THE FOUR CORNERS . . .

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Argentina . . . . . Nolly Sirkis

Crops

The following is a brief report about the prospects of 1968–69 crops in Argentina.

Sunflower

The Agriculture Department estimates that the sown area is about 1.360.000 hectares, and figures out a crop of about 1.000.000/1.100.000 metric tons. Last year the sown area was 1.200.000 hectares and yielded a crop of 940.000 metric tons.

An important part of sunflower seed is sown over stubbles of the wheat harvest, this depending on climatic conditions during autumn.

If these conditions are favorable and predictions come true, this will mean an increase of 10% compared to the crop of 1967–68, 30% compared to the average of the last 5 years and 42% compared to the average of the last 10 years.

Based on the above-mentioned figures, there will remain an exportable surplus of over 50.000 metric tons in 1969.

Peanut

The peanut crop for 1969 is estimated at about 250.000 metric tons (unshelled). Deducting other uses, the seed will yield about 65.000 metric tons of oil, about 90% of which will probably be destined for export.

Cotton

As a result of the higher prices paid to the producers, this year the crop will reach an increase of about 25% over last year, allowing a production of about 20.000 tons of oil.

Flax

Estimated figures for 1969 are 500.000/550.000 metric tons; deducting the necessary seed for the sowing, there will be an estimated oil production of 140.000 metric tons.

Soybean

An increase of about 10.000 tons compared to the crop of last year, (20.000 metric tons) is expected.

Safflower

No important changes have taken place, the crop remaining at insignificant level.

Meetings

The Third Symposium of the Oil Industry, organized as usual by the School of Chemical Engineering of the University of Santa Fé, took place May 8–10, 1969, in Buenos Aires.

The program included the following sessions:

Technological Session: (a) Hydrogenation; (b) New technologies and their application for oil and by-products; and (c) Varieties of seeds with higher fat content. Food Chemistry Session: (a) Influence of technological treatments, especially thermical, on the composition and biological value of edible fats and oils; and (b) Identification and standardization of edible oils. Economic Session: (a) Local trade and production, raw materials, finished products and by-products; (b) Taxes on Production; (c) International trade of oils and by-products; (d) Investigation of the local market—traditional products and their possibilities and new products of the oil industry; and (e) Data and statistics.

New Governing Board for IAGA

A new governing board of the Argentine Institute of Fats and Oils (IAGA) took office last November. Dr. R. Antonissen (Molinos Rio de la Plata) is the new president, Dr. P. Cattaneo (University of Buenos Aires) vice-president, Ing. B. Ciaburri (IRAM) secretary and Sr. J. Estevez (Sharples) treasurer.

At the beginning of this year this Institute inaugurated its new laboratory in the Otto Krause Technological School. Besides research work, specialized analysis in the field of fats and oils is carried out in the Laboratory. Specialized technical staff is also being trained by IASA in the new Laboratory. From May to September 1969 there will be a IAGA-organized theoretical-practical course for fats and oils analysts.

Miscellaneous

—The Federacion Argentina de Cooperativas Agrarias established an award for the best local research work in the development of proteins for human consumption from oil industry by-products.

—The Belgian De Smet Company opened a branch in Argentina in order to make locally their vegetable oil industry equipments.

—Neill Malcolm Argentina S.A. will have the representation and will construct in Argentina the plants of Lurgi Gesselschaft für Warme and Chemotechnik (Germany).

—Molinos Rio de la Plata, started construction of a new plant in Avellaneda (Province of Buenos Aires) for production and refining of vegetable oils. The capacity will be 800 metric tons per day of sunflower seed and will begin operation from the beginning of 1972.

—Mr. Ben Braae (Alfa Laval-Sweden) visited Argentina last November and gave a talk about the most recent progress achieved in fats and oils refining and soap manufacturing.

Australia . . . . . Jim Allan

Fats & Oils in Australia

The difficulty of corresponding on such a broad subject as Fats and Oils is to divorce oneself from one's own particular sphere of interest and highlight the most important aspects of this extensive field. Nevertheless, there is probably little doubt that the three most topical items currently affecting the industry in Australia are: (a) A severe drought in Queensland. (b) World prices of vegetable oils. (c) The butter vs. margarine controversy.

While even these brief phrases will convey a wealth of meaning to all with fats and oils experience their exact

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significance requires some knowledge of the industry's peculiarities here "down-under." Having little influence on the worldwide situation Australia's fats and oils position would not loom large in world reviews. The following attempt to draw a thumb-nail sketch is offered to assist in appreciating future correspondence on developments in Australia.

Earlier History

Prior to World War II, Australia had virtually no local source of vegetable oils. Being historically a beef and dairy cattle producer tallow was freely available and exported in significant quantities.

End uses for fats and oils developed from an early period; typically soaps, fatty acids, margarine and paints. Local production of vegetable oil from imported seeds commenced in the early 1900s (an early solvent extraction plant was commissioned in 1923).

Later, small quantities of peanuts were available for oil production (as culls from edible nuts) and a cotton industry on a small scale gave rise to cottonseed oil production.

However, Australia was primarily an agricultural country at this stage and dairying and butter production were significant factors in the economy. Margarine production was restricted in each State by local legislation.

Development of an indigenous oilseeds industry was restricted by the limited market due partly to the margarine legislation, the fact that existing varieties of oilseeds introduced from overseas did not adapt readily to Australian conditions, and a plentiful supply of cheap tallow and edible dripping.

Raw Material

Growth of an Australian oilseed industry commenced soon after World War II with the local production of flaxseed. As a war-time measure significant acreages of flax were grown for fibre. This was no longer economic under peace-time conditions, but the experience gained led to the production of commercial quantities of linseed. Growth was slow, but by the early 60s Australia was self-sufficient in linseed. Recently two years of drought has resulted in importation of seed and oil to supplement local production. Local demand is estimated at 30,000 tons of seed.

Establishment of cotton-growing in N.S.W. in 1960 resulted in rapid growth until today Australia is practically self-sufficient in cotton (except for certain special grades). This of course has resulted in the availability of cottonseed; conversion of existing crushing plants and establishment of additional facilities proceeding in line with the growth of cotton growing and ginning facilities. Current availability of grey seed is estimated at 44,000 tons.

Increased demand for safflower for non-yellowing paints and polyunsaturated edible products accelerated research into suitable varieties and areas for local production. The significant increase in local production dates from about 1962. Peak local production was in 1966–67 at 24,000 tons. As for linseed, safflower has to date found best acceptance by growers as a rain-grown crop. Similarly, production has recently been affected by two years of drought and local production has been supplemented by importation.

Peanut production has not proved economical at oilseed prices and production has been restricted to demand for edible nuts. Crushing is limited to the culls from this outlet and tonnage of nuts available averages around 5,000 tons per annum.

Over the years numerous trials of varieties and areas have been made to develop the production of soya beans. Yields to date have been low or variable and commercial quantities are not yet available. Continued research is proving promising and predictions have been made that commercial varieties will be available within three years.

In 1968 small quantities of the new high-oil varieties of sunflower were grown and this year significant acreages were planted for oilseed production. The crop is still being harvested and no firm information is yet available on quantities. However, there is little doubt that results will be below expectation due to the current drought.

Small quantities of rapeseed have been grown, but to date these cannot be considered to be of commercial magnitude.

Geographically the major producing areas have been, in order: Linseed: Southern Queensland, New South Wales, Victoria, S.W. of Western Australia. Cottonseed: Northern New South Wales, Queensland, N.W. of Western Australia. Safflower: Central and Southern Queensland. Peanuts: Queensland: Sunflower: Southern Queensland.

With a nation wide distribution of beef and dairying, and meatworks similarily distributed, edible tallow is freely available.

Crushing

Vegetable oil production commenced at the close of last century with a copra crushing plant. With no early supplies of local raw material growth has been slow and today there are only three major crushing plants and of these only one has a solvent extraction unit. Capacities of these plants are each estimated in the 100–150 ton per day range.

In addition, a number of small branch plants, independent concerns or small units attached to oil processing plants would account for about eight further plants, each ranging up to capacities estimated at 50 tons per day. It is possible that operation of a number of these units is not continuous.

End Use

As elsewhere end use of fats and oils can be divided into industrial and edible with the following major subdivisions:

Industrial	Edible
Synthetic resins	Margarine & shortenings
Paints	Food processing
Linoleum	Salad dressing
Putties	Home cooking
Drugs and cosmetics	

Industrial

In the Industrial category the paint and allied industries are by far the most substantial users. The paint industry (and its suppliers, e.g., synthetic resin manufacturers) is very fragmented comprising some five or six major concerns and some two hundred or more concerns ranging in size from medium to very small.

Generally, the demand for oils for industrial uses does not alter significantly. There is a steady growth in the total paint market, but the corresponding growth in raw material demand tends to be nullified by the innovation of nonlipid materials, e.g., from petrochemical sources.

Depending on price, some substitution occurs between local and imported materials notably safflower, soya and sunflower.

Edible

Total consumption of edible fats and oils excluding butter has been estimated at around 100,000 tons per annum. This comprises the following:

Table margarine	16,000 tons
Cooking margarine	31,000 tons
Shortenings (predominantly coconut origin)	27,000 tons
Liquid oils (food processing, salad dressing, home cooking)	26,000 tons

The significant feature here is the differentiation between table margarine, cooking margarine and shortenings.

Under government legislation, margarine containing more than 10% of mixed vegetable oil (or more specifically nonanimal fats or oils) can only be manufactured in accordance with strictly controlled quotas. Total quotas on a national basis amount to some 16,000 tons per annum.

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The Burr Scholarships in China

At the Los Angeles meeting of the Society in 1966, a Symposium on Essential Fatty Acids was held in honor of G. O. Burr, the discoverer of essential fatty acids. At that time he was given a Special Award in recognition of that achievement. The award, in the form of a scroll and a check for $1500, was sponsored by donations from Corn Products Company, Lever Brothers, Foods Division of Anderson Clayton and Company, Distillation Products Industries, Central Soya, Cargill Inc., Atlas Chemical Industries, Owens-Illinois, Harshaw Chemical Company, Tenneco Chemicals Incorporated, General Mills Incorporated, A. E. Staley Manufacturing Co., G. A. Winzer and Son Company, The Electrolyzer Corporation, Atlas Refinery, Inc., and Carolina By-Products Company.

Dr. Burr, who has been research adviser to the Taiwan Sugar Corporation since retirement, has informed us that the entire award has been given as a scholarship fund for needy and deserving students on Taiwan. The China Agricultural Society, which administers the scholarships, has reported that thus far six students have benefited from the fund. The following students have received scholarships: Yang Chien-chun, age 26, major in Agricultural Processing at National Taiwan University (1967); Tsai-Tseng-hwei, age 24, major in Food Microbiology at Provincial Chun Hsin University (1967); Lu Tseng-cheh, age 20, major in Plant Breeding at Pingtung Junior College of Agriculture (1968); Sun Ching-sen, age 25, major in Biochemistry at National Taiwan University (1968); Chen Ming-kai, age 23, major in Biochemistry at National Taiwan University (1968); and Chen Wan-chung, age 23, major in Biochemistry at National Taiwan University (1968).

These students are native Taiwanese who come from very humble economic background and study hard for personal advancement. Dr. Burr recently wrote, "The potential good that can come from the $1500 so generously given me is almost unbelievable. These scholarships will continue for years. This is my recompense for having missed the wonderful reunion in Los Angeles in April 1966."

Tsai-Tseng-hwei

Lu Tseng-cheh

Chen Ming-kai

Sun Ching-sen

Chen Wan-chung

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On the other hand there are no restrictions on the manufacture of margarine containing at least 90% of animal fats. These however must be clearly labeled as cooking margarine. Further, there is no restriction on the manufacture of fats and oils consisting of a single component and marketed as fat or oil. The notable item here is the production of hydrogenated coconut oil as shortening.

The most significant results of this legislation has been:

(a) The acquisition of quota-holding concerns by the more successful companies, resulting in the bulk of the quotas being neld by four major processors.

(b) Repeated endeavors by a number of quota-holders to have quotas increased or restrictions removed. This in turn has been of considerable concern to the dairy industry as butter consumption per capita has declined in the last decade.

(c) Technological improvements to margarines of 90% animal fat origin to the stage where these can compete on a taste and spreadability basis with table margarine. Technically and economically the two most significant factors in assisting in these achievements are probably detergent fraction for production of oleo oil and interesterification.

(d) A concentrated and successful marketing campaign to sell a product which must be labeled cooking margarine but which is in many ways substitutable for other spreads.

(e) Increased concern for declining butter sales which in one state has resulted in revised legislation prohibiting the use of coloring and flavor in the unrestricted cooking margarines.

Undoubtedly, the present situation will not remain static. It is anticipated that the future will see significant competition; on the one hand, to at least confine margarine to its present limitations, on the other, to at least escape the possibility of even greater restrictions.

Czechoslovakia . . . . . Jan Pokorny

Symposium on Fat and Oil Analysis

The Czechoslovak Oil Chemists Association (Part of Czechoslovak Chemical Society) had their annual meeting of analytical chemists in December 1969. The following original papers were presented: Determination of Water in Soap by Microwave Analysis; Column and Paper Chromatographic Separation of Higher Polyglycerol Esters of Fatty Acids; Separation of *Cis* and *Trans* Isomers of Unsaturated Fatty Acids by Gas Chromatography; The Determination and Variability of the Fatty Acid Composition of Domestic and Foreign Commercial Fats by GLC. The results of the last I.U.P.A.C. Fat and Oil Section Meeting in Vienna were discussed.

Import of Oilseeds

Peanut, soybean and sunflower seed are the leading three imported oilseeds in Czechoslovakia. As shown in the table, sunflower seed imported from East Europe becomes the most important oilseed.

Year	1963	1964	1965	1966	1967
Peanut	46	42	37	53	26
Soybean	21	26	25	26	22
Sunflower seed	33	33	17	43	59

(Values in 1,000 tons.)

Detergent Symposium

A Detergent Symposium was held in Prague on December 4 and 5, 1968, at the annual meeting of the Section

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of Detergent Chemists of the Czechoslovak Oil Chemists' Association. The first group of papers concerned the properties of new polyglycolether-type detergents, the properties of ethylene and propylene oxide copolymers, and the rheology of detergent mixtures in the course of spray drying. The group of analytical papers included new methods of evaluation of detergent activity, methods of determination of alkaline soaps in detergents, a modified method of determination of anion-active agents by two-phase titration, infrared analysis of ethylene oxide-propylene oxide copolymers, and ascending paper chromatography of polyphosphates. Some review papers were presented on recent developments of synthesis, physical chemistry, analysis and biodegradibility of surface active agents.

Use of Soap and Detergents in Czechoslovakia

As given in the following table, the consumption (kg per capita) of soap in Czechoslovakia is slowly declining while that of other detergents has been rising in the last few years.

Year	1962	1963	1964	1965	1966	1967
Soap	2.54	2.33	2.37	2.39	2.26	1.98
Other detergents	2.86	2.92	3.02	3.00	3.83	4.35
Total	5.40	5.25	5.39	5.39	6.09	6.33

India . . . . . K. S. Krishnan

Oil Technologists' Association of India News

Silver Jubilee Celebrated

The Silver Jubilee Convention of the Oil Technologists' Association of India was held at HBT Institute, Kanpur from 7 to 9 March 1969. The Convention was inaugurated by Shri. Jagjivan Ram, Union Minister of Food and Agriculture, who highlighted the importance of increasing agricultural yields to obtain raw oils at reasonable prices.

In his presidential address, Lala Kishan Narain, OTAI President, traced the growth of the oils and oilseed industry with particular reference to recent developments in oilseeds' production. He made predictions that substantial increases will occur in the production of ricebran oil as a consequence of the growth of modern ricemilling industries and that soybean oil was also expected to be available from local production in the not too distant future. He also mentioned the possibility of the growth of an oleo-chemical industry built around castor oil as raw material.

Mr. Narain expressed satisfaction over OTAI's growing contribution to the industry and hoped that the Association would gain new heights and performance under the guidance of the incoming President, T. R. Seshadri.

The theme of the Symposium which followed was "Twenty-five Years of Research and Development in Oils, Fats and Allied Industries." There were five technical sessions in which 90 papers were presented.

Papers presented in Technical Session I reviewed the progress made by the oils and fats industry in 25 years: Oilseeds Crushing, by K. S. Murti; Solvent Extraction, by H. V. Parekh; Hydrogenation and Vanaspati, by A. C. Chatrapati; Soaps & Detergents, by N. R. Bhow; Fatty Acids and Glycerine, by S. N. Modak; Surface Coatings, by A. Sinha; Cosmetics, by V. M. Pai; Expellers and Oilmilling, by Sardar Shamsher Singh Taluja; Solvent Extraction Plants, by P. G. Bhandari; Soap and Detergent Plants, by K. S. Krishnan; Oil Refining and Vanaspati Plants, by P. P. Sarma.

Technical Session II dealt with the impact of Government planning and policies on development of industry: Progress of Non-edible Oil Industry Under Khadi and Industries Commission by R. K. Srivastava; Exports and Imports of Vegetable Oils, by V. P. Anantanarayanan and P. Ramaswamy; Quality Control of Oils, by K. L. Chatterjee and J. S. Pruthi; Impact of Standardization on the Rational Exploitation of Fatty Oil Resources in the Country, by S. Subramanyam; Oils-Interface With Paint Industry, by M. S. Saxena and S. Aravamudhan.

Technical Sessions III and IV covered research papers on subjects such as composition, biochemistry and nutrition, production and processing, fatty acids, soaps and surfactants, drying oils and surface coatings and analytical methods.

Technical Session V dealt with the subject on how OTAI can achieve its objectives and how research and industry can collaborate for the common good, on which V. M. Pai and others offered interesting suggestions.

H. J. Dutton, of the Northern Regional Research Laboratory, Peoria, Illinois, presented an interesting paper on the "Structure and Analysis of Fats," and R. M. Starr, Technical Director, Soybean Council of America Inc., Madrid, presented a paper on "New Concepts in Oil Processing."

Dr. Dutton also presented a personal message of greetings from J. C. Cowan, President of The American Oil Chemists' Society, which was welcomed by the President and members of OTAI.

Over 250 delegates attended the three-day-meeting. The chief guest also inaugurated the first issue of the Journal of OTAI which is published from Bombay under the editorship of N. V. Bringi.

Eastern Zone

The Seventeenth Annual General Meeting of OTAI-Eastern Zone was held on January 5, 1969, at the premises of Gresham & Craven of India, Ltd., Calcutta. About 60 members and their families and friends participated in the full day's function, which included variety-entertainment.

S. N. Mukherjee presided the Meeting and made an address stressing the importance of applying modern analytical techniques for detection of adulteration of edible oils.

The following officers were elected unanimously for the year 1969–1970: S. N. Mukherjee, President; P. P. Gupta, P. N. Mathur and P. K. Bhandari, Vice-Presidents; S. C. Singhal and P. S. R. Nambiar, Secretaries; S. P. Singh, Treasurer; and 12 other members.

Northern Zone

The Ninth Annual General Meeting of OTAI-Northern Zone was held on February 23, 1969, at the M/s Ganesh Flour Mills Co Ltd., Delhi, with about an attendance of 40 members and guests.

T. R. Seshadri, F.R.S., presided over the meeting and spoke on "How to avoid loss of edible oils." He emphasised that oil-technologists should make critical observations leading to new discoveries to pave the way for future development.

The following officers were elected for the year 1969–70: T. R. Seshadri, F.R.S., President; Sadgopal, S. S. Ramaswamy, R. K. Bhatnagar and K. S. Krishnan, Vice-Presidents; Raj Bans Bahadur, Secretary; R. K. Mathur, Joint Secretary; V. K. Bansal, Treasurer; and 11 other members.

Western Zone

The seventh Annual General Meeting of OTAI-Western Zone was held on March 26, 1969, at the University Department of Chemical Technology, Bombay. J. G. Kane, President, welcomed the members and guests. V. M. Pai, Secretary, read out the minutes of the 6th Annual General Meeting along with the statement of accounts for the year 1968. Mr. Pai highlighted the achievements of the Western Zone particularly in the fields of seminars, journal-publication and education. He said that the Western Zone was increasingly called upon to shoulder responsibilities of an all-India nature. To handle this work he proposed the creation of an Inter-zonal Administration Council in the Western Zone under the chairmanship of C. B. Khanpara. He also informed that the Executive Council had decided to form the National Education Council in Bombay to function on an all-India basis under the chairmanship of S. Varadarajan.

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The officers elected for the years 1969–70 were: J. G. Kane, President; D. Rebello, Associate President; K. K. Ajilla, N. R. Bhow, V. M. Pai and S. Varadarajan, Vice-Presidents; S. M. Patel, Secretary; V. V. R. Subramanyam, Joint Secretary; R. M. Desai, Treasurer; K. S. Holla, Associate Treasurer; C. B. Khanpara, Chairman of Interzonal Administrative Council; N. V. Bringi, Editor; and 12 other members.

Prof. Kane then introduced the chief guest, V. G. Rajadhyaksha, Chairman of Hindustan Lever Ltd. Mr. Rajadhyaksha addressed the members on "The Generalist in Oils and Oleochemicals." He stressed the need for developing adequate educational facilities in the country to train generalists who could effectively manage specialists as opposed from administrators. He cited the following areas of oil technology which were not being adequately covered in the present curricula of educational bodies but were nevertheless important to the efficient functioning of the oil technologist:

—Agriculture and Agronomy, with particular reference to oil crop evaluation and forecasts, minor oilseeds, botanical aspects such as hybrids, irradiated and glandless cottonseeds, oil-cake-composition and its protein content and palatability, and adulteration.

—Biochemistry of Fats, particularly enzymes for treating fats, atherosclerosis, organoleptic properties, and medicinal properties (e.g., neem).

—Commercial disciplines, with particular reference to world trends in oil production and consumption, oil surpluses of different nations, shortages and gluts, newer oils, purchasing and selling of oils, operation of forward markets.

—Chemical disciplines, with particular reference to the incursions of synthetics, oleochemicals, intersterification, upgrading of low quality fats, soap-syndet mixtures, catalysis, and oil expelling and extraction.

—Chemical engineering disciplines, particularly continuous processing and automation.

Mr. Rajadhyaksha also cited the importance of developments in the fields of packaging and political attitudes in the country, particularly on legislative requirements of vanaspati and edible oils, tallow-imports and price-controls, besides the organizational structure of the oil industry.

Italy . . . . . Giovanni Jacini

Symposium on the Problems Involved in Transportation and Preservation of Fatty Materials

On October 4, 1969, an International Symposium dealing with the problems of transportation and preservation of fatty substances will take place in Milano, organized by the Società Italiana for the study of fatty materials. Reports will be given by both Italian and foreign experts. For information write to Società Italiana per lo studio delle Sostanze Grasse, Via del Lauro 3, 20121 Milano.

Three New Associations Formed

The National Association of Oil, Fats, Soaps and Related Products, a class Association better known under the name of Assolearia, was dissolved at the end of 1968. The formerly associated industries have formed three distinct class associations: the National Association of Oil Industries Unolearia, Rome, grouping all the olive oil producing industries; The National Association of Soaps, Detergents and Sanitary Products, Rome, Via Tomacelli 132; and The National Association of Margarine, grouping the margarine industries, Milano, Via Cantù 2. Today in addition to the three mentioned above, the industrial associations of oils, fats and derivatives in Italy are six: The National Association of Seed Oils Industries Assoliosemi, Rome, via Boncompagni 16, grouping all seed oil producers; National Association of the Chemical Industry Milano, via Fatebenefratelli 10, grouping the syndets and surfactant industries and the National Association of Milk producers Milano, Assolatte, grouping the butter producers.

International Congress on the Biologic Value of Olive Oil

On October 10–12, 1969, to commemorate the 10th anniversary of the International Agreement on Olive Oil and the World Oil Year, a Congress will be held at Lucca on the "Biologic Value of Olive Oil." The Congress, co-sponsored by the International Oil Council (COI) and by the International Federation of Oil culture (FIO), will feature various sessions on Biochemistry, Physiology, Pediatrics, Gastroenterology, Cardiology and Gerontology.

Lectures will be delivered by Italian and foreign scientists. Those wishing to receive information or to present communications dealing with the theme can apply to the Secretary of the Congress: Via del Commercio 36–00154 Rome.

Olive Oil in The Modern Diet

A meeting was held at Bitonto (Bari) November 29–30 and December 1st, 1968, dealing with the theme "Olive Oil in The Modern Diet," organized by the Bari Province Administration. Amel Keys, of the School of Public Health, University of Minnesota, Minneapolis, was one of the speakers. The nutritional aspect of olive oil for all categories of consumers was examined. The paper presented by Prof. Keys, "Dietary Fats and Oils and the Problem of Coronary Heart Disease," mentioned investigations conducted all over the world to determine the possible effect of ingested oils and fats on the health state of the populations involved. Olive oil is acceptable because of the equilibrium of its components; linoleic acid is present in quantities considered as optimal, and tocopherol content is also significant. The conclusion drawn by Prof. Keys is that "olive oil is an excellent food which may be recommended to anyone concerned about health."

Similar concepts in favor of olive oil were expressed by other speakers: Professor Viola, who teaches social medecine at the University of Rome; Professor de Nicola of the University of Pavia, and Professor Montanari of the University of Bologna. Professor Montanari emphasized the importance of olive oil as an excellent carrier of liposoluble vitamins. It was also mentioned that olive oil is the only oil which does not need further refining (at least as far as the best qualities are concerned).

Important steps are under way to improve the methods of growth and harvest of olives, and also the technological procedures for olive processing in order to extract the oil.

The Bitonto Convention was the first of a series of meetings on the quality of olive oils, which attempted to demonstrate the importance of this product. In many zones of Southern Italy and the Mediterranean area it is the only crop which can be grown.

Mexico . . . . . Enrique Chávez-López

The Monterrey Local Section of the AOCS has had several meetings during the last months, which have aroused great interest to members and industry people concerned. Local members of the Association presented papers on several works, such as Uses of Vegetable Oils and Derivatives in the Paint Industry, Production of Bleaching Earths and Uses in the Oil Industry, and Water Treatment in the Food Industry.

The latest activities of this section included a Chromatography session, which was held at the auditorium of the Mexican-American Cultural Institute, consisting of a series of films and round table discussions on the pros and cons of various types of applications, i.e., column, thin layer and gas liquid chromatography as used in the oils and fats industry. This meeting developed great interest among the persons who attended.

The local Section has scheduled for their May and July meetings the following works: Innovation in Oils and Fats Processings, and Progress Achieved in Anti-Oxidants and their Applications in Food Industry.

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Panama . . . . . Javier Guardia

Oilseed Developments

African Palm

Cultivation of African Palm has been steadily increasing in Panama in the last few years. Presently, production exceeds the demand of palm oil for the production of shortening and margarine. Unlike the neighboring countries, however, there is little consumption of margarine in Panama, even though the products manufactured by the local industries are of high quality. Consumers prefer butter, which has been imported in large quantities from New Zealand.

Cotton

On the other hand, the production of cotton in Panama has been small. Growers are planning to use more land in order to increase production. Cottonseed has not been processed by the local oilseed crushers since their mills are not equipped for delinting, and thus cottonseed is being exported. However, as production increases, it is expected that local processors will install delinting equipment and the need to import crude oils from abroad will be reduced.

Toilet Soaps

This year, for the first time in Panama, toilet soaps have been produced locally. Producers have been using tallow from slaughter houses and coconut oil from locally produced copra. The tallow obtained in Panama has very high titer and is balanced with imported tallow of lower titer. As the demand for tallow is larger than the quantities available, there will not be a surplus of the local production.

Paraguay . . . . Antonio R. Pandolfi

In their plant near Asunción, Compañia Algodonera Paraguaya S.A. (CAPSA) is beginning installation of a complete new refinery for the production of high quality edible fats and oils which will benefit the Paraguayan and LAFTA (Latin American Free Trade Association) markets.

The project comprises an Alfa Laval degumming and neutralizing plant, lecithin dryer, batch and continuous oil bleaching plants, batch high temperature high vacuum deodorizer, continuous Wurster & Sanger deodorizer with fatty acid condensing unit, electrolytic hydrogen generation plant. Buss hardening plant, Buss batch splitting and glycerine concentration plants, and a new continuous Wurster & Sanger glycerine distillation plant.

CAPSA is also installing a Sidel blow moulding machine for production of their own PVC bottles for liquid oils. These will be filled in a Strunck specially designed line for continuous filling, capping and labeling. The margarine and shortening plant will have a Schroeder Universal Combinator whose products will be presented in PVC tubes, that will be made, filled, covered and aluminum-sealed in a continuous Thermo-forming unit. Fatty acids will be flaked in a continuous Schroeder colling drum.

CAPSA has been producing Palm oil of high free fatty acid content from the meat of Mbocaya (Acrocomia Totai, Mart) a typical Paraguayan Palm tree. This oil differs from the known Red Palm oil insofar as it is liquid at ambient temperature, owing to a lower content of palmitic acid (24/25%, the remaining consisting of oleic acid). Since it has not been possible to refine this oil using standard procedures a new combined method of refining it was developed. The oil is purified, degummed and bleached in the miscella stage; later it is steam-refined in the continuous Wurster & Sanger deodorizer. Recovered distilled fatty acids are used for high grade technical uses (toilet soaps, cosmetics, etc.) because of their particular composition. After winterization, the refined oil is sold as liquid edible oil for margarines with or without hardening.

Palm kernel oil has already been produced in this plant; it is derived from the same fruit, with the unusual characteristics of having a high iodine value (30 units). Cottonseed and soybean oils have also been produced and production of stearic acid derived from tallow is being planned for the near future.

The new refinery is expected to start operating in the second half of 1969.

ABSTRACTS: BIOCHEMISTRY AND NUTRITION

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be phospholipid in nature. Synthetic phospholipids also stimulated fatty acid synthesis, while preliminary treatment of microsomes with phospholipase C removed stimulatory activity. The factor was shown to activate hepatic acetyl coenzyme A carboxylase and presumably stimulated fatty acid synthesis in the soluble fraction by this mechanism.

FATTY ACID COMPOSITION OF SERUM LIPIDS IN 5-YEAR-OLD WHITE CARNEAU AND SHOW RACER PIGEONS. F. Young (Dept. of Food and Nutr. Sciences, Univ. of Hawaii, Honolulu, Hawaii). *Proc. Soc. Exp. Biol. Med.* 130, 980–83 (1969). A comparative study was made of the fatty acid compositions of serum glycerides, phospholipids, and sterol esters of White Carneau pigeons (WC) which are susceptible to naturally-occurring aortic atherosclerosis and Show Racer pigeons (SR) which are resistant. The significantly lower proportion of arachidonic acid in the serum sterol esters of 8-month-old WC compared to SR was not observed in 5-year-old pigeons. No significant difference was observed in the fatty acid compositions of the three lipid fractions between 5-year-old WC and SR. Significant differences in the fatty acid compositions of all three serum lipid fractions were found between F_1 generation of SR × WC and either one of their parent breeds. Significant changes in the fatty acid composition of serum sterol esters were noted between 8-month-old and 5-year-old pigeons of both breeds.

BIMOLECULAR LIPID MEMBRANES: A REVIEW AND A SUMMARY OF SOME RECENT STUDIES. H. T. Tien and A. L. Diana (Dept. of Biophys., Michigan State Univ., East Lansing, Mich.). *Chem. Phys. Lipids* 2, 55–101 (1968). The bimolecular lipid membranes of Rudin-Mueller-Tein-Wescott type have been subjected to intensive investigations owing to their striking physical and chemical properties which are similar to those of cell membranes. In addition to biological relevance, these ultrathin structures are a new type of interfacial phenomenon which should also be of interest because of their pertinence in furthering the understanding of colloid and interfacial chemistry. The literature of bimolecular lipid membranes (BLM), including abstracts, has been reviewed through January, 1967. Also included are some recent studies from this and several other laboratories.

JUVENILE HORMONE: ACTIVITY OF AROMATIC TERPENOID ETHERS. W. S. Bowers (Insect Physiol. Lab., Entomology Res. Div., Agr. Res. Service, Beltsville, Maryland). *Science* 164, 323–5 (1969). Several aromatic terpenoid ethers possess a high degree of morphogenetic activity when assayed on the yellow mealworm *Tenebrio molitor L.* and the milkweed bug *Oncopeltus fasciatus* (Dallas). The most active compounds were the 3,4-methylenedioxy-phenyl ethers of 6,7-epoxygeraniol and the corresponding ethyl-branched homologs.

VITAMIN A AND THE BIOSYNTHESIS OF SULPHATED MUCOPOLYSACCHARIDES. D. B. Thomas and C. A. Pasternak (Dept. of Biochem., Univ. of Oxford) *Biochem. J.* 111, 407–412 (1969). The uptake and incorporation of sulphate-^{35}S into mucopolysaccharides by colon and duodenum *in vitro* are unaffected by the vitamin A status of the animals. Uptake and incorporation *in vivo* are unaffected 4 hours after injection of sulphate-^{35}S, but at later times are decreased in some tissues of vitamin A-deficient animals. The rate of removal of ^{35}S from blood, its rate of appearance in urine, the plasma concentration of sulphate and the uronic acid content of several tissues are not significantly altered in vitamin A deficiency. These results, and direct measurement of ^{35}S in mucopolysaccharides at various times after injection of sulphate-^{35}S, suggest that the synthesis of mucopolysaccharides is unaffected but that their turnover is increased in vitamin A deficiency. Neither the growth rate of, nor the incorporation of sulphate-^{35}S into heparin by, P 815 Y and HC cultured neoplastic mast cells is decreased when the horse serum necessary for growth

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