tion. U.S. crude oil exports reached 301,000 MT in the 1980/81 market year; exports last year were 205,000 MT, and exports this year could approach that level.

Oil exports to overseas buyers frequently are few in number but large in quantity. On several occasions (Algeria, 1981; Soviet Union, 1982; Mexico, 1983 and 1986), one-third to over one-half of the total U.S. annual sunflowerseed oil exports were done within a few months. Prices were significantly affected for a short time as a consequence. Domestic demand for sunflowerseed oil was negatively affected by the uneven movement of prices.

The future holds opportunity for sunflower. The development of high-oleic varieties will enable the sunflower to compete in new and expanded food areas. The National Sunflower Association is working to remove trade barriers of tariffs and quotas and to expand consumer awareness in various countries. Positive farm-program legislation for U.S. sunflower producers appears more and more possible. Understanding of the limits and errors of past farm legislation is growing, and there is more willingness by public policy and budget decision makers to enact legislation that will result in U.S. sunflower producers being able to compete in more open and fair markets.

Every year, additional countries enter the market for sunflowerseed oil. North African and Caribbean Basin countries are turning to sunflowerseed because of the increasing price of cottonseed oil. Growing U.S. demand will result from increased consumer awareness of the high quality of sunflowerseed oil. Biotechnology research holds considerable promise for the development of new hybrids.

However, price and quality competition among oils will continue to be the major focus, despite unique uses and properties of the oils. U.S. consumer concern about tropical oils will continue to increase, which will slow domestic demand for these oils. As a result, we are confident of a bright future for sunflower production in the U.S. and abroad.

Fats & Oils News

Highlights:
PUFA and eicosanoid research

The following report on the AOCS Short Course on Polyunsaturated Fatty Acids (PUFA) and Eicosanoids, held May 14-17, 1987, in Biloxi, Mississippi was written by J. Edward Hunter of Procter & Gamble. Hunter serves as JAOCS' Associate Editor for the News for Health and Nutrition.

The AOCS Short Course on Polyunsaturated Fatty Acids (PUFA) and Eicosanoids attracted approximately 300 participants, including about 100 from outside the U.S. The program was organized and chaired by W.E.M. Lands of the University of Illinois at Chicago; it consisted of both plenary and poster presentations describing current research in cardiovascular disease, lipoproteins, immune-inflammatory disease, membrane turnover, cancer, development and new clinical aspects. There also was a special poster session highlighting test materials available for biomedical research. This report summarizes presentations from each of the sessions.

Cardiovascular disease

In regard to cardiovascular disease, the key area of interest remains the apparent ability of diets high in the omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) present in fish oils to reduce both thrombotic tendency and hypertriglyceridemia. Several presentations reviewed human epidemiological studies suggesting apparent cardiovascular benefits of consuming relatively large levels of fish and fish oils.

J. Dyerberg of Aalborg Hospital Horth, Denmark, noted that a death registry recently established for Greenland Eskimos has confirmed earlier reports that the Eskimos, whose diets are high in omega-3 fatty acids, have a lower mortality rate from coronary heart disease (CHD) than the Danes, whose diets are much lower in omega-3 fatty acids. A. Hirari of Chiba University School of Medicine, Japan, reported similarly that CHD mortality in a Japanese fishing village was much lower than in a farming village. On the other hand, residents of a Norwegian fishing village studied by A. Nordoy of University Hospital of Tromso, Norway, were found to have a higher incidence of CHD than residents of an inland farming village. In view of this inconsistency with studies of the Eskimos, Nordoy commented that high fish consumption may not explain completely the reduced CHD mortality of certain fish-eating populations. He suggested that with respect to CHD risk, the balance of total fatty acids in the diet and in the body may be more important than the intake and body levels of individual omega-3 fatty acids.

Effects of fish oil fatty acids on development of atherosclerosis, which often predisposes individuals to heart attack, remain uncertain. B. Weiner of the University of Massachusetts Medical Center reported that cod liver oil, which is low in saturated fatty acids, is antiatherogenic in swine; however, fish oils high in saturates have not

been found to be antiatherogenic in other animal species, such as rabbits. No data are yet available on the effects of fish oil in human subjects with previously established atherosclerosis; P. Weber of Harvard Medical School, Boston, Massachusetts, outlined a proposed one-year clinical trial in which possible benefits of an EPA/DHA supplement in such subjects would be addressed. In a preliminary study, H. Knapp of Vanderbilt University Medical Center, Nashville, Tennessee, noted that a fish oil supplement had a small hypotensive effect in mildly hypertensive subjects.

Lipoproteins

During this session, R. W. Wissler of the University of Chicago reported that rhesus monkeys fed diets high in fish oil (as the only dietary fat) had reduced total and low-density lipoprotein (LDL) cholesterol and reduced atherosclerotic lesions compared to animals fed similar diets high in coconut oil. T.A.B. Sanders of Queen Elizabeth College, London, noted that administering a fish oil supplement at 18 grams per day for six weeks lowered blood triglycerides in hypertriglyceridemic subjects but had little effect in lowering blood cholesterol levels. In England, fish oil is approved for use in treatment of hypertriglyceridemia. According to B. Holub of the University of Guelph, Canada, the level of EPA enrichment in the ether-containing phospholipids of human platelets after fish oil consumption is markedly greater than that in the total phospholipid or individual diacyl phospholipids; this preferential incorporation of EPA may be related to the decreased platelet aggregability associated with EPA consumption.

Immune-inflammatory disease

E. S. Cathcart of Geriatric Arthritis Center, Bedford, Massachusetts, reported that mice switched from a corn oil diet to a fish oil diet showed less severe induced arthritis than those maintained on the corn oil diet. V. E. Kelly of Brigham and Women's Hospital, Boston, indicated that in rats, a fish oil diet apparently helps reduce kidney damage induced by cyclosporin A, an immune-suppressant drug helpful in preventing rejection of organ transplants. No clinical trials have been done yet to determine if fish oil supplementation may be helpful to human transplant patients.

Another report from the same institution noted that fish oil supplementation for patients with rheumatoid arthritis resulted in reduced joint pain, perhaps in part due to inhibition of metabolic pathways that mediate inflammatory reactions. T. Terano of Chiba University School of Medicine offered preliminary data suggesting possible improvement in psoriasis as a result of EPA supplementation. D. R. Robinson, Harvard Medical School, concluded concerning these and related reports that there is no general overall anti-inflammatory effect of fish oils on autoimmune diseases, although improvement of some conditions (such as rheumatoid arthritis and psoriasis) has been noted in some instances.

Membrane turnover

N. Salem of the National Institute of Alcoholism and Alcohol Abuse indicated that ethanol exposure in animals apparently disrupts the integrity of cell membranes. Ethanol may activate lipases which, in turn, reduce the level of arachidonic acid in membranes and also may lead to loss of certain regulatory proteins in membranes. D. Hwang of Louisiana State University reported that in rats, dietary α-linolenic acid was effective in suppressing the level of arachidonic acid in plasma and lung phospholipids and subsequent synthesis of eicosanoids, but not as effective as fish oil. O. Adam of the University of Munich, West Germany, commented that aging may impair the functionality of membrane enzymes such as cyclooxygenase, thereby reducing the synthesis of prostaglandins.

Cancer

The role of dietary fat, both type and amount, in promoting development of tumors was discussed extensively during the cancer session. Early studies with animals by K.K. Carroll, University of Western Ontario, Canada, established that there is an essential fatty acid (EFA) requirement for growth of chemically induced tumors that is not satisfied by feeding animals only saturated fats such as beef tallow or coconut oil. Work by C. Ip of Roswell Park Memorial Institute, Buffalo, New York, determined the EFA requirement for maximum mammary tumorigenesis in rats treated with the carcinogen dimethylbenz(a)anthracene to be about 4.4%, by weight, of dietary linoleate. Follow-up studies by Ip indicated that the stimulation of tumors by dietary linoleate probably is not due to linoleate acting as a precursor for certain prostaglandins. Thus, while the mechanism whereby dietary linoleate may enhance tumor development remains unclear, it is possible that local prostaglandin synthesis by mammary tissue may not be an important event in controlling tumor progression.

Reports by B. S. Reddy of the American Health Foundation, Valhalla, New York, and W. T. Cave of the University of Rochester School of Medicine, Rochester, New York, indicated that diets high in fish oil as the only source of fat did not enhance the development of chemically induced colon tumors in rats compared to diets high in corn oil. Questions were raised, however, as to whether the reduced tumor formation during fish oil feeding was best explained by dietary insufficiency of linoleate or by a possible inhibitory effect of omega-3 fatty acids. T. P. O'Conner of Cornell University, Ithaca, New York, noted that diets high in fish oil and apparently adequate in EFA reduced the development of preneoplastic lesions (possible precursors of tumors) in the pancreas of rats treated with the pancreatic carcinogen L-azaserine. O'Conner commented, however, that it would be premature to make recommendations about human intake of omega-3 fatty acids for the purpose of reducing cancer risk. Currently there are no human clinical data on effects of fish oil on tumor development.

The possibility that monounsaturated fatty acids and medium chain fatty acids might inhibit tumor development was raised by a report by L. A. Cohen of the American Health Foundation. Cohen found that diets high in olive oil or medium chain triglycerides and apparently adequate in EFA reduced development of mammary tumors in rats compared to diets high in corn oil or safflower oil. How dietary polyunsaturated, monounsaturated, saturated or medium chain fatty acids might interact to affect tumor development, however, remains to be determined.

Regarding the amount of fat in the diet and its association with cancer risk, G. A. Colditz of Harvard Medical School and Brigham and Women's Hospital discussed a large-scale epidemiological study of more than 89,000 American nurses with no prior history of cancer. Over a four-year follow-up period, Colditz and colleagues found no evidence that total intake of fat (ranging from 32% of calories in the lowest quintile to 44% in the highest quintile) or consumption of specific types of fat were positively associated with risk of breast cancer. There also was no association of fish consumption with breast cancer risk. These investigators could not exclude the possibility that dietary fat levels below 30% of calories might influence the risk of breast cancer in specific subsets of the population. Nevertheless, study findings suggested that a moderate reduction in total fat intake by women is not likely to decrease the incidence of breast cancer substantially.

Development

Prolonged pregnancy and increased birth weight have been observed among residents of the Faroe Islands compared to residents of Denmark. According to S. F. Olsen of Academia Faeroensis, Faroe Island, Denmark, this may be associated with the higher intake of marine fat in the Faroe Islands. On the other hand, other factors such as better obstetrical care in Denmark could not be excluded as possible explanations for this association. Presentations by M. A. Crawford of Nuffield Laboratories of Comparative Medicine in London, H. V. Okuyama of Nagoya City University in Japan and M. Neuringer of Oregon Health Sciences University, Beaverton, Oregon, supported the essentiality of dietary α-linolenic acid in humans and animals for proper development of the brain and retina.

New clinical aspects

D. R. Robinson of Harvard Medical School found that either dietary menhaden oil or the ethyl esters of EPA or DHA appear to be protective in mice against development of the autoimmune disease lupus erythematosus, a highly fatal condition of unknown cause, with death often due to kidney disease. The apparent protective role of EPA and DHA may be related to their extensive incorporation into the ether as well as the diacyl fractions of tissue phospholipids. In a study presented by J. M. Kremer of Albany Medical College, Albany, New York, patients with rheumatoid arthritis reported improvements (e.g., reduced fatigue and reduced number of tender joints) after taking a fish oil supplement of 15 grams per day for 14 weeks. The clinical importance of these results was questioned, since it was pointed out that a small daily dose of aspirin might have had a similar effect.

Recent work by S. Renaud of INSERM, Lyon, France, has indicated that humans can convert dietary α-linolenic acid (from low erucic acid rapeseed oil added to the diet in the form of a margarine) to EPA and that this, in turn, has been found to reduce platelet aggregation, a measure of clotting tendency. The extent of conversion of α-linolenic acid to EPA by humans, however, is slow compared to the conversion by animals, and it is reduced if the intake of linoleic acid or saturated fatty acids is high. Renaud pointed out that a diet high in saturated fatty acids may predispose susceptible individuals to both thrombosis and atherosclerosis. He suggested that the effect of a diet on platelet function (e.g., platelet aggregation) may be more important with respect to CHD risk

UK approves MaxEPA pills

The United Kingdom's Ministry of Health has authorized the use of MaxEPA fish oil capsules to treat patients with hypertriglyceridemia or high risk of ischemic heart disease under the National Health Service. As this gives MaxEPA capsules drug status for therapeutic claims in these areas, prescriptions for the capsules will be filled in pharmacies in the United Kingdom (U.K.) at government expense.

As a result, Seven Seas Health Care will no longer distribute MaxEPA capsules in health food stores and outlets in the U.K. Instead, the capsules will be distributed to pharmacies by Duncan Flockart, a subsidiary of Glaxo Ltd., a major U.K. pharmaceutical company.

However, MaxEPA capsules will continue to be sold over the counter in pharmacies to anyone as a nutritional supplement. In the U.S., MaxEPA capsules are available only as a nutritional supplement; they are distributed by a number of companies in drug stores, health food stores, in mass merchandisers and through mail-order companies.

than the effect of a diet on serum cholesterol level.

A report by J. S. Charnock of Glenthorne Laboratory, Australia, indicated that in rats, a diet high in fish oil can reduce the incidence of chemically induced cardiac arrhythmias. Charnock suggested that if applicable to humans, this may help to account for the possible protective effects associated with fish oil against CHD.

Comments and conclusions

Numerous participants noted the EFA deficiency of diets used in many of the animal studies, as they provided only single dietary fats such as fish oil, beef tallow or coconut oil. The importance of providing adequate essential fatty acids and controlling for fatty acid composition in such studies was emphasized. Several participants noted that "double-blind" human studies involving fish oil supplements have not been truly double-blind, since many subjects can tell whether they are taking a fish oil or a placebo preparation as a result of belching. Using flavored capsules may help to alleviate this problem. Furthermore, investigators using fish oil diets were strongly urged to take special precautions to reduce the oxidative instability of their fish oil. Such precautions include adding an antioxidant such as tertiary-butylhydroquinone (TBHQ), flushing the oil with nitrogen, storing the oil in a freezer and analyzing the oil periodically for peroxidation.

In conclusion, there is considerable research interest in the role of polyunsaturated fatty acids, particularly those found in fish oils, in a broad spectrum of chronic diseases as well as in growth and development. Despite significant advances in recent years, much is still unknown about the role of these fatty acids in treating multifactorial diseases such as CHD and cancer. Although fish oil supplements ultimately may be shown to be beneficial for certain circumstances, most health professionals do not advocate that the general public take such supplements because their long-term effects on the body are unknown.

The published proceedings of this short course are scheduled to be available from AOCS by October.

Kraft purchase

Kraft Inc. and The Quaker Oats Co. have announced Kraft is buying the Anderson Clayton Foods Division from Quaker for $235 million in cash.

Businesses acquired by Kraft include Seven Seas salad dressings, Purity specialty cheeses, Anderson Clayton edible oil products, Chiffon margarine and Avoset, a specialized contract packer of food products. These operations had combined sales of $433 million in fiscal 1986.

"These businesses fit exceptionally well with our existing operations. They will provide Kraft with significant opportunities for improved operational efficiencies and thus greater profitability," John M. Richman, Kraft's chairman and chief executive officer, said.

William D. Smithburg, Quaker's chairman and chief executive officer, explained that Quaker's interest in acquiring Anderson Clayton during 1986 "was solely to obtain the Gaines pet food business. This sale is part of our previously announced plans to sell the other Anderson Clayton businesses."

Quaker Oats still has Anderson Clayton's domestic refineries and crushing operations up for sale.

Anderson Clayton, founded in 1904 as a cotton merchandising partnership, in 1986 sold all of its Latin American operations—Anderson Clayton S.A. in Brazil and Anderson Clayton & Co. S.A. in Mexico—to Unilever. The company then underwent a restructuring in the hopes of avoiding a buy-out, but was purchased by Quaker Oats before the end of 1986.

In other Kraft news, Ernst A. Haberli has been named to the newly created position of vice-president, Latin America and export, for Kraft Inc. International Group.

Plant closing

Cargill will permanently close its soybean processing plant in Louisville, Kentucky, by Sept. 1.

Announcing the planned closing in mid-June, Cargill said it had invested more than $1 million in capital improvements in the facility over the past two years. "But we could not overcome its inefficient size and the limited soybean meal markets in the area," Thomas D. Palmby, president of Cargill's domestic soybean processing division, said.

The plant was one of six that Cargill purchased from Ralston Purina Co. in January 1985.

According to Palmby, plans for disposing of the plant are uncertain.

"We will do our best to continue to meet our customers' needs from our other processing locations. A decision will be made in the near future on whether we will be in the Louisville market to buy and merchandise soybeans," he said.

U.S.-Soviet plan

The American Soybean Association (ASA) and the Soviet Union's Ministry of Agriculture (GOSAGROPROM) have signed an agreement of scientific and technical cooperation.

As part of the agreement, ASA and Soviet officials for the first time will work together on a swine feeding trial later this year in the Soviet Ukraine. The trial will combine Soviet-produced high moisture corn with 44% protein U.S. soybean meal. According to ASA, this combination should result in a cost-efficient, high energy ration which meets Soviet needs.

"Soviet agricultural officials acknowledge that their country has a protein meal deficiency of six to 10 million metric tons," ASA President David Haggard said, adding, "For U.S. soybean farmers, that represents a potential soybean meal market equivalent to 300-450 million bushels of soybeans."

If the feeding trial is successful, ASA hopes to work with the Soviets to increase soybean market opportunities in other areas such as technical aspects of soybean processing and further refining of soybean oil into such products as margarine and mayonnaise.

Meanwhile, in the U.S., the Iowa state legislature has affirmed the use of soybean oil as a dust suppressant in grain facilities. Legislators passed a resolution citing the importance of safe handling of grains and the demonstrated success of soybean oil in suppressing up to 94% of the grain dust in storage facilities. Legislators also urged grain and insurance industries to examine the use of soybean oil as a dust suppressant.

Japan update

The Japan Oilseed Processors Association (JOPA) has chosen Mitsuo Fukukawa as its president. Fukukawa is a president of the Nisshin Oil Mills Ltd.

His selection was made at JOPA's annual meeting in Tokyo in May. Yoji Hiraga, president of Showa Sangyo Co. Ltd., served as the previous JOPA president.

Fats and oils demand in Japan during 1986 totaled 2,896,000 tons, up 7% from 1985. Of this, vegetable oils totaled 2,020,000 tons while animal fats totaled 876,000 tons, according to figures from the Japanese Ministry of Agriculture, Forestries and Fisheries.

Fats and oils exports, meanwhile, totaled 256,000 tons, up 6% from 1985, with fish oils making up the greatest share. In domestic use, 2,129,000 tons, up 5% from 1985, went for edible purposes, with vegetable oils and fats representing 84% of edible use.

Japan's total gift market in 1985 was 8,027 billion yen. Seasons' greeting gifts were 64% of the market, and edible oil gifts were 1%, representing purchases worth 80 billion yen.

The Japan Oil Chemists' Society noted that due to consumer awareness about nutrition, consumption of linoleic oils such as corn, sunflowerseed and safflowerseed oils is increasing.

Two Japanese companies—Nisshin Oil Mills Ltd. and Fuji Oil Co.—have noted that their net sales during fiscal 1986 decreased due to appreciation of the yen compared to the U.S. dollar, yet net income increased. Nisshin noted net sales of 121 billion yen (US $865 million), or 73% of those in 1985, but net income increased by 2.9 billion yen (US $20 million), or 120% of that in 1985. Meanwhile, Fuji had net sales decreasing to 72.8 million yen (US $520 million, and 79% of those in 1985) while net income increased by 3.3 million yen (US $23 million), which is 118% that of 1985.

Nigerian group

The Nigerian Soybean Association (NSA) was formed earlier this year at a meeting at the Ahmadu Bello University in Zaria, Nigeria.

Goals and objectives of NSA are to:

- promote production of high quality soybeans in Nigeria
- make available quality soybean products to consumers at a reasonable price
- provide a forum for discussing common problems in production, marketing and utilization
- encourage and support relevant scientific research in soybean production, harvesting technology and utilization
- promote the use of soybeans in the prevention and treatment of protein malnutrition, particularly in infants
- provide to its members current information on markets and new developments in soybean production and processing
- provide united advice to government on issues and policies involving soybeans
- seek and promote internal and external markets for soybeans and soybean products.

The association is managed by a 10-member board of directors representing oil mills, feed mills, food processors, large-scale commercial producers, scientists, health and charitable workers, seed companies, soybean merchants and traders, small-scale farmers and government organizations.

Alhaj Iro Garba of the Funtua Cotton Crushing Co. is the current chairman of NSA, while Peter Dyekan of the Institute of Agricultural Research and Training is secretary.

NSA's next annual conference is Feb. 1-3, 1988. For information about the NSA, contact the Secretary, Nigerian Soybean Association, Institute of Agricultural Research and Training, P.M.B. 5029, Moor Plantation, Ibadan, Nigeria.

Research briefs

Researchers at Southern Illinois University (SIU) believe they can produce beef with the health benefits of seafood by incorporating fish oil into the red meat, according to a story published in the *Washington*

Post. "The key is fatty acid found in fish oil and credited with preventing clogged arteries that can lead to heart attacks," according to Anthony Young, a professor of animal industries.

In their research, SIU scientists injected fish oil directly into the stomachs of cattle for 60 days, then slaughtered the animals and found the beneficial fatty acid in the meat.

Meanwhile, research at the U.S. Department of Agriculture's Northern Regional Research Center has resulted in isolating iron II, a more digestible form of the nutrient normally found in animal-derived food, from soybean hulls.

USDA biochemist Joseph A. Laslo said it is the first time iron II has been found in high fiber plant products; such a discovery could lead to the commercial use of soybean hulls to fortify bread and other baked products.

At UCLA School of Medicine's Department of Biological Chemistry, researchers have been using a fatty acid provided by Capital City Products Co.'s chemical specialties division in an effort to duplicate rat's milk. According to Capital City's *NewsCap* newsletter, tests show that the fatty acid, glycerol tri-ester, when combined with other ingredients did produce a simulated milk with fat content similar to rat's milk. In addition, findings showed it could be helpful in producing a substance similar to whale's milk.

NewsCap noted that future use of fatty acids like glycerol tri-ester could have great impact on animal studies in laboratories, medical and scientific institutions and in zoos that need help to revive or raise baby animals.

Canola venture

Calgene Inc. of the U.S. and L. Daehnfeldt A.S., a Danish seed company, have entered an agreement to develop and commercialize edible rapeseed varieties known as canola.

Under the arrangement, Calgene has exclusive U.S. marketing rights to Daehnfeldt's winter canola variety, Viking. Provisions include research collaboration aimed at developing new winter varieties for the U.S.

Commercialization of the Viking variety will begin in the 1987-88 growing season, according to Roger Salquist, Calgene's president and chief executive officer. He said a comprehensive breeding program to develop new winter varieties has been initiated, with field trials under way in the U.S.

"This agreement is another key step in establishing our leadership role in the expanding U.S. canola planting seed market," Salquist said.

Calgene officials said they are working to establish relationships with major oilseed processors to further facilitate marketing of the canola crop. In addition, Calgene is funding agronomic studies at Arkansas State University, Mississippi State University and the University of Tennessee to further refine growing practices.

Calgene said it expects the Viking seed will be used in the Pacific Northwest, South and Mid-South.

In other projects, Calgene has initiated field trials with phenmedipham-tolerant canola plants in Canada. The company's field trials with an herbicide-tolerant variety of Westar, the most widely planted canola variety in Canada, were undertaken in Manitoba.

R&D agreement

Central Soya Co. Inc. has signed a joint research and product development agreement with Bio Techniques Laboratories Inc., a West Coast biotechnology company based in Redmond, Washington.

Under the multimillion dollar agreement, Central Soya will fund and direct research at Bio Techniques Laboratories. Steven N. Haye, formerly manager of Central Soya of Canada Ltd., has been named general manager.

"Existing products offered by Bio Techniques Laboratories have only scratched the surface of the possibilities. We believe there are lots of opportunities ahead," David H. Swanson, president and chief executive officer of Central Soya said, adding, "This agreement offers us a 'window' on developments in biotechnology and is a part of our technological base for the future. We don't believe that it's possible to sit on the fence in the area of biotechnology. It's necessary to make a real commitment, and we'll be pursuing this opportunity very aggressively."

Bio Techniques Laboratories was founded in 1983 by William D. St. John, currently chairman and chief executive officer. The company employs about 40 people in a 26,000-square-foot facility in Redmond, near Seattle. The company has an industrial-scale fermentation facility producing commercial volumes of microorganisms and chemicals.

In other developments Central Soya is undertaking a multimillion dollar expansion of its soy protein business. The project, at the firm's Gibson City, Illinois, plant, will increase the company's capacity to produce traditional soy protein concentrates by 25%. The expanded facility is expected to be in operation by March 1988.

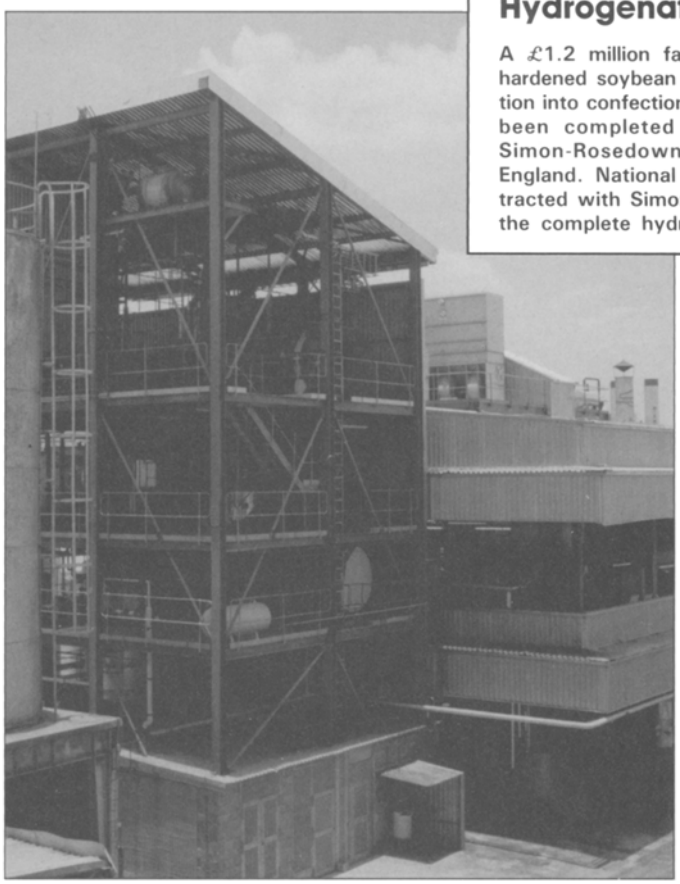
Tank cleaning

Stolt Transportation Services Pte. Ltd. of Singapore has opened a tank-container cleaning and service station in Singapore. The new facility cleans, repairs and stores intermodal tank containers and over-the-road tank trucks used in liquid transportation in Southeast Asia.

The project was built by Stolt-Nielsen and coordinated through the Singapore Economic Development Board offices in Singapore and New York. The station has four tank wash bay stations, a repair workshop and 65,000 square feet for container storage.

Sungene patents

Sungene Technologies Corp. has received three patents for its advanced biotechnology processes to produce improved lines of sunflower plants from cell and tissue culture.



Hydrogenation plant

A £1.2 million facility to produce hardened soybean oil for incorporation into confectionary products has been completed in Trinidad by Simon-Rosedowns Ltd. of Hull, England. National Flour Mills contracted with Simon-Rosedowns for the complete hydrogenation plant.

Sungene's patented processes result in sunflowerseed having oil containing more than 95% oleic acid, using one process, or more than 80% linoleic acid, by using an alternative process. High composition of other fatty acids and other commercially useful traits also can be induced, the company said, reporting successful field testing of the new products. The company said plans are under way for production and commercial development.

U.S. Patent 4,670,391 is for a general method for the regeneration of sunflowers both from immature embryos and other tissues. The other two patents—U.S. Patents 4,670,392 and 4,673,648—are for separate methods to obtain sunflower plants from embryos and other plant parts.

In other company news, Sungene has appointed Andrew S. Wang director of cell biology and Terrence J. Andreasen director of biochemistry. Wang will direct Sungene's cell and tissue culture research and development programs in corn, rapeseed, soybean, sunflower and other crops. Andreasen will direct research programs in protein, carbohydrate, lipid and analytical biochemistry. Also, Philip Filner has been named director of molecular biology for Sungene.

Reorganization

Continental Grain Co. has elected Edmund P. Karam as group president of its newly formed General Commodities Group and corporate senior vice-president.

Karam, who had been senior vice-president and general manager of Continental's North American Grain Division since 1980, now oversees the company's Rice Division, ContiCotton Division and ContiChem Inc. John Zick succeeds Karam as senior vice-president and general manager of the North American Grain Division. Meanwhile, Paul Krug, formerly vice-president of facilities of the Chicago region, has been named to succeed Zick as vice-president and general manager of the Chicago region.

According to Continental, formation of the General Commodities Group completes the development of its group organization structure. Its five other groups are World Grain, World Oilseeds, World Milling Industries, World Meat Industries and Financial Services.

Also, Continental Grain Co. has named Gerald P. Lepp as director of arbitration in its World Grain Group, New York.

P&G revamping

The Procter & Gamble Co. in Cincinnati, Ohio, has announced an $800-million restructuring plan aimed at consolidating its facilities worldwide. Under the restructuring, the company's plants will focus on single products and families of products to increase efficiency and cut manufacturing costs.

As part of the move, P&G has closed three of its 12 operations for producing synthetic laundry granules—at Kansas City (Kansas), Baltimore (Maryland) and Chicago (Illinois)—and has reduced the number of locations producing shortening and cooking oil to three, from seven. Facilities still producing shortening and/or cooking oils are the Ivorydale shortening and oils facility in Cincinnati; a Jackson, Tennessee facility producing just oils, and a shortening plant in Dallas, Texas. Shortening and/or oils operations closed are in Long Beach, California; Chicago; Port Ivory (Staten Island, New York); and Macon, Georgia. P&G also has announced plans to gradually phase out all operations at its Long Beach facilities by October 1988.

In closing certain operations, P&G, however, said "relatively few" of its 120 facilities worldwide would be closed in the restructuring. Three plant closings—the Cincinnati health and personal care products plant, an Omaha, Nebraska, baking

mix plant and the Green Bay, Wisconsin, pulp mill—have been announced.

Aflatoxin group

The Philippine Coconut Authority has created an aflatoxin committee whose main function is to coordinate work to control aflatoxin in coconut products. The committee is chaired by Fritz Germperle Jr.

According to a report in *The Cocomunity* newsletter, the committee at its first meeting studied recommendations on the problem made earlier by the United Coconut Association of the Philippines (UCAP) aflatoxin committee. The UCAP committee had recommended that national trading of copra be limited to copra with no more than 10% moisture content.

Jojoba venture

Desert King Corp. and JMC Technologies (the Jojoba Marketing Cooperative) have formed Desert King-JMC Ltd., a joint venture specifically to market jojoba products.

Desert King, a processor and marketer of jojoba based in Chula Vista, California, recently completed an expansion and modernization of its processing facilities. In addition to cold-pressing operations, it has brought the jojoba industry's first solvent extraction facility onstream. JMC, of Phoenix, Arizona, represents members who are farming over 12,000 acres of jojoba.

News briefs

The Asian and Pacific Coconut Community (APCC) Secretariat, Jakarta, Indonesia, now has telex equipment. Its telex number is 62863 APCC IA.

The Soyfoods Association of America has reelected the following persons to serve two-year terms on its board of directors: **Gary Barat**, Legume; **Ron Ishida**, Azumaya; **Robert Tepper**, Barricini Foods; **Tom Timmins**, Tomsun Foods International; and **Dan Burke**, Pacific Soybean & Grain. Barat is also association president.

Richard R. Hahn, vice-president for corporate research and development, technical operations, for **A.E. Staley Manufacturing Co.** has retired after 20 years with Staley. Hahn, who was Staley's corporate representative to AOCS for a number of years, joined AOCS in 1959. Since retiring, Hahn has joined the University of Illinois faculty at Champaign-Urbana to work part-time in agricultural administration for the university-sponsored research program. He also plans to set up a consultancy in agricultural processing and agribusiness technology from his home at 1260 Finley Ct., Mt. Zion, IL 62549. And if that isn't enough to keep him busy, he's also president-elect of the American Association of Cereal Chemists.

T. J. Sheahan has been appointed vice-president of marketing at **Lubrizol Corp.**

Roger Sinram has been promoted to research chemist for food research and development in **A. E. Staley Manufacturing Co.'s** technical operations. Meanwhile, **Robert Aleksejczyk** has been promoted to senior research chemist for chemicals from carbohydrates research and development for **Horizon Chemical.** Both are AOCS members. AOCS member **Ogden C. Johnson,** senior vice-president of **Hershey Foods Corp.**, has been elected a Fellow of the Institute of Food Technologists. Also, **John M. Pietruski,** chairman and chief executive officer of Sterling Drug Inc., has been elected to the board of directors of **Hershey Foods Corp.**

Canada Packers has purchased Alberta Wheat Pool's **Alberta Food Products** canola crushing plant in Fort Saskatchewan, Canada.

Cacoja in Issenheim, France, has created an automated factory producing soymilk and tofu, to be distributed in packs of 1 liter or 1/2 liter for dietetic markets. Cacoja plans to produce one million liters during 1987.

Firmenich Inc. has named **John E. Baranowski** director of flavor creation, **Nancy A. Chumney** director of flavor applications and **Tony Gilkes** account manager.

Ralston Purina Co. has merged its consumer food products division into a single organizational unit called the **Branded Foods Group.** The new division includes Ralston cereals, Van Camp Sea Food Co., Bremner Biscuit Co., Ralston Purina's Canadian Consumer Products operation, Ry-Krisp crackers, Chex Snack Mix, hot cereals and its food-service operations. **W. Patrick McGinnis,** a **Ralston Purina Co.** corporate vice-president, has been named president of the newly formed branded foods group.

Sanford A. Miller, director of the Food and Drug Administration's Center for Food Safety and Applied Nutrition, was to leave the agency July 15 to become dean of the graduate school of biomedical sciences at the University of Texas Medical Center, San Antonio, Texas.

Richard E. Bailey has been named to the newly created position of vice-president and director of production-processing for **Kraft Inc.'s** operations and technology group. As such, he is responsible for all production, processing, manufacturing and operations quality control for the group.

ConAgra Inc., an Omaha, Nebraska-based agribusiness firm, announced in June it had signed a letter of intent to purchase 50% of **Swift Independent Holding Corp.** of Dallas, Texas, for an undisclosed amount. ConAgra officials said a final agreement probably would include a provision for purchasing the entire Swift Operation within four years.

W. R. Grace & Co., a New York diversified firm, and **S&W Berisford PLC,** a British food and commodity

conglomerate, have agreed to merge their cocoa businesses to form a venture with annual sales in excess of $700 million. Grace will own 68.4% and manage the combined companies, while Berisford will control 31.6%. Grace's cocoa operations include Cacao de Zaan B.V. in the Netherlands, De Zaan Far East Pte. Ltd. in Singapore and the Ambrosia Chocolate Co. in the U.S. Berisford's cocoa operations are Berisford Cacao Nederlands BV in the Netherlands and Kascho Kakao-und Schokolandenwerke GmbH in Berlin.

Robert Siegmund has been appointed vice-president and general manager of **Ciba-Geigy Corp.**'s composite materials department.

Kosaku Yasuda, formerly a member of the board of directors for **Nisshin Oil Mills Ltd.** in Tokyo, has resigned his position and is currently the executive director of the **Japan Association of Fats and Oils Inspection Institute.** He did postdoctoral work under Stephen S. Chang and had been employed by Nisshin Oil Mills since his return to Japan in 1965.

Richard A. Coonrod, a commodities executive with 30 years' experience in food production and related agribusiness, has been named to the board of directors of **Zapata Haynie Corp.** Coonrod currently is president of Coonrod Agriproduction Corp. and chairman and chief executive officer of Terra Agribusiness Inc., both of Minneapolis, Minnesota.

H. John Greeniaus, who has served as executive vice-president of **Nabisco Brands Inc.** and president of **International Nabisco Brands,** has been named president and chief executive officer of **Nabisco Brands Inc.** Also, **Charles J. Chapman** has been named to the new position of president of **Nabisco Brands North America** while **Peter N. Rogers** will succeed Greeniaus as president of **International Brands USA.**

Obituaries

FRANK G. SHEA

Frank G. Shea of Silver Spring, Maryland, died June 9, 1987. Seventy-nine-year-old Shea had been a member of AOCS since 1948 and was one of the founders of the society's Northeast Section.

Shea was active in fats and oils processing for more than 50 years. He graduated from Roman Catholic High School for Boys in 1924, at the age of 16. His first job was as a lab assistant for C. F. Simonin's Sons Inc., where he was employed for 50 years. By the age of 19, he was named refinery superintendent.

During World War II, Shea helped build gasoline pipelines across Europe as U.S. forces advanced. After the war, he returned to Simonin's. When he joined AOCS, he was a plant superintendent for the firm. He officially retired in the early 1970s to help care for his ailing wife. After she died, he went to live with his son and family in Silver Spring.

Shea remained active, including service on Meetings Logistics and National Meeting committees for AOCS. He was exhibits chairman for the ASF/AOCS World Congress held in 1980 in New York—the seventh time he had performed that role for a national AOCS meeting and the eighth time he had served on a national meeting committee.

He received the Northeast Section's Professional Service Award in 1976 and was the 1979 AOCS Award of Merit recipient.

Survivors include Shea's son, Terence, and family in Silver Spring.

DANIEL MELNICK

AOCS has been informed of the death of AOCS emeritus member Daniel Melnick, 76, of Teaneck, New Jersey, on Oct. 20, 1986.

Melnick joined the society in 1949 when he was chief technologist for Best Foods Inc. in Bayonne, New Jersey. He received a doctorate from Yale University in 1936 and was a Yale Fellow during 1936-37 and a University of Michigan Fellow during 1937-40. He served as superintendent of research for Food Research Labs from 1940 to 1947 and was chief of the Food Development Division, Quartermaster Corps, in Chicago, during 1947-49. He then went on to work for Best Foods. After Best Foods merged with CPC, Melnick served as director of research for CPC International and as a vice president. He was author of numerous scientific papers and patents.

After Melnick retired from CPC, he was an adjunct professor of chemistry at Florida Atlantic University, Boca Raton, Florida. He also served as a consultant on food and nutrition. He resided in Boca Raton during the winter months and in Teaneck for the remainder of the year.

He is survived by his wife, Alice; three children, Edward, Ronald and Marjorie; and six grandchildren.