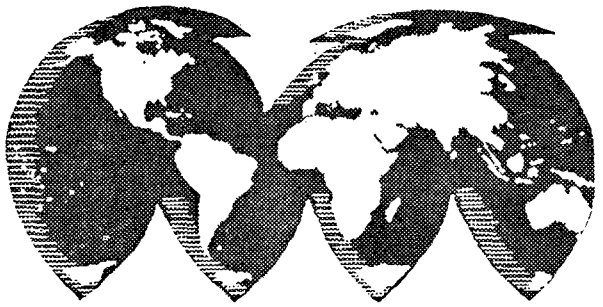
FOUR CORNERS



EUGENE MARSHACK, Chairman,
International Relations Committee

MENY BERGEL, J. ALLAN, ST. A. IVANOV, ENRIQUE AMADORI M., J. POKORNY, GIOVANNI JAVINI, REINHARD MARCUSE, Corresponding Secretaries

Argentina . . . . . Meny Bergel

Medical Research on Lipids Conducted in Buenos Aires

Saul Senderey, Clinical Instructor of Nutrition in the School of Medicine of Buenos Aires, in collaboration with I. Faerman, Chief of Nutrition Service of C. Durand Hospital in Buenos Aires, D. Fox, H. Camarota, and A. Correa, are investigating the antilipolytic effect of endogenous insulin on normal individuals, potential diabetics, chemical diabetics and clinical diabetics, injecting iv Glibenclamide and glucose (2 mg Glibenclamide in 12 gr glucose in solution at 50% in one dose, followed by continuous injection of a solution of 1 mg Glibenclamide and 12 gr glucose in 200 cc water per hr for 3 hr). The modifications of FREE NEFA-GLYCEROL AND TRIGLYCERIDES, in the blood extracted frequently during the test and until 2 hr after completion of the injection, seem to indicate a correlation with the value of the increment of insulinemia, and of the time of duration of this increment, different in the study groups.

Abraham Lemberg, instructor of Toxicology at the School of Medicine of the College of Biochemistry of the same university, Regina W. Wikinski and M. Izurieta, H. Halperin, A.M. Pugliese, D. Krasnokuki and P.P.M. Neuman, made several studies on lipod and glucide metabolism in the liver of a rat. They found that the continuous injection of Prostaglandine E_1 brings an increase of glucose levels in the liquid, which also produces an increase of glycerides upon adding Norepinefrinam. The prostaglandine E_1 alone does not modify the tenor of ketonic bodies, but together with Norepinefrinam it diminishes the ketogenic effect of the latter (Byoch. Brophy. Acta 248: 198 [1971]). They also demonstrated that the addition of hyperlipemic serum to perfusions with Prostaglandine E_1 produces a marked antilipolytic effect. In other experiments they found that the blockader B Allprenabol is able to suppress the effects of Nor Epinefrine on Glycohemia, NEFA and Glycerides, confirming the presence of a receiver in the membrane of Hepatocito, which could be adenilciclasa (in press, Hormone Metab. Res. [1972]). The same group of researchers are presently studying the effects of perfusions of the liver isolated from the rat, of choline marked with C14 or of leucine with H^3, on the synthesis of phospholipids and their relation with several hormones.

Regina W. Wikinski, in collaboration with H.E. Mosso, H. Halperin, H. Grosman and J. Alvarez, is studying the content of several lipid fractions—total lipids, cholesterol, triglycerides and lipoproteins in arterial and venous blood of arteriosclerotics, without finding differences in both. Likewise she is investigating with M.V. Ques, A. Guitelman, A.M. Paglione, and O. Degrossi, the relation of NEFA and plasmic Somatotrofina in 20 acromegalic patients given tests of oral surcharge of glucose or injected with sodic Tolbutamida iv. In some cases the modifications of NEFA and Somatotrofina are parallel and in others they are not. The study is presently being continued. The group comprising Roberto Smud, Birita Sermukslis, Francisco J. Fernández Soriceti and Leandro Rotman, of the Lipid section of the Metabolic Research Laboratory of Juan A. Fernández Hospital in Buenos Aires, headed by the Smud, studied: (a) *Correlation between uricacidemia and different fractions of the serous lipoids in healthy individuals, diabetics, arteriosclerotics, nondiabetics with genetic hyperlipidemias,* showing in all groups a positive correlation between uricacidemia and triglyceridemia, and no correlation between uricacidemia, cholesteremia, and phospholipidemia. (b) *The fractional clearance of Glycerin* proved to be less in chronic hepatics. Moreover compartmentalization is different in these patients, compared with healthy subjects. (c) In the same group of patients, it was not possible to show any correlation between magnesemia, determined by spectrometry of atomic absorption and the different lipoid fractions of the plasma. Presently these studies are being made: the modifications of blood viscosity in genetic hyperlipidemias, the behavior of lipoproteins in different mediums and the variations of the serous lipoids in nephrosis, during therapeutics with hyper or hypohydrocarbonate diets, cortical and immune suppressive drugs.

The group of researchers of the Department of Lipids of the Center of Medical Education and Clinical Research, headed by Clinical Instructors of Nutrition Osvaldo J. Brusco and the collaboration of B. Fiore and M.A. Oriozabala, found a significant decline in plasmic lipids in patients with hyperlipoproteinemia type II primary, when they were subjected to a diet rich in polyunsaturated acids. Moreover Brusco, Oriozabala and R. Arakaki studied the hypocholestermiant effects of Ditiobisfenol (D.H. 581) on patients with Hyperlipoproteinemia type II. Likewise at present they are studying the effects of Oxandrolona on the increase of the VLLP in patients with hyperlipoproteidemia types III, IV and V.

The following information was provided by Mario Campagnoli.

Attempts to influence CHO metabolism by means of magnesium are not new and have been numerous, but results are inconclusive. During the last decade we have been using a method that we call "Penetrating Solutions," based on the utilization of a 10% solution of fructose in water as a carrier for magnesium (as sulphate) in order to facilitate its entry into the cells. Among the results thus far obtained the following deserve mention: (a) normalization of lipidogram and of plasma lipids; (b) consistent good results in cases of mild ketosis of pregnant women. This work has been done by Mario Campagnoli, Assistant Professor of Nutrition, University of Buenos Aires School of Medicine, and coworkers, in the former National Institute of Nutrition and now in the Medical Center Rivadavia-Peralta Ramos, Ministry of Welfare, Buenos Aires, Argentina.

Australia . . . . . J. Allan

Australian Oilseed Production Increases

Oilseed production in Australia continues to increase at a significant rate. While official figures of actual production for 1970–71 are not yet available, the following table gives estimates made in October last year. Since harvesting was actually completed at that date, the estimates should be a realistic indication of final tonnages. The 1971–72 figures are of course forecasts. The vagaries of the Australian

climate can cause wide variation between planned and actual plantings, not to mention final harvestings.

Acreage and Production of Vegetable Oilseeds in Australia
(Acres and Long Tons)

Oilseed	Acreage		Production	
	1970–71	1971–72	1970–71	1971–72
Safflower	85,000	109,000	13,600	16,900
Sunflower	269,000	760,000	81,750	102,300
Soyabean	19,000	38,000	11,230	15,000
Rapeseed	134,000	207,000	46,500	67,500
Peanuts	.....[a]	.....[a]	3,000	6,000
Cottonseed	87,000	97,000	29,890	62,900
Linseed	105,000	52,000	25,930	19,700
Total	699,000	1,263,000	211,900	290,300

[a] Not indicative as no nuts grown directly for oil. Crushing of edible culls only.

The following notes on the Australian situation are relevant to the figures given above.

Weather: 1970–71 opened with a continued drought in the major safflower growing area but alternative areas were planted. Early in 1971 floods occurred in the major cotton growing area. This caused a significant decrease (ca. 40%) in the availability of cottonseed and some reduction in the sunflower crop. This was followed by a very dry period in late winter which seriously reduced the expected yield of rapeseed in 1971–72 and the anticipated increase in the 1971–72 safflower plantings. Subsequently heavy midsummer rains have recently been experienced over the eastern states. At the time of writing the full effect of this has yet to be evaluated. Certainly the yield of safflower will be below the forecast figures and it is likely that some sunflower crops reaching maturity could be affected. On the other hand further plantings of sunflower can still be made and the net result on sunflower production could be to maintain or slightly increase the forecast production.

Milling Capacity: The announcement by one of the major crushing companies, Meggitt, Ltd., of their plans to duplicate in Melbourne the 300 ton per day plant currently being installed in Sydney will significantly increase Australian milling capacity. This, together with expansion understood to be planned by other crushers, will lift Australia's annual milling capacity to a minimum of 400,000 tons by 1974. It is estimated that this represents a four-fold increase in the 10 year period 1964–74.

Trading Activities: While all the above capacity is not yet installed, a significant increase is scheduled to come "on-stream" in 1972. This increased demand by local crushers for oilseeds has coincided with a buoyant world market, especially for sunflower seed. This has resulted in a three-way demand for oilseeds, or more particularly for sunflower seed, by: (a) local crushing companies, (b) grain merchants and traders, and (c) grower organized marketing associations. The latter groups have arisen as a result of the grower's fears that he may be exploited and the market damaged if too much of the market is supplied by the opportunist trader.

It is anticipated that for sunflower seed the total 1972 demand for firm export commitments and local crusher requirements will be very close to the anticipated harvest. Recent rains could result in this production figure being nearer to 130,000 tons than the earlier forecast. However, should a tonnage as low as 100,000 tons only be forthcoming, then interesting developments could eventuate in the near future.

The most significant result of this competition for local production has been the moves by some growers in N.S.W. to petition for a State Marketing Authority to control the orderly marketing of oilseeds. The establishment of such a body requires a grower referendum, which it is understood will be held within the next six months.

It is anticipated that the forthcoming year will see very significant developments in the oilseed situation in Australia, which will set the pattern for future expansion.

Bulgaria . . . . . St. A. Ivanov

AOCS Member A.F. Kummerow Visits Bulgaria

Oil industry is well developed in the People's Republic of Bulgaria. The basic oil crop in the country is the sunflower. Bulgaria is fourth in the world and first in per capita growth of the sunflower. Sunflowerseed oil production takes more than 80% of the production of food fats. New Soviet varieties have been introduced lately, with high fat content up to 47%.

Bulgarian sunflowerseed oil is stable and of high quality, with 65–70% linolic acid, lacking linolenic acid. The sowing, growing and harvesting of the sunflower crop is almost entirely mechanized.

Bulgarian sunflowerseed oil marketing is constantly growing; therefore a considerable part of the oil is exported.

Bulgaria's best commercial partners are BRD, Holland and France. In 1969 the export to these countries reached to 60,000 tons. The export of technical oils including sunflowerseed oil, is considerably smaller to BRD and Switzerland.

In the last 3 or 4 years oil industry in Bulgaria has been reconstructed and consolidated, turning to technological scheme—forpressing—extraction. That leads to concentration of production, complex processing of raw materials, and raising the quality of production with preserving, as much as possible, the physiologically active substances in the oil and the proteins in the groats.

The applied science investigations in the country, including these in the field of fats, from 1971 have been led by the Centers for Research and Development Activity at the respective state enterprises, which integrate the scientific potential, finance the research work, and assist the implantations in the production.

The most important international event in the field in 1971 was the International Symposium on Phytochemistry of the Balkan Flora, held in Varna in October 14–18. There were about 300 participants, who heard reports in lipochemistry.

An event of great interest for Bulgarian lipochemists and physiologists was the 2 week visit in June of A.F. Kummerow from the Burnsides Research Laboratory, University of Illinois, in the line of exchange between the Bulgarian Academy of Sciences and the U.S. National Academy. Kummerow visited many scientific centers, working in the field of chemistry, physiology and technology, e.g., Lipid Chemistry Section at the Bulgarian Academy of Sciences headed by A. Popov; the Institute of Nutrition at the Bulgarian Academy of Sciences in Sofia, directed by T. Tashev; the Chair of Internal Diseases at First Municipal Hospital in Sofia, headed by Ak. Puchlev; and the Fat Technology Chair at the Plovdiv University, directed by St. A. Ivanov. There were many interesting talks and exchanges of experience in all fields of the investigations.

Of great interest for the Bulgarian lipochemists were the lectures delivered by Kummerow on the role of lipids in heart diseases and on lipid changes in processing.

The most interesting forthcoming international events in our country for this year are the International Symposium on Some Actual Problems of the Food Industry in October 1972, and the Symposium on Sanatory-Resort, Physical and Dietary Treatment of Obesity also in October 1972.

Chile . . . . . Enrique Amadori M.

Research on Edible Fish Oils in Progress at Chile's Catholic U.

The Chemical Engineering Department of Universidad Católica de Chile, headed by Armin Lauterbach, has conducted considerable research on fats during the last year. The purpose of this work was to obtain a liquid fish oil, of good organoleptic and biological characteristics and high resistance to oxidation, that could be turned into

edible oil, blended with vegetable oils (rape, sunflower, soybean, etc.). Chile is an exporter of fish oil but imports a major part of its vegetable oil.

Research work so far has covered the following stages: (a) Effect of the variables on the hydrogenation process for selective commercial copper-chromite catalysts. This part of the research includes: reaction rate, geometrical isomerization and selectivity. The influence of peroxide value on hydrogenation rate was also studied. At this stage the conclusions were: (1) The rate of reaction with copper-chromite catalysts is slightly lower than the one obtained with nickel; (2) Maximum selectivity was obtained for approximately 100 psi pressure; (3) Geometrical isomerization was very similar for Cu and Ni catalysts; (4) The minimum iodine value reached was about 90 for Cu catalyst; (5) An increase in the peroxide value of the oil produced a decrease in the rate of reaction. Peroxide value of about 20, made hydrogenation very difficult; (6) The oil hydrogenated with copper catalyst showed a greater stability than the one hydrogenated with nickel. After 4 months storage, the oil did not present odor reversion. (b) Deodorization of hydrogenated samples: Excellent results were obtained in the deodorization of hydrogenated samples with copper catalysts. (The following conditions were used: 220–240 C, 0.2–1.0 mm Hg and a water-oil ratio of 1:3). No bleaching was necessary after hydrogenation. (c) Winterization: Deodorized samples were winterized to remove relatively saturated glycerides. Oil was cooled from room temperature to 8 C in 48 hr and held at this temperature for 24 hr, then was vacuum filtered. The yield of winterized oil ranged from 65–85% oil with an iodine number of 105–120. The refining processes studied made possible to get a "nonoxidable" oil with good organoleptic characteristics. The product obtained is slightly cheaper than vegetable oil, considering the present prices of fish oil.

The next step in this research will be biological and toxicological research on rats.

Sunflower, Linseed and Anchovy Oil Also Under Study

Sunflower oil was hydrogenated under different conditions of reaction, i.e., temperature, nickel commercial catalyst concentration, agitation, oil mass and turbine diameter. A correlation based on statistical methods was developed from data obtained from 20 experimental hydrogenations. This equation is intended to be used to calculate the "expected value" of the overall reaction rate constant.

Linseed oil was hydrogenated with commercial nickel and copper-chromite catalysts under selective conditions (0–100 psig, 180 C, 800 rpm.). The oil was treated in an agitated tank reactor. As expected, the selectivity obtained with copper catalysts was higher than the one obtained with nickel. The resistance to oxidation was also substantially better with copper. The hydrogenated oil can be used as edible or industrial oil, i.e., white oil paints.

Linseed oil was hydrogenated with nickel and copper oxide on gamma alumina, reduced and stabilized cobalt on kieselguhr, cobalt molybdate on gamma alumina, palladium on gamma alumina and promoted palladium on alumina catalysts under the same conditions.

Runs with palladium catalysts reached the same selectivity as that with copper-chromite catalyst for a concentration range of 0.001–0.1% Pd.

Anchovy oil (IV = 170) was epoxidized in order to obtain a secondary and possibly a primary plasticizer. The reactions were achieved in situ with partially preformated peracetic acid and solvent. The product obtained had the following characteristics: oxirane index, 8.0; iodine value, 2.9; and acid value, 0.8%, as oleic acid.

Czechoslovakia . . . . . Jan Pokorny

Czechoslovak Chemical Society Sponsors Congress of Industrial Chemistry

The Congress of Industrial Chemistry, held in the Tatra Mountains October 24–29, 1971, was organized by the Czechoslovak Chemical Society. Among the more than 700 papers presented, were many papers interesting to oil and fat chemists. Selected subjects follow: (a) adaptation of oilseed processing for the production of protein isolates from extraction meals; (b) effect of hydrogenation conditions on the triglyceride structure of vegetable oils; (c) use of recording microwave analyzer for the control of water in soap; (d) detergent produced by condensation of protein hydrolyzates or oligomers of omega amino acids with hydrophobic substances; (e) condensation of hydroxy acid glycerides with ethylene oxide; (f) effect of microbial activity on the oxidation of meat lipids; (g) separation of antioxidants by gel permeation chromatography; (h) microbial synthesis of fats from mineral carbon sources; and (i) study of fatty acid composition of erythrocyte and serum lipids.

A symposium on "Rapeseed Extraction Meal and Isolation of Rapeseed Protein" took place in Usti n. L., October 22, 1971. A. Rutkowski of Warsaw, Poland, reviewed the Polish research of rapeseed processing. The plant scale detoxication of rapeseed meal and the use for poultry were discussed. As the production and import of rapeseed are rapidly increasing in Czechoslovakia, the symposium was received with great interest.

Germany . . . . . H. K. Mangold

L.L.M. van Deenen Receives Wieland Prize

The "Heinrich Wieland Prize," which is awarded annually for outstanding work in the field of lipid chemistry and biochemistry, was conferred on Professor L.L.M. van Deenen, Head of the Department of Biochemistry of the University of Utrecht, in Utrecht, The Netherlands. Van Deenen received the prize at a ceremony held in Munich on November 12, 1971.

Cooperative Effort Reveals New Dimensions in Thin Layer Chromatography

In a cooperative effort, K.D. Mukherjee, Münster, Germany, H. Spaans, Delft, The Netherlands, and E. Haahti, Helsinki, Finland, have developed an instrument for thin layer chromatography using gas-phase detectors. The development of this sensitive scanner marks a breakthrough in quantitative thin layer chromatography (TLC).

In short, chromatography is carried out on layers of adsorbent coated on the internal walls of quartz or glass tubes. In the TLC scanner, zones of organic substances are vaporized consecutively from the adsorbent into a stream of carrier gas, either by pyrolysis, or, if the adsorbent contains an oxidizing agent, such as cupric oxide, by combustion in situ. The products of pyrolysis are monitored by a flame ionization detector (FID), either directly (Pyrolysis-Detection Method, PD), or after combustion to carbon dioxide and subsequent reduction to methane (Pyrolysis-Combustion-Reduction-Detection Method, PCRD). Alternatively carbon dioxide formed by in situ combustion is reduced to methane and detected in the FID (Combustion-Reduction-Detection Method, CRD). A short communication describing the design of the instrument has appeared in J. Chromatogr. 61:317 (1971).

More recently the performance of the TLC scanner has been studied extensively at the H.P. Kaufmann-Institute of the Federal Center for Lipid Research in Münster. It has been found that the instrument permits accurate analyses of a wide variety of complex lipids.

It is anticipated that Dr. Mukherjee will present an account of this work at the fall meeting of the American Oil Chemists' Society, in Ottawa, Canada.

DGE Plans Lipid Symposium

Later this spring, on April 27 and 28, a symposium on dietary lipids will be conducted in Munich under the auspices of the German Society for Nutrition (DGE). It

will be organized by N. Zöllner. The proceedings of the symposium will be published later this year.

DGF to Hold '72 Convention in Giessen

The 1972 convention of the German Society for Fat Research (DGE) will be held on October 9 through 13. Giessen, a university town about 40 miles north of Frankfurt, will host the meeting.

German Interest in Soybeans Increasing

In 1970 as well as in 1971, the Federal Republic of Germany imported about 2 million metric tons of soybean. Well over 95% of this amount came from the U.S. In addition Germany imported large volumes of soybean oil and meal.

According to figures provided by the American Soybean Institute's office in Hamburg, the share of soybean oil on the German edible oils market has risen from 26.3% in 1965, to 38.9% in 1971.

During a recent visit to the Federal Center for Lipid Research in Münster, W.O. Lundberg, Executive Director of The Hormel Institute in Austin, Minn., delivered a lecture entitled "Nutritional, Chemical and Biochemical Aspects of Soybean Oil." The seminar was attended by about 40 guests from universities, government laboratories, and industry.

Also of interest in this connection is a recent article on the production of margarine from soybean oil by W. Heimann and J. Baltes, Fette Seifen Anstrich. 73:113 (1971).

Italy . . . . . Giovanni Jacini

International Meeting on Oil Seed Proteins Held in Cremona

Oilseed, more than 18 million quintals of which were processed in Italy in 1970, constitutes the raw material of two products decidedly important for nutrition: seed oils (peanut, sunflower, soya, various seeds, etc.), and oilseed cakes and meals. In Italy in 1970, availability of oilseed was about 6 million quintals amounting to 120 billion lire; cakes and meals availability was more than 12 million quintals for a value of about 60 billion lire.

Oil cakes and meals constitute the fundamental ingredient of animal feed and an increase in production along with quality improvement are the first aim of the "fight for meat" which worries the Italian government and consumers as well.

In 1970, Italy imported fresh, frozen and corned meat for an amount of 573 billion lire. Such a figure represents nearly 60% whole deficit of our alimentary balance. This troublesome figure which will be larger in the future if an increase in production of meats and animal feeds does not take place.

These topics represent the background of the international meeting on oilseed proteins held in Cremona on October 7-8, 1971, organized by the Italian Society for Fatty Materials of Milan. Lecturers' names and title of lectures are following: T. Bonadonna (Ordinario di Zootecnia all 'Università di Milano), "Introduction to the meeting theme"; E. Marre' (Ordinario di fisiologia Vegetale all'Università di Milano), "Biosynthesis of proteins in oilseed"; R. Ferrando (Ecole Nationale Vétérinaire—Alfort), "Oil seed cakes in covering proteinic need of animals"; A. Rutkowski (Institute for Food and Nutrition—Varsavia), "Oilseed. Proteins and their characteristics"; E.H.M. Greuell (Unilever Research—Vlaar ingen/Duiven), "Utilization of vegetable proteins in human foods"; L.D. Williams (Central Soya Co.—Fort Wayne, Indiana), "Composition, properties and chemistry of edible soy proteins"; A. Hagberg (Swedish Seed Association—Svalöf), "Improved nutritional value by plant breeding"; A. Lanzani (Stazione Sperimentale Oli e Grassi—Milano), "Optimum industrial treatments during preparation of oilseed meals"; P. Masoero (Ordinario Università di Torino; direttore del Centro di Studio dell'Alimentazione degli Animali in Produzione Zootecnica del CNR), "Bromatologic considerations on colza extraction meals: contribution to the knowledge of their nutritional utilization in animals with researches on chickens in growth"; A. Mondino (Istituto di Ricerche Biomediche Antonine Marxer SpA—Ivrea), "Techniques of analysis of proteins also in relation to their nutritional value"; E. and M. Bernardini (Costruzioni Meccaniche Bernardini C.M.B. Pomezia), "Industrial equipments for production of protein superconcentrates to start from proteinic meals"; A. Finzi and I. Ramboli (Cattedra di Zooculture dell'Università e Istituto di Zootecnica Speciale—Università di Pisa), "Congenital blindness in chicks owing to prolonged administration of raw soy to brooding hens"; O. Motta (Euroimpianti Srl—Milano), "Process for preservation of water solubility of proteins of meals"; G. Piva, G. Piana, E. Santi and L. Postiglioni (Istituto di Scienza della Nutrizione—Università Cattolica del Sacro Cuore—Piacenza), "Nutritional value of cashew nut protidic share (*Anacardium occidentale L.*)"; and F. Tateo (Laboratorio Chimico Compartimentale delle Dogane—Milano), "On the chemical-biologic characteristics of proteins of some oilseed depending on industrial treatments."

New Olive Oil "Codex" Compiled

The Technical Commission which has its seat at the Experiment Station for Oils and Fats, Milan, has compiled a "codex" of analytical characteristics as regards olive oils produced in Italy; such a "codex" is much more severe than the one published by "Codex Alimentarius" and is meant to insure the quality of olive oils, virgin or refined, produced in Italy and set apart both for exportation and domestic consumption.

Scandinavia . . . . . Reinhard Marcuse

Denmark

Papers presented at the Lipid Symposium at Grena, June 1971, (see December JAOCS, p. 497A) are now in press. They will be printed in Scandinavian languages and will include English summaries. The publication will be distributed to participants free of charge; the price for nonparticipants will be 60.—dKr. Send orders with payment enclosed to O. Tolboe, Jydsk Teknologisk Institut, 135 Marselis Boulevard, DK-8000 Århus C, Denmark. Further information may be obtained from LIPID-FORUM, c/o SIK, S-400 21, Göteborg 16, Sweden.

Norway

Emeritus Status Does Not Mean Retirement for Olav Notevarp

Professor Olav Notevarp, Director of the Department of Industrial Chemistry, Institute of Technology, University of Trondheim, Norway, became Professor Emeritus on his 70th birthday, February 13, 1970.

Notevarp graduated from the Norwegian Institute of Technology in 1923. Following 7 years of industrial experience he served as Director of the Norwegian Fisheries Research Institute in Bergen from 1930 until he was appointed professor in Industrial Chemistry in 1949. From 1954–1957 he acted as president of the Norwegian Chemical Society.

Besides his wide interests and work within the field of Industrial Chemistry, Notevarp has been especially active within the chemistry of fats and oils. He is author of ca. 100 scientific and technical papers concerning fish and marine oils, freezing and storage of fish and other foods, and he has patented methods concerning the production of fish oils and meal and preservation of herring for oil and meal production. His scientific work includes several

(Continued on page 133A)

• *Four Corners . . .*

(Continued from page 102A)

papers on the fatty acid composition of oils and fats of marine and animal as well as of human origin. In recent years his interests have been especially directed towards the importance of the polyunsaturated acids in foods and in human blood and depot fats.

Notevarp has been very active in the industrial exploitation of marine oils, and for the last 10 years has directed an industrial research plant.

Although he has held his emeritus title for 2 years, Professor Notevarp has in no way retired. In addition to several of his former activities he is engaged in various research projects sponsored by the industry and the Royal Norwegian Council for Scientific and Industrial Research. Also he is the Norwegian coeditor of *Acta Chemica Scandinavica.*

Since 1952 Notevarp has played a very active part in the Scandinavian Symposia on Fat Rancidity, later in the Scandinavian Symposia on Lipids and in the creation of the Scandinavian Forum for Lipid Research and Technology with secretariat in Göteborg. At the imminent ISF World Congress in Göteborg he will act as cochairman of the Symposium on Marine Oils.

Meeting on Quality of Fish Protein Held in Bergen

The following note was received from Mr. H. Russwurm, Jr.

The unofficial annual meeting of Norwegian fish research workers was held in Bergen on November 18, and was arranged by the Norwegian Fisheries Research Institute. The subject of the meeting was presented in three lectures: The Drying Process of Fish Meal; Quality Criteria of Fish Protein; The Nutritive Value of Fish Protein. The lectures were followed by several hours of discussion.

Next year's meeting will be held in Stavanger, and will be arranged by The Research Laboratory of the Norwegian Canning Industry.

Sweden

Larsson Directs New Lab for Lipid Chemistry

A laboratory for lipid chemistry at the University of Göteborg has recently been taken into use by Kåre Larsson, Associate Professor. The research concerns the molecular arrangement in lipids in different states of order based upon results from Raman spectroscopy, X-ray low angle diffraction and surface film technique. One project concerns utilization of hydrophilic lipid crystals in a new type of ointment base and clinical tests have been very promising. Larsson is secretary general of the imminent ISF Congress on Lipids in Göteborg.

Plans Progress for ISF World Congress on Lipids

Preparations for the XI. ISF World Congress on Lipids, June 18–22, 1972, in Göteborg, Sweden, are progressing satisfactorily. The Congress has created worldwide interest, as participants from 35 countries have sent preliminary applications. Short courses and technical visits announced in the technical program (see December JAOCS, p. 497A) have received much attention. A very promising social program has been arranged with a cocktail reception by the City of Göteborg in the famous Art Museum, a banquet with entertainment at the well known Liseberg Park, and a boat trip in the archipelago to the medieval fortress island of Marstrand. A special ladies program is also planned. A second circular with the program of the Congress was distributed in December.

Deadline for acceptance of abstracts has been extended to March 15. Registration forms should be completed and returned as soon as possible to avoid difficulty in obtaining room reservations. For information write the Congress office at ISF 1972 Congress, Fack, S-400 32 Göteborg 31, Sweden.

Exhibition to Accompany ISF Congress

As at the earlier ISF Congresses an exhibition of instruments, machines, material, literature, etc., of interest for research and production, will be arranged during the ISF World Congress on Lipids, taking place on June 18 to 22 in Göteborg/Sweden. Suitable localities close to the lecture halls are available for this purpose. Responsible for the local arrangements of the exhibition will be the company PILREKLAM (J.E. Kuhn), 72 Gullrisgatan, S-417 20 Göteborg, Sweden. Tel. 031/23 01 25, 23 90 58. Reservations should be made as soon as possible. Information can also be obtained through the Congress office at ISF 1972 Congress, Fack, S-400 32 Göteborg 31, Sweden.

• *Abstracts . . .*

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STUDIES OF THIIRANE DERIVATIVES. III. SYNTHESIS OF 1,3-BISALKOXYPROPANE-2-SULFONATES AND THEIR SURFACE ACTIVE PROPERTIES. E. Kameyama, M. Nakajima, A. Ozaki and T. Kuwamura (Dept. Applied Chem., Gunma Univ., Kiryu, Japan). *Yukagaku* 20, 32–35 (1971). 1,3-Bisalkoxypropane-2-sulfonates (number of alkoxyl group from 4 to 8) were synthesized from 1-alkoxy-3-chlorpropane-2-sulfochloride and sodium alcolate. Above cmc, the surface tension of aqueous solution of the n-octyl homologue of the sulfonate was 24.9 dyne/cm at 40C and lower than that of Na-diocylsufosuccinate. The cmc value of the octyl sulfonate was also lower than that of the succinate. The wettability and foam-stability of the octyl homologue were excellent.

EFFECTS OF SURFACTANT AND BUILDERS ON THE INTERFACIAL TENSION AT OILY SOIL/WATER INTERFACE. Y. Minegishi, T. Takeuchi and H. Arai (Household Goods Res. Lab., Kao Soap Co., 2–1–3 Bunka, Sumida, Tokyo). *Yukagaku* 20, 160–4 (1971). The interfacial tension of oily soil and water containing sodium dodecylsulfate (SDS) or builders was measured in a Saite's apparatus. With increasing of SDS concentration, the interfacial tension at polar oily soil (oleic acid, triolein, mixed oil and natural soil)-water interface was remarkably lowered as compared with that at nonpolar oily soil (Nujol)-Water. Na_2SO_4 reinforced the interfacial tension lowering. The interfacial tension of oily soils containing free fatty acid-water interface was not affected by Na_2SO_4, but was lowered with increasing amounts of alkaline builders. Alkaline builders also exhibited the same effect, when applied to the system of triolein-water. The effect of detergent builders on the interfacial tension of polar oily soil-water interface was great. A mechanism of oily soil removal from fabrics was proposed and discussed.

THE ADSORPTION OF SURFACE ACTIVE AGENTS AT OIL-WATER INTERFACES CONSIDERED FROM ELECTROCAPILLARITY. A. Watanabe and H. Tamai (Faculty of Textile Sci., Kyoto Univ. of Ind. Arts and Textile Fibers Sakyo-ku, Kyoto). *Yukagaku* 20, 101–6 (1971). The adsorbability of surface active agents at oil-water interfaces and the inorganic electrolyte effect on it were studied by electrocapillary curves. The oil phase was the methylisobutylketone solution of tetrabutylammonium chloride and the aqueous phase contained anionic, cationic or nonionic surface active agents in addition to inorganic electrolyte. The kind and concentration of electrolyte strongly affected the interfacial tension. Linear relations were found between the interfacial excess of surface active agent and the cubic root of surface active agent concentration, and between the former and the cubic root of ionic strength. These conformed to the Davies' equation. The free energy of desorption was calculated as 750 cal mol^{-1} for each –CH– in regard to alkylsulphate ions of various chain lengths.

ANALYSIS OF ALKYL COMPOSITION OF ALKYL-POLYGLYCOLETHER-SULFATE (AP) IN LIQUID SHAMPOOS. Y. Iwamoto, S. Kobayashi, N. Toyota and K. Iwase (Mitsuwa Central Lab., Mitsuwa Soap Co., Yahiro, Sumida-ku, Tokyo). *Yukagaku* 20, 510–12 (1971). AP sample in 10% HCl was refluxed for 2 hr and extracted with petroleum ether. After evaporation of solvent, 5 ml of HI (55–58%) was added to 2 g of the extract and refluxed for 90 min. Alkyliodide in the solution was extracted with petroleum ether and analyzed by GLC.