepont Greaves opened 'Alcott House Academy', a school near London run entirely consistent with the ideas proposed by Lambe and Newton. It ran for the next ten years.

"1842, April—the first confirmed use of the word 'vegetarian' in the Alcott House journal. All other early uses were by people close to Alcott House, and all using it for what we now call 'vegan'.

"1842 June–Bronson Alcott, from Boston USA, already veg\*n thanks to Sylvester Graham, visited Alcott House, named in honor of him and his earlier school in Boston. In 1843, with new English friends, he ran the short-lived 'Fruitlands' near Harvard, Massachusetts—again run on totally ethical 'vegan' principles. "1845–46–Henry David Thoreau lived by Walden Pond, near Concord MA, living solely on plant foods plus some fishing—but wrote about how much he regretted the fish.

"1846–William Horsell moved the hydrotherapy institute from Alcott House to Northwood Villa, in Ramsgate, Kent, England. This again followed Dr. Lambe's principles of plant food plus purified water.

"1847–The Vegetarian Society was founded at a meeting in Ramsgate, launched jointly by Alcott House and the (ovo-lacto) Bible Christian Church from Salford near Manchester. The compromise was to set the objective as merely 'abstaining from the flesh of animals'—and the confusion over everything else has continued ever since

"1874–Dr. Russell Trall had been running a hydrotherapy institute in New York City since 1850. This changed to exclusively plant food plus water in 1862—and in 1874 produced the first known 'vegan' cookbook.

"1887–John Harvey Kellogg privately removed eggs and dairy from his diet, though his books and sanitarium, in Battle Creek, Michigan, continued to use them. 40 years later he returned to using yogurt—but then discovered soy milk.

"1910–Rupert Wheldon in England, published 'No Animal Food', the first British 'vegan' cookbook. This was reprinted by Dr. Elmer Lee in New York. A 1910 article about Lee in the New York Times included the first known use of the phrase 'plant foods'. "1909–14–The *Vegetarian Messenger*, journal of The Vegetarian Society, carried much discussion about the use of eggs/dairy. There seemed to be a possibility of significant change, but all momentum was destroyed by the First World War.

"1931–Mahatma Gandhi spoke at a meeting of the London Vegetarian Society, making it clear that he objected to the use of milk and milk products. Such high profile



support must have emboldened the minority who called themselves ‘non-dairy vegetarians’.

“1944–Donald Watson and friends coined the word ‘vegan’ and founded The Vegan Society—the first issue of their journal [*Vegan News*, Nov.] was subtitled ‘the journal of the non-dairy vegetarians’—and made it clear that they had not wanted to separate from The Vegetarian Society, they just wanted a distinct section within it. Most retained their memberships of both societies, as many do today.

“1947–Watson was a speaker at the IVU World Veg Congress—The Vegan Society had joined IVU soon after being founded, and has been a member ever since.

“1960–The American Vegan Society was founded, joining IVU from the outset. This included a smaller group started in California as far back as 1948.

“1957–The first Indian Vegan Society joined IVU. We don’t know how long it lasted, but the new society is also prominent member.

“1960–1990s—Many new vegan organizations were formed, and the word gradually spread.

Note: Google Ngram Viewer shows that the word “vegan” started to be increasingly used in about 1970; its use sharply accelerated starting in about 1990.

“1995–Records of printed media show a significant increase in the use of the word ‘vegan’—this appears to have come from the rapid expansion of vegan websites, leading to a market for vegan books, especially recipes.

“1997–The IVU website started a recipe collection—agreed to be entirely vegan from the outset. We now have over 3,000 in English with more in other languages.

“1998–IVU agreed that all food at IVU Congresses would in future be completely vegan.

21st Century—Most veg organizations around the world now promote veganism as the ideal, regardless of whether they are called ‘vegetarian’ or ‘vegan’.

“By 2009 more books had ‘vegan’ in the title than ‘vegetarian.’

“2009/2010 surveys in the USA showed that 66% of vegetarians exclude eggs and dairy.

“By 2011 there were as many Google searches for ‘vegan’ as for ‘vegetarian.’

“22 organizations with ‘vegan’ in their title are now members of IVU

“Will all vegetarians eventually be vegan? We have no way of knowing, but the continuing trend seems inevitable.

“For more details of everything above see: [www.ivu.org/history/vegan.html](http://www.ivu.org/history/vegan.html).” Address: IVU webmaster.

617. *SoyaScan Notes*. 2011. What is ENSA—European Natural Soyfood Association? (Overview). Nov. 25. [www.ensa-eu.org](http://www.ensa-eu.org). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** ENSA, established in Jan. 2003, consists of companies of all sizes involved in the production of natural

soyfoods. This means they make soyfoods from whole soybeans that have not been genetically engineered.

As of Nov. 2011 the members (listed alphabetically) are: Alpro, Belgium. Sojasun, France. Nutrition et Soja, France. Valsoia, Italy. Liquats Vegetals, Spain. Hain Europe, Belgium. Tofutown, Germany. Mona Naturprodukte, Austria. Raisio, Finland. Grupo Leche Pascual, Spain. Life Food GmbH, Germany.

618. Mikuriya, Taro. 2011. About the Otsuka Group in Japan and Nutrition & Nature in Europe (Interview). *SoyaScan Notes*. Dec. 14. Conducted by William Shurtleff of Soyinfo Center. [Eng]

• **Summary:** For information about Nutrition & Sante in Europe go to <http://www.nutrition-sante-brands.com>. Click history and you can read the following (organized by decade):

1928–The Gerblé [Gerble] brand is created.

1934–The Céréal [Cereal] brand is created.

1972–Alain Chatillon founds Diététique & Santé (Dietetics & Health), a company affiliated to Rhône-Poulenc in 1974.

1975–Gerblé launches the first dietetic breakfast cereals.

1977–Isostar founds the first European Sports range.

1981–Diététique & Santé acquires Milical, the oldest brand of slimming foods on the market.

1982–Soy [Bernard Storup] launches the first range of Soya products.

1984–Isostar drinks launched in France.

1986–Gerblé becomes the top dietetics advertiser on national TV.

1990–Diététique & Santé becomes a subsidiary of the Sandoz group. 1993–Acquisition of Soy [Bernard Storup] and launch of a new subsidiary Nutrition & Soja.

1994–Diététique & Santé is born out of the merger of Diététique & Santé (Gerblé and Milical) with Cereal Wander Nutrition (Céréal and Isostar).

1994–N&S acquires Boribel and Boldofluorine brands.

1994–Launch of Gerlinéa, first product range of hypocaloric meal substitutes on supermarket shelves.

1996–Sandoz, shareholder in N&S, becomes Novartis.

2000–The Nutrition Observatory at Revel [France] is opened to the public.

2003–Creation of 3 N&S subsidiaries in Italy, Spain and Benelux [Belgium, Netherlands, Luxembourg].

2006–ABN Amro Capital Finance (now Abénex Capital), L Capital, and the new management team are the new shareholders of Nutrition & Santé.

2007–Milical launches a range of targeted slimming products.

2007–The Gerlinéa Nutri-Soins are THE slimming innovation in major retail outlets.

2007–The arrival of Céréal Bio revolutionises organic sales in major retail outlets.

Note: 2008 Dec. 22–The Otsuka Group (Japan) purchases Nutrition & Santé.

The organizational structure of the Otsuka Group, headquartered in Japan, is as follows. At the top of the structure, the apex group is Otsuka Holdings Co., Ltd.

Immediately below that is the Otsuka Group (which began in 1921, when Busaburo Otsuka established a factory manufacturing chemical compounds in Naruto, Tokushima Prefecture {now Otsuka Pharmaceutical Factory Inc.}).

The Otsuka Group has 3 divisions, one of which is the Otsuka Pharmaceutical Co., Ltd. Immediately below that is the Nutraceuticals Division, which has factories and sales operations on three continents: Japan, Europe, and North America. Operations in Japan are many and complex.

In Europe, the top organization is Nutrition & Santé (40 years old, with 1,100 people employed). This includes sales and marketing organizations in Iberia (Spain and Portugal, 200 people), the Benelux nations (50 people), and Italy (30 people). These organizations sell products made by Otsuka companies worldwide, including, for example, Soyjoy nutrition bars made in California by Pharmavite LLC.

Immediately below Nutrition & Santé is Nutrition & Nature (30 years old, 110 people) which has both manufacturing and sales. In Europe the main center of manufacturing and other operations is in Revel, France. Located in Revel are Nutrition & Soja [Nutrition & Nature] (29 years old, 110 employees) and CéréAlpes [Cereals] (20 employees, which was purchased in 2008 by Nutrition & Soja and is located in Mane, France—southwest of Toulouse).

Located in Castellterçol (Barcelona) Spain is Natursoy S.L. (23 years old, with 70 employees and a factory), a leader in the organic food market; it makes products from soy and wheat gluten. Natursoy was founded by Tomas Redondo and Carmen Asensio in 1988 in Castellterçol.

In the United States Otsuka owns Pharmavite LLC (founded in 1971), makers of Soyjoy nutrition bars and Nature Made vitamins, minerals, herbs and supplements. In Jan. 1989 The Otsuka Group acquired Pharmavite LLC—which according to the 2010 financial report had 961 employees. In October Pharmavite announced start of construction of a new factory and packaging facility in Opelika, Alabama. Taro says that Otsuka plans to keep the Pharmavite plant in Northridge, California, running at its present capacity. The new plant in Alabama will provide additional capacity for Pharmavite to supply the East Coast market of the USA.

In France, with Nutrition & Nature, Otsuka is trying to mainstream these products. Without changing the ingredients in the products, it has stopped marketing to only the niche bio / organic, vegetarian and vegan markets, and started to market to the much larger supermarket and chain store markets. For this, each product needs a new label. Address: B.P. 33, Z.I. de la Pomme, 31250 Revel (near Toulouse), France. Phone: +33 62 18 72 50.

619. Spots at front of book: History of soybeans and soyfoods in Spain and Portugal. 2015.

• **Summary:** (a) Map of Spain and Portugal.

620. *SoyaScan Notes*. 2015. Soyfoods historical research and writing wish list; we would strongly prefer that each of these be written in English (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1. Early history of Chinese soyfoods companies and products in America and Europe. Especially Chinese tofu manufacturers in San Francisco and Los Angeles from 1850 to 1910.

2. Statistics on soyfoods in China during the 1980s.

3. The Swedish trading mission in Canton during the 1700s and 1800s and its work with soy sauce.

4. A lengthy, scholarly history (with an extensive bibliography) of soybeans and soyfoods in China written by a Chinese.

5. A lengthy, scholarly history (with an extensive bibliography) of soybeans and soyfoods in Japan written by a Japanese.

6. A lengthy, scholarly history (with an extensive bibliography) of soybeans and soyfoods in Korea written by a Korean.

7. A history of the health foods industry in America, 1930-1980.

8. A book on mochi or how mochi came to the West, with a clear chronology of commercial mochi manufacturers in the western world.

9. A scholarly history (with an extensive bibliography) of each of the following soyfoods in Japan, written by a Japanese with a long-term involvement in the field: natto, miso, shoyu, tofu.

10. Explain why Linnaeus stated in *Hortus Cliffortianus* (1737, p. 499) that the soy bean was grown in the colony of Virginia in North America.

11. A lengthy, scholarly history (with a good bibliography) of Chinese growing and processing soybeans in California. They must have grown them between 1849 and 1899! (13 Sept. 1991)

12. Visit the best libraries and centers in Germany for doing research on soybeans and soyfoods (See #37465) and try to get missing old documents.

13. Try to document the statement that the soybean was used as a coffee substitute during the Civil War in the USA (1861-1865).

14. Use the Coker family archives in South Carolina to write a history of the company's pioneering work with the soybean.

15. A history of early experimental gardens such as those that the Portuguese developed on the Cape Verde Islands, the British at Kew, Nairobi, Singapore, and the colony of Georgia (the Trustees' Garden of Georgia, a government

experimental farm at Savannah, laid out in 1733), the Spanish (under Cortez / Cortés) in today's Mexico, etc. Did soybeans appear in any of them? When did they first appear in each?

16. Learn much more about Korean natto. Did it exist in Korea before Korea became a Japanese colony? Try to find some references, as in early studies of food in Korea. How widely was it made and used? Try to find some estimates of annual production. How was it served? What was its distribution in Korea in 1900? 1950? 2000?

17. A scholarly biography of Clifford E. Clinton of Los Angeles.

18.

5. A lengthy, scholarly history (with an extensive bibliography) of soybeans and soyfoods in the Soviet Union (USSR) written by a Russian speaker with a long and deep familiarity of the subject.

621. *SoyaScan Notes*. 2015. Early tempeh manufacturers in Europe, listed chronologically by country (Overview). Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Netherlands: ENTI 1946 April, Firma E.S. Lembekker 1959 Jan., Handelsonderneming van Dappern 1969, Firma Ergepe 1981 Jan., Jakso/Yakso 1982 Jan., Haagse Tempe Fabriek 1982, Consuma B.V. 1983, Heuschen B.V. 1986.

France: Traditions du Grain 1982 March, Athanor 1985 Oct., Les Sept Marches 1985 April.

UK: Paul's Tofu & Tempeh 1981 Jan., One World Natural Foods 1982.

Switzerland: Soy Joy 1982 April.

Belgium: De Hobbit 1982 May, Lima Foods 1986.

Austria: Natuerliche Lebensmittel, Paul Stuart Zacharowicz 1983 Sept., Sojvita Produktions 1984 June.

West Germany: Pro Natura 1985.

Spain: Zuitzo 1986.

Italy: La Finestra sul Cielo 1987 fall.

622. *SoyaScan Notes*. 2015. Chronology of soymilk worldwide–1500 A.D. to 1949. Part I. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 1500 A.D.–The earliest known written reference to soymilk appears in China in a poem titled “Ode to Tofu,” written by Su Ping

1665–Soymilk is first mentioned by a Westerner, Domingo Fernández de Navarrete, in his book *A Collection of Voyages and Travels*. Navarrete served as a Dominican missionary in China.

1790–Soymilk is mentioned by Juan de Loureiro in his book *The Flora of Cochín China*. Loureiro was a Portuguese Jesuit missionary who lived in what is now Vietnam. Note that each of these and many other early references mentioned soymilk as part of the process for making tofu.

1866–Soymilk is first discussed as a drink in its own

right by the Frenchman Paul Champion, who traveled in China. In a French-language article he stated that the Chinese had taken their cups to tofu shops to get hot soymilk, which they drank for breakfast.

1896 June–Soymilk is first referred to in the United States by Henry Trimble in the *American Journal of Pharmacy*.

1909–The first soy-based infant formulas and soymilk made from full-fat soy flour are developed in the United States by John Ruhrah, a pediatrician. He reports his results in the *Archives of Pediatrics* (July 1909).

1910–The world's first soy dairy, named *Caséo-Sojaïne*, is founded by Li Yu-ying, a Chinese citizen, biologist and engineer, at 46-48 Rue Denis Papin, Les Vallées, Colombes (near Asnières), a few miles northwest of Paris. In December 1910 he applies for the world's first soymilk patents (British Patents No. 30,275 and 30,351). The first patent is titled “Vegetable milk and its derivatives.” He is issued both patents in Feb. 1912.

1913 June 13–Li Yu-ying is issued the first U.S. soymilk patent (No. 1,064,841), titled “Method of manufacturing products from soja.” He filed the application on 10 Oct. 1911.

1917–Soymilk is being produced commercially in the U.S. by J.A. Chard Soy Products in New York City.

1929 Nov.–T.A. Van Gundy, founder of La Sierra Industries in Arlington, California, launches La Sierra Soy Milk, and becomes the first Seventh-day Adventist worldwide to make soymilk commercially. The product was canned and the beany flavor removed by live steam processing.

1931–Madison Foods of Madison, Tennessee, introduces Madison Soy Milk–the world's earliest known soymilk to be fortified with calcium and the second commercial soymilk product made by Seventh-day Adventists in the USA. Madison Foods is a company run by students and faculty within Madison College, a pioneering work/study school.

1936 Jan.–Dr. Harry W. Miller and his son, Willis, start making Vetose Soya Milk, sold in natural or chocolate flavors in sterilized half pint or quart bottles at their Vetose Nutritional Laboratories in Shanghai, China. Dr. Miller is a Seventh-day Adventist physician, a student of Dr. John Harvey Kellogg, and a medical missionary living in China. The world's first “soy dairy,” this company also made soy ice cream and Acidophilus Vetose (a cultured soya milk)–both launched in Jan. 1936. But Japan was invading China. Within months after the soy-milk business began booming, a Japanese bomb blew up the soy dairy.

1936 June–Sobee, the world's earliest known branded soy-based infant formula, is launched by the American Soya Products Corp. of Evansville, Indiana.

1939 autumn–Dr. Harry W. Miller, forced by the war in China to return to the USA, starts making soymilk at Mt. Vernon, Ohio, in a large brick plant which he and coworkers



built from the ground up. The first two products were canned liquid soymilk (made in a pressure cooker and fortified with vitamins and minerals) and malted soymilk (Soy-A-Malt). Pressure from the powerful U.S. dairy industry and the USDA convinced Miller not to call his product 'soymilk,' so he latinized the name to Soya Lac. This term was first used in late 1939 for Miller's first American soymilk.

1940 March—K.S. Lo, founder and managing director of the Hong Kong Soya Bean Products Co. Ltd. starts to make soymilk in Hong Kong. His product, originally named Vita Milk (*Wai-ta-nai* in Chinese) was fortified with calcium, cod-liver oil, and vitamins, and sold in milk bottles, primarily as a nutritious, affordable beverage for refugees. In June 1940 the product was renamed Sunspot, and in 1953 it was renamed Vitasoy. Continued.

623. *SoyaScan Notes*. 2015. Chronology of tofu worldwide—965 A.D. to 1929. Part I. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** 965 A.D.—Tofu is first mentioned in China in a document, the *Qing Yilu* (Wade-Giles: *Ch'ing I Lu*) [Anecdotes, Simple and Exotic], by Tao Ku. It states: "In the daily market were several catties of doufu. People of the region called doufu the 'vice mayor's mutton.'" It goes on to tell the story of a vice mayor named Jishu, who was so poor that he couldn't afford to buy mutton. Instead he bought a few pieces of tofu every day and ate them as a side dish with rice. Soon people in the area came to call tofu the "vice mayor's mutton." The story implies that tofu was widely consumed in China in those days and that it was less expensive than mutton.

1183 A.D.—Tofu is first mentioned in Japan in the diary of Hiroshige NAKAOMI, a Shinto priest of the shrine at Nara; the tofu was used as an offering at the shrine's altar.

1489—The word "tofu" is first written in Japan with the characters used today.

1603—The word "tofu" is first mentioned in a European-language (Portuguese) document, *Vocabulario da lingua de Iapam...* [*Vocabulary of the language of Japan*], the earliest dictionary of the Japanese language compiled by Europeans (Jesuits living in Nagasaki, Japan). Tofu is referred to as *Cabe*, *Tôfu*, or *Taufu*.

1613—The word tofu is first referred to (though indirectly) for the second time by a Westerner, Captain John Saris, in the log of his trip to Japan. He wrote "Of Cheese [probably tofu] they haue plentie. Butter they make none, neither will they eate any Milke, because they hold it to bee as bloud [blood], nor tame beasts." This is the earliest English-language document that mentions tofu in connection with Japan.

1665—Tofu is first mentioned specifically by a Westerner, Domingo Fernández de Navarrete, in his book *A Collection of Voyages and Travels*. Navarrete, who served as a Dominican missionary in China, wrote: "Before I proceed

to the next chapter, because I forgot it in the first book, I will here briefly mention the most usual, common and cheap sort of food all *China* abounds in, and which all men in that empire eat, from the emperor to the meanest *Chinese*, the emperor and great men as a dainty, the common sort as necessary sustenance. It is call'd *teu fu*, that is, paste of kidney-beans. I did not see how they made it. They draw the milk out of the kidney-beans, and turning it, make great cakes of it like cheeses, as big as a large sieve, and five or six fingers thick. All the mass is as white as the very snow, to look to nothing can be finer. It is eaten raw, but generally boil'd and dressed with herbs, fish, and other things. Alone it is insipid, but very good so dressed and excellent fry'd in butter. They have it also dry'd and smok'd, and mix'd with caraway-seeds, which is best of all. It is incredible what vast quantities of it are consum'd in *China*, and very hard to conceive there should be such abundance of kidney-beans. That *Chinese* who has *teu fu*, herbs and rice, needs no other sustenance to work; and I think there is no body but has it, because they may have a pound (which is above twenty ounces) of it any where for a half-penny. It is a great help in case of want, and is good for carriage. It has one good quality, which is, that it causes the different airs and seasons, which in that vast region vary much, to make no alteration in the body, and therefore they that travel from one province to another make use of it. *Teu fu* is one of the most remarkable things in *China*, there are many will leave pullets for it. If I am not deceiv'd, the *Chineses* of *Manila* [Philippines] make it, but no *European* eats it, which is perhaps because they have not tasted it, no more than they do fritters fry'd in oil of *Ajonjoli* [sesame seed] a very small seed they have in *Spain* and *India*, which we have not) which the *Chineses* make in that city and is an extraordinary dainty."

1704—Friar Domingo Navarrete's book is published in English. This is the earliest English-language document that mentions tofu in connection with China.

1770 Jan. 3—James Flint in Caprington writes Benjamin Franklin in London (in response to an inquiry from Franklin) a detailed description of how the "Chinese convert Callivances into Towfu" (soybeans into tofu).

1770 Jan. 11—The earliest document seen in which an American mentions tofu is a letter written by the famous Benjamin Franklin (who was in London) to John Bartram in Philadelphia, Pennsylvania. He sent Bartram some soybeans (which he called "Chinese caravances") and with them he sent "Father Navarrete's account of the universal use of a cheese made of them in China, which so excited my curiosity, that I caused enquiry to be made of Mr. [James] Flint, who lived many years there, in what manner the cheese was made, and I send you his answer. I have since learned that some runnings of salt (I suppose runnet) is put into water, when the meal is in it, to turn it to curds."

1821—The second earliest reference seen to tofu in America, and the first to be published in the USA, appeared

when A.F.M. Willich of Philadelphia mentioned it in *The Domestic Encyclopedia*. Speaking of soybeans (which he called “the seeds of the Chinese plant *Dolichos soja*”), he wrote: These *seeds* are used in China and Japan as food; they are made into a kind of jelly or curd, which is esteemed very nutritious, and which is rendered palatable by seasonings of different kinds.”

1870 Dec.—The term “Bean curd” is first used by Emil V. Bretschneider, writing in English in the *Chinese Recorder and Missionary Journal* (Foochow, p. 173). He said: “Bean-curd is one of the most important articles of food in China.” Then he gave an accurate description of how it was made.

1880—Tofu is first made in Europe by Paillieux, in France, for the Society for Acclimatization (but not on a commercial scale).

1878—The earliest tofu company in the USA, Wo Sing & Co., is in business at 708½ Dupont St. in San Francisco, making both fermented and regular tofu.

1895—Hirata & Co. in Sacramento, California, the earliest known Japanese-American company in the USA, starts making tofu.

1896 June—Tofu first appears in print in an American scientific journal (*American Journal of Pharmacy*), in an article by Henry Trimble, a pharmacist, titled “Recent Literature on the Soja Bean.”

1906—Quong Hop & Co., the oldest existing tofu maker in America today, starts making tofu in San Francisco, California.

1910—Europe’s first commercial soyfoods manufacturer, named *Caséo-Sojaïne*, is founded by Li Yu-ying, a Chinese citizen, biologist and engineer, at 46-48 Rue Denis Papin, Les Vallées, Colombes (near Asnières), a few miles northwest of Paris. By May 1911 he was making and selling tofu, and by August 1911 he had added smoked tofu, pressed tofu sheets, fermented tofu cheese (in Gruyere, Roquefort, and Camembert flavors), and soymilk.

1923—The two oldest existing Japanese-American tofu companies (House Foods & Yamauchi Inc. of Los Angeles and Aala Tofu Co. of Honolulu) are founded in Hawaii. They both began as H. Iwanaga Daufu at 1031 Aala St. in Honolulu. In 1926 the company was renamed Shoshiro Kanehori Tofu, and in 1937 Haruko Uyeda Tofu, still at the same address. In about 1939 the company was purchased by Mr. and Mrs. Shokin Yamauchi, who later renamed it Aala Tofu Co. Their son, Shoan Yamauchi, made tofu at the family company until 1946, when he went to Los Angeles, purchased the Hinode Tofu Co., and began making tofu there in 1947. After becoming Matsuda-Hinode Tofu Co. in 1963, the company was renamed House Foods & Yamauchi Inc. in 1983.

1929 Nov.—T.A. Van Gundy, a Seventh-day Adventist and founder of La Sierra Industries in Arlington, California (near Riverside), becomes the first Westerner to make tofu commercially when he introduces La Sierra Soya Cheese.

This tofu was canned and pimienta was added to prevent graying after canning. Continued.

624. *SoyaScan Questions*. 2015. Questions about the history of soybeans and soyfoods in Spain. Further research needed. Compiled by William Shurtleff of Soyinfo Center.

• **Summary:** Several sources say that soybeans were first cultivated in Spain by the Count of San Bernardo in about the year 1900. Since he was quite a famous man, his biography (or autobiography) probably exists in Spanish. A careful study of that book or books might turn up a discussion of or reference to his cultivation of the soybean.

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.



Gonzalo Rivera



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Auenland Tofu und Soja Produkte (Prien-Chiemsee, Germany). Started by Peter Wiegand in March 1982. 389

Australasia. See Oceania

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AVRDC–The World Vegetable Center. Named Asian Vegetable Research and Development Center (AVRDC) from 1971 to 2008 (Shanhua, Taiwan). 322, 380, 408, 610

Azuki Bean–Etymology of These Terms and Their Cognates/Relatives in Various Languages. 1



Azuki Bean. *Vigna angularis* (Willd.) Ohwi & H. Ohashi. Also called Adzuki, Aduki, Adsuki, Adzinki, Red Bean, Chinese Red Bean, Red Mung Bean, Small Red Bean. Japanese—Kintoki, Komame, Shōzu. Chinese—Xiaodou, Chixiaodou, Hsiao Tou [Small Bean], Ch'ih Hsiao Tou [Red Small Bean]. Former scientific names: *Phaseolus radiatus* (L.), *Dolichos angularis* (Willd.), *Phaseolus angularis* (Willd.) Wight, or *Azukia angularis* (Willd.) Ohwi. 1, 22, 32, 70, 239

Azumaya, Inc. (Started Making Tofu in 1930 in San Francisco, California). Acquired by Vitasoy on 27 May 1993. 522, 523

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Biotechnology applied to soybeans. *See* Genetic Engineering, Transgenics, Transgenic Plants and Biotechnology / Biotech

Black Bean Sauce or Black Soybean Sauce. Occasionally Called Black Bean Paste. Traditionally Made in the Kitchen by Crushing Salted, Fermented Black Soybeans, Usually with Minced Ginger, Garlic, Chilis and/or Chinese-style Wine. Typically Not a Commercial Product or Sauce. *See* Also Black Soybean Jiang (a Commercial Product). 534

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Black soybeans. *See* Soybean Seeds—Black, Soybean Seeds—Black in Color

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Blender, Electric (Kitchen Appliance)—Including Liquefier, Liquidizer, Liquifier, Osterizer, Waring Blender, Waring Blendor, Waring Mixer, Whiz-Mix, Vitamix—Early Records Only. 113

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Bowen, Samuel (1732-1777)—The Ancestors, Descendants and Close Relatives of Samuel Bowen. *See* also: Bowen, Samuel. 376

Boyer, Robert. *See* Ford, Henry

Bran, soy. *See* Fiber, Soy

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British Arkady Company Ltd. and British Arkady Holdings Ltd. (Manchester, England). Subsidiary of ADM of the USA. Including the Haldane Foods Group. 410, 491, 500, 519, 521

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Broad Bean. *Vicia faba* L., formerly *Faba vulgaris*, Mönch. Also

called Faba Bean, Fava Bean, Horse Bean. Chinese—Candou (“silkworm bean”). Japanese—Soramame. German—Ackerbohne, Saubohne or Buschbohne. French—Grosse Fève, Fève de Marais, Féverole, Faverole, Gourgame. 25, 42

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Cake or meal, soybean. *See* Soybean Meal

Calf, Lamb, or Pig Milk Replacers. 279, 334

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CanAmera Foods (Plant at Hamilton, Ontario, Canada). Includes Maple Leaf Foods. Named Central Soya of Canada Ltd. until March 1992. Named Canadian Vegetable Oil Products (CVOP; Div. of Canada Packers, Hamilton, Ontario) Before the mid-1980s. Named Canadian Vegetable Oil Processing Before 1984. 498

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Far-Mar-Co, Inc. (A Cooperative; Hutchinson, Kansas). Created on 1 June 1968 by the merger of four regional grain cooperatives including Farmers Union Cooperative Marketing Assn., which had owned the former Dannen soybean crushing plant in St. Joseph, Missouri, since Sept. 1963. Parts later sold to PMS Foods, Inc. 366

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Farmers Union Grain Terminal Association (GTA). Established in 1938 in St. Paul, Minnesota. 366, 425

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Farmland Industries, Inc. Named Consumers Cooperative Association from 1934 to 1 Sept. 1966. Declared Bankruptcy in May 2002. 366

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Fermented whole soybeans. *See* Natto, Dawa-dawa, Kinema, Thua-nao

Ferruzzi-Montedison (Italy). Purchased Central Soya Co. (USA) in Oct. 1987. European crushing operations renamed Cereol on 1 Jan. 1990. Cereol acquired by Bunge in April 2003. 308, 491, 497, 498, 508, 511, 525

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