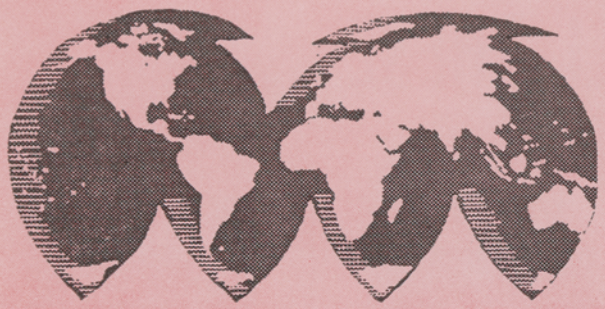
# THE FOUR CORNERS . . .



By EUGENE MARSHACK, Chairman
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## Australia . . . . . J. E. Allan

### Oil Seed Crops

Preliminary estimates of the 1970/71 oilseed crop, based upon the acreage planted, indicate a substantial increase in the production of oilseeds in Australia. As shown in the following Table there could be a 100% increase in production.

OILSEEDS CROP 1970/71

| State | Cotton-seeds | Pea-nuts | Saf-flower | Sun-flower | Lin-seed | Soya | Rape | Total |
|---|---|---|---|---|---|---|---|---|
| Queens-land | 15,000 | 8,000 | 200 | 7,000 | 2,200 | 3,000 | | 35,400 |
| New South Wales | 45,000 | | 8,000 | 47,000 | 17,000 | 1,000 | 17,000 | 135,000 |
| Victoria | | | 2,000 | | | | 23,500 | 25,500 |
| South Australia | | | | | | | | |
| Western Australia | 5,000 | | 1,000 | | 15,000 | | 20,000 | 41,000 |
| Total | 65,000 | 8,000 | 11,200 | 54,000 | 34,200 | 4,000 | 60,500 | 236,900 |
| 1969/70 Estimate | 44,000 | 11,000 | 4,000 | 14,000 | 35,000 | 1,300 | 4,500 | 113,800 |

The most significant areas of increase are in sunflower (fourfold) and rapeseed (13-fold).

While work is continuing on the development of local varieties of soybeans for Australian conditions there does not yet appear to be the real breakthrough that is required to establish soybean growing as a truly commercial oilseed crop.

### Crushing Capacity

As a result of the increase in local production of oilseeds two Companies have announced plans for expansion and new installation of processing facilities.

One of the major crushing mills, Meggitts Ltd., has announced the rebuilding of their main mill in New South Wales and considerable expansion of capacity in their Victorian Mill. Plans for the N.S.W. expansion include the installation of a solvent extraction plant. This will be only the second continuous solvent plant of significant size installed in Australia.

In addition, a newcomer to the oilseed industry has announced plans for installing a solvent extraction plant also. The Ricegrowers Co-operative Mills Limited plan to install a plant to process rice bran and oilseeds with an annual oil production within four years of some 10,000 tons per annum.

### Oil Producer's Creed

It's not that we're dishonest,
A lot of con men, or just crooks,
And we hope some day we're listed,
In recording angels' books,
But the shareholders want profits
Our employees need a job
And the customers are people
Whom we can't afford to rob.

So we do our best by coping
With the drought and plagues of mice,
The breakdowns in equipment
And a cash flow played with dice,
So we hope that you'll forgive us
If we're cynical indeed,
But our philosophy is stated,
In the Oil Producer's Creed—

"We believe in buying
What isn't there to get,
And pay for it with money
That isn't ours—not yet.
We believe in selling
What isn't ours to-day,
And pray that we get more for it
Than what we didn't pay."

## Canada . . . . . Bernd Weinberg

### Oilseeds

The production of the three edible oilseed crops in Canada, rapeseed, soybeans and sunflowerseed, reached an all-time high of 2.1 million short tons in 1970 as compared with 1.1 million tons in 1969. Rapeseed, grown in the three Prairie Provinces, accounts for over 80% of the total.

Rapeseed acreage doubled from 2 million to close to 4 million acres and total output of 71.3 million bushels (1.78 million tons). The domestic market will not absorb much more than 10 million bushels during the current crop year. Exports may rise to above 40 million bushels, going mainly to Japan but also to various European countries. Consequently, a substantial carryover can be expected, which will assure the continuous supply of overseas customers.

Soybean production, which is restricted by the climate to a limited acreage in southern Ontario, exceeded 10 million bushels at an average yield of 31.0 bushels per acre.

Sunflowerseed production increased to 27,700 tons. Most of it is grown under contract in Southern Manitoba, and crushed locally. A small fraction of this crop is used as birdseed and for confectionary purposes.

In 1970 Canada also produced 187.9 million pounds of mustard seed on 200,000 acres. This seed is not crushed and the bulk is exported for condiment usage.

In the inedible sector, the flaxseed acreage increased from 2.34 million in 1969 to 3.37 million acres in 1970, and a growth of the crop from 27.5 million to 48.9 million bushels (1.37 million tons). Most of this crop is exported as seed, competing for a share of the world market with Argentina and the United States.

The spectacular increase in Western Canadian oilseed acreage in 1970 can be attributed mainly to two factors: (a) As a result of the wheat surplus, farmers accepted Federal Government encouragement to cut the wheat acreage by 50% to 12.5 million acres. Approximately 3 million acres of this land was diverted to oilseeds. (b) Strong world demand for oil and meal, combined with

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relatively high prices made rapeseed most attractive to farmers looking for a cash crop.

Until 1970 rapeseed crushing was largely confined to four mills in Western Canada. This industry is currently undergoing a rapid expansion, both in Western and Eastern Canada. It is estimated that by the end of 1971 the rapeseed crushing capacity will have tripled to about 700,000 tons per year. The current rate of domestic crushing ranges above 200,000 tons annually. Consequently, it can be expected that Canadian oilseed crushers will offer rapeseed oil and meal in large volume on the world market.

### Nutritional Properties of Rapeseed Oil

Research workers in France, Holland and Canada have been reporting evidence in recent years which indicates that rapeseed oil is not being metabolized by some animals in a manner similar to most other edible oils. It was found that rapeseed oil high in erucic acid, when fed in substantial amounts to weanling rats, caused a transitory accumulation of fat in the heart muscle. Long-term experiments led to necrotic changes in the heart muscle, which may also be partly related to the erucic acid level in the diet.

While these changes occurred only at levels far in excess of those found in the human diet, and while no harmful effects on humans have been attributed to the consumption of rapeseed oil, it was nevertheless considered prudent by Canadian authorities to accelerate the changeover of the rapeseed crop to varieties free of erucic acid. The new oil, which contains about 60% of oleic acid, 25% linoleic acid, 9% linolenic acid and about 5% saturated acids, is known as Canbra oil (Canadian Brassica). Preliminary tests carried out on a plant scale indicate that the new oil possesses many desirable properties in the manufacture of salad oils, shortenings and also margarine. In fact, it appears likely that the tailor-made oil from seed developed by Canadian plant breeders will find a much larger market than the traditional rapeseed oil.

It is possible that 500,000 acres will be grown to the new crop in 1971, and that the entire Canadian acreage will be converted to low- or zero-erucic acid rapeseed varieties in 1972. The plant breeders, however, are continuing the development of superior and more desirable varieties, which will also be free of progoitrins, will have a much lower hull content and will show an appreciably higher oil and protein level.

## France . . . . . M. Naudet

### Symposium in Marseilles

The annual symposium of the National Laboratory of Fats and Oils will be held this year in Marseilles, on April 8, under the sponsorship of the University of Provence and the Fats and Oils Institute.

The theme of the symposium will be "Some Analytical Aspects of the Problem of Autoxidation." Four papers will be presented: (a) Characterization and Amount of Antioxigens; (b) Characterization and Amount of Prooxigens; (c) Study of Volatile Materials Resulting From Autoxidation; and (d) Study of Nonvolatile Materials Resulting From Autoxidation.

The lectures will be published in a special booklet to appear at the end of September.

### Short Course Organized by the Fats and Oils Institute (ITERG)

The traditional short course organized by the Fats and Oils Institute every year in Paris, will be held on May 11, 12 and 13, 1971.

The topic chosen this year by the organizing committee, chaired by Professor Desnuelle, is "Fats and Oils in Human and Animal Nutrition."

The first day will be devoted to problems of nutrition and physiology. The following papers will be presented:

(a) Normal Function of Fats and Oils:
—New Knowledge on the Nutritional Value of Different Fats in Human Nutrition.
—New Knowledge on the Nutritional Value of Different Fats in Animal Nutrition.

(b) Effect on Health
—Physiopathological Effects of Different Fats in Human Nutrition.
—Fats and Oils in Frying: Chemical and Physiological Aspects.

During the second day, the following topics will be discussed under the main heading of Treatment to Improve or Preserve the Quality and Properties of Lipids:

—Selective Hydrogenation.
—Interesterification Between Animal Fats and Vegetable Oils.
—Fractionation, Refrigeration and Dehulling.
—Conservation and Storage.
—Incidence of Metal Traces on the Stability of Oils.
—Practical Considerations of New Methods of Analyses of Such Traces.
—Bacteriology and Mycology of Fats.
—Additives for Edible Fats.

"Utilization of Lipids—Development of New Products Considering Marketing-Research" will be the theme of the third day. The following papers will be presented:
—Motivation and Criteria of Choice of Fats and Oils in a Community.
—Fats and Oils in Seasoning Products.
—Fats and Oils in Cooking and Confections.
—Fats and Oils in Poultry Food.
—Fats and Oils in Artificial Milk.

Distinguished guests, French and foreign, have already agreed to present these interesting reports.

The papers, as well as following discussions, will appear in a special issue of the Revue Française des Corps Gras.

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# FIRST CALL FOR PAPERS

### AOCS 45th Annual Fall Meeting

G. A. Jacobson, Technical Program Chairman, has issued a call for papers to be presented at the AOCS Fall Meeting, October 3–6, 1971, Chalfonte-Haddon Hall Hotel, Atlantic City, New Jersey.

Papers on lipids, fats and oils, and all related areas are welcome.

Submit two copies of a 100- to 300-word abstract with title, authors and speaker to Dr. Glen A. Jacobson, Campbell Institute for Food Research, 100 Market Street, Camden, N.J. 08101.

The deadline for submitting papers is June 1, 1971.

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# Germany . . . . . H. K. Mangold

## Meetings

Several scientists from Germany attended the World Fat Congress which was held at the Hilton Hotel, Chicago, in the Fall of 1970. All of them considered the Congress to have been a most rewarding event, and returned home with pleasant memories of Chicago and the United States of America. They certainly appreciated the kind hospitality of their American friends and colleagues.

Shortly after the World Fat Congress, from October 11 through 16, 1970, the German Society for Fat Research (D.G.F.) held its annual meeting at the Hilton Hotel in Düsseldorf. The meeting was attended by about 800 people, over 100 of whom came from countries outside the Federal Republic. There were 75 papers presented.

## J. Baltes New President of D.G.F.

G. Hopf, the outgoing president of the D.G.F., welcomed the new president, J. Baltes, Hamburg, who had been elected unanimously by the members of the society attending the meeting. Dr. Baltes is well known in the lipid field, especially for his contribution to the technology of fats and oils. As Manager and Director of Research, he has been responsible for the development of a most advanced plant at the "Harburger Oelwerke Brinkmann & Mergell," Hamburg.

## W. A. Menne, Recipient of "Normann Medal"

At the Düsseldorf meeting of the D.G.F., the "Normann Medal" was awarded to an industrial chemist, W. A. Menne of Frankfurt. For over 25 years, Dr. Menne has maintained great interest in the D.G.F. and has enthusiastically furthered the cause of the society. He has given generous help and encouragement, especially in times of crisis. Dr. Menne's award address will be published in a forthcoming issue of "Fette, Seifen, Anstrichmittel."

Previous recipients of the Normann Medal include two Americans, A. R. Baldwin, Vice President of Cargill, Inc., Minneapolis, Minnesota (1951), and W. O. Lundberg, Director of the Hormel Institute of the University of Minnesota, Austin, Minnesota (1957).

## The "Heinrich Wieland Prize"

This prize, worth DM 10.000, is awarded annually for notable contributions in the field of lipid biochemistry. In 1970, the winners were C. Bode and H. Goebell of the Philipp University at Marburg. They received the prize at a ceremony in Munich in recognition of their work on alcohol-induced fatty liver.

# Israel . . . . . A. Letan

## The Industry of Edible Oils in Israel

Despite the widely spread belief, the edible oil industry in Israel is only very marginally concerned with the production of olive oil (below 1% of the total output), and its activities are mainly directed towards processing soybeans imported from the Western Hemisphere. Soybean oil production amounts to about 85% of the total oil yield of the local plants.

The production of cottonseed oil amounts to about 10% of the total oil output, made from local grown crops.

Oils extracted from other crops (locally grown safflower, peanuts, corn and castor, and from imported linseeds, coconut and sunflower) account only for about 5% of the total production.

In Israel, olive trees are predominantly cultivated by Arab farmers, whose interests are protected by the Ministry of Agriculture. As a result of this policy, the olives are pressed only in rural areas, in Arab-owned oil-presses. Part of this production reaches centrally located industrial plants, in which the oil is refined and packed.

The local oil industry is predominantly oriented towards processing of soybeans and the six existing plants combined (Shemen, Etz-Hazayit, Izhar, Teth-Beth, Olivex and Tavlin) are capable of extracting about 2,200 tons of soybeans in 24 hr.

The factories operate modern extraction installations, which have been built either by Desmet or French, or by the local oil-producing industries themselves (in their own workshops). Two of these factories (Etz-Hazayit and Shemen) extended their activities towards planning and building oil equipment for export.

All of the factories have facilities to produce degummed, semirefined or deodorized oil; several of them (Shemen, Etz-Hazayit, and Teth-Beth) also hydrogenate the oil (overall capacity of about 50 tons per day) and produce shortenings and margarine (through their subsidiary companies). Also in the oil refining, as in other processes and operations, mainly modern equipment and continuous operations are used for degumming, neutralization, bleaching and deodorization of the oil. Hydrogenation still remains a batch process.

Much of the commercial lecithin (over 60% acetone insolubles, below 1% moisture) goes for export (about 70 tons per month). One of the oil factories (Etz-Hazayit) dries the lecithin continuously in a falling-film vacuum evaporator; the others operate batch vacuum-evaporation apparatuses. Part of the meal and of the oil (degummed, semirefined, refined or deodorized) is also exported; the amounts and the items vary with time. Lately meal was sold to Cyprus, Roumania and also to several countries in Asia. Degummed soybean oil was bought by several Western European countries; also, most of the production of refined cottonseed oil was exported to Western Europe.

It is worth mentioning that high protein meal has a big market in Israel itself, as the local meat production is based on meal obtained from oil-producing plants. (The question whether the meal or the oil is a by-product of the oil industry is still open for discussion.) All of the plants have facilities for combined meal, desolventizing and toasting (a flash desolventizer of their own make is now being "run in" in the Etz-Hazayit factory). Pellets from cottonseed waste (for admixture to feeds for animals) are being made by several of the factories.

All of the soapstock is acidulated and the fatty acids are used for production of soap or for addition to feeds for animals. Shemen, Etz-Hazayit, Izhar and Teth-Beth also operate plants for the production of detergents and cosmetics.

## Equipment-building for Export Undertaken by Two Israeli Oil-producing Companies

It is a known fact in Israel that the local oil factories were for years acquiring equipment by building various items in their own workshops. Two of the oil-producing companies lately extended their activities to planning and building wholly equipped oil plants for export.

The Etz-Hazayit Ltd. (Kiryat-Arie, in existence since 1932) founded a subsidiary in 1964, the HLS Ltd. (also located in Kiryat Arie), which in 1966 won a contract for planning a $3 million worth oil factory in Bangkok (for processing of soybeans, coconut, rice bran and cottonseed), and has also built part of the necessary equipment. The Israelis are now partners in that oil factory, which has been inaugurated by the Crown Prince of Thailand.

In 1967 the HLS Ltd. built, exported and installed a $0.6 million oil extraction plant near Teheran capable of processing 200 tons of rice bran or 300 tons of soybeans per day. In 1968 it installed two factories in Hong-Kong ($2 million contract, equipment built in Israel), with facilities for prepressing, extraction and pelleting.

The activities in 1969–1970 included supply and installa-

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tion of a $0.2 million refining and deodorization plant in Singapore and of a $0.3 million plant for oil refining and margarine production in Cyprus. In the same period planning and know-how were provided for an oil company in Turkey and for an oil factory in Mauritius (here also some additional equipment was provided).

By far the greatest achievement of the HLS Ltd. was the export, installation and operation (in 1970) of a $2.2 million worth oil factory, wholly built in Israel by the HLS, this time for South Korea (Dow Bang Oil and Flour Mills Co. Ltd., Seoul). Two sets of equipment had to be built, since the first one perished when the boat transporting it sank in the Indian Ocean. The lost factory was rebuilt in eight months (in Israel) and is already being tested (in Korea). The equipment includes dehullers, dryers, conditioners and flakers, an oil extraction plant (horizontal basket extractor for 200 ton/day of soybeans), apparatuses for continuous degumming, neutralization, bleaching and deodorization and a hydrogenator (10 tons/day). It also includes a plant for margarine production (600 kg/hr), equipment for separation and drying of lecithin, for extraction of the oil from bleaching earth, facilities for flash desolventizing, toasting and grinding of the meal, and also for the production of plastic containers for the pure oil.

The Shemen Ltd. (Haifa, in existence since 1922) joined in 1970 the engineering and design company FID Ltd. (Food Industries Development Ltd., International, also situated in Haifa) for a series of projects for planning and building oil plants. (The FID acted for many years as Shemen's consultant for plant development and engineering.)

Several joint projects of wholly equipped oil factories were prepared in May 1970. They are now being discussed with potential customers in several African, Far East and Latin American countries. An example of a Shemen-FID joint project is a $0.9 million plant for processing 120 tons of soybeans per day (prepressing, extraction, refining and deodorization).

There are several common characteristics between the HLS-Ttz-Hazayit and the FID-Shemen plants. Both provide the customer with detailed planning based on the know-how of their own oil factories, and they transmit this know-how to the customer; they build the equipment themselves, and are in a position to adjust it to the special wishes of the customer; they are willing to install the equipment and to help operate it, if necessary, with their own personnel, and provide the necessary training of the customer's personnel (engineering, technology, administration and trade) in their own factories in Israel.

## Italy . . . . . Giovanni Jacini

### Fourth Italian Symposium on Detergents

Last November 20–21, the Fourth Italian Symposium on Detergents took place at Sorrento, Naples, organized by the Italian Oil Chemists' Society (Società Italiana per lo Studio delle Sostanze Grasse).

The subject of the symposium had never been discussed so specifically in Italy. Eight lectures were delivered:

E. Leone (University of Naples) on Proteolytic Enzymes: Recent Advances.

L. C. Balslev, et al. (Novo Industri A/S, Kopenhagen) on Methods of Production and Control in a Modern Detergent Enzyme Factory.

J. G. Huig (Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V., Delft) on Some Aspects of the Use of Enzymes in Detergents.

G. Selvatici (Henkel Italiana SpA, Milano) on Formulation and Production of Enzyme Detergents.

J. Thiernagand (Procter & Gamble, European Technical Center, Strombeek, Bever) on Considerations on the Usage of Enzyme Detergents.

G. Luft (Unilever SpA, Milano) on Patents in the Development of Enzyme Detergents.

A. Arpino and P. Guastalla (Experiment Station for Oil and Fats, Milano) on Analysis and Evaluation of Enzyme Detergents.

R. Latini et al. (Sigma SpA, Bergamo) on Compatibility of Whiteners in Enzyme Detergents.

A synopsis of the symposium was presented by G. Jacini, Secretary of the Italian Oil Chemists' Society.

—The new Board of the Italian Oil Chemists' Society has been elected for 1971–1972. New chairman is Umberto Pallotta, Full-Professor for Agricultural Industries, University of Bologna. Secretary is G. Jacini, Director of the Experiment Station for Oils and Fats, Milano, Italy.

—The Ministry of Health brought a bill before the Parliament prescribing the usage of "soft" detergents degradable at least 80%. The bill if approved will come into force six months after approval.

## Scandinavia . . . . . Reinhard Marcuse

### Denmark

#### Sixth Northern Fat Symposium

The Sixth Northern Fat Symposium will be held at the Hotel du Nord, Grena, Denmark, June 21 to 25, 1971.

The lectures of the symposium, on fat chemistry and technology, as well as the role of fats in nutrition, will be divided into four sections: Fatty Raw Materials, New Processing Techniques, Nutrition, and Analytical Methods. The following plenary sessions will be delivered by distinguished lecturers:

"The Fatty Raw Materials of the Future," by Thorkil Kristensen, Ex-Minister of Finance, Professor, Instituttet for Udviklingsforskning, Copenhagen.

"The Adaptation of Vegetable Raw Materials and Future Possibilities," by Gösta Anderson, Fil. dr., Sveriges Utsädesförening, Svalöv.

"Animal Fat—Control of Quantity and Composition," by P. E. Jakobsen, Professor, Landøkonomisk Forsøgslaboratorium, Copenhagen.

"The Kinetics and Techniques of the Fat Hydrogenation," by Nils Herman Schöön, Professor, Chalmers Tekniska Högskola, Göteborg.

"The Importance of Fats to Health and Sickness," by Per From Hansen, Chief Physician, dr. med., Københavns Amts Sygehus, Glostrup.

"The Metabolism of Fatty Acids in the Organism," by E. Aaes Jørgensen, Professor, dr. phil., Danmarks Farmaceutiske Højskole, Copenhagen.

"A Doctor's List of Wishes to Food Manufacturers," by Erling Olesen, Chief Physician, Københavns Kommunehospital, Copenhagen.

In continuation of the plenary lectures, short papers referring to original works will be announced.

Wednesday June 23 is reserved for factory visits. The participants will have the possibility of visiting two of the following factories: Aarhus Oliefabrik A/S (edible oils, fatty acids etc.); FDB's Fabrikker, Viby (margarine etc.); JAKA (tinned meat and finished dinners); Grena Mejeri (milk, butter, cheese).

The Symposium will be conducted in Danish, Norwegian and Swedish.

For further information contact Ole Tolboe, M.Sc., Head of Department Jydsk Teknologisk Institut Århus, Denmark.

#### New Department of Biochemistry in Copenhagen

E. Aaes-Jorgensen has been named professor and head of a new Department of Biochemistry established at the Royal Danish School of Pharmacy, Copenhagen. Also in the staff is Benny Jensen. The initial teaching program

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comprises a lecture course in dynamic biochemistry and enzymology, and will eventually expand to elective lecture and laboratory courses primarily with relation to the research program in the field of lipids. Courses for postgraduate students will also be developed at the department. The research program is intended to expand along the lines of the metabolism and the nutritional effects of dietary isomeric (positional as well as geometric) fatty acids, particularly in relation to the EFA-deficiency syndrome.

## Norway

**Research on Hydrogenated Fish Oil in Feeds at Vollebeck**

Experiments are presently being conducted at the Animal Nutrition Department of the Agricultural College of Norway at Vollebeck to extend the present knowledge and aspects of feeding hydrogenated fish oils. The project is under the leadership of Frik Sundstøl and is sponsored by the Fish Industries Research Fund. Preliminary results from the feeding of pigs and cattle were reported at the Scandinavian Agricultural Research Meetings in Kalnes 1969 and Nyborg 1970.

## Sweden

**Scandinavian Agricultural Research Meeting**

The next meeting of the Scandinavian Agricultural Research will take place in Uppsala, Sweden, in June 1971. While the two previous meetings concentrated upon feeding and animal products quality, the coming symposium will discuss protein problems as one of the main topics.

**Leading Swedish Margarine Manufacturer Moved**

Margarinbolaget AB, leading margarine manufacturer in Sweden, recently moved its Research and Development activities to new headquarters. The building has a total area of about 3600 $m^2$ and has three floors. The basement includes pilot plats for margarine production and oil refining. The ground-floor includes cafeteria and lecture room for about 60 persons, test kitchen, rooms for sensory evaluation of food products and also a test bakery with complete mechanical equipment. Thousands of recipes from all over the world are collected here. The upper floor includes administration, product development and packaging development, a special department for evaluations of raw material, a documentation center and a well-equipped analytical department.

The total cost for the development center amounted to about U.S. $1 million dollars. The staff consists of about 50 employees.

## Next ISF-Congress June 18-22, 1972, in Göteborg/Sweden

An invitation has been issued by the Swedish Academy of Engineering Sciences to hold the next Congress of the International Society For Fat Research (ISF) in Sweden, and has been accepted. President of the Congress and, consequently, for ISF will be professor Sune Bergström of the Karolinska Institute, Stockholm, and Secretary General of the Congress will be associate professor Kare Larsson, Göteborg. The arrangements will be prepared in collaboration with Dr. R. Marcuse, Secretary General of ISF. The Organizing Committee will include representatives of all Scandinavian countries. Great endeavours are being made to make both the scientific and the social events most attractive. Special symposia will be arranged before, during and after the Congress. Preliminary room reservations have been made in order to be able to gather as many colleagues from all over the world as possible. They will be officially welcomed by the City of Göteborg.

**Scandinavian Seminar on TBA-test at SIK, Göteborg**

As a part of the activity of the Scandinavian LIPID-FORUM, a seminar is held at SIK, Göteborg on March 25 on the TBA-reaction for measuring fat rancidity. About 12 contributions from participants from Denmark, Norway and Sweden have already been announced. They cover both background research and practical application in various fields of food technology.

# Yugoslavia . . . . . B. Ostric-Matijasevic

## Meeting of Technologists of the Oil Industry

The Association of Vegetable Oil Producers held two meetings in 1970. The papers and discussions dealt with problems of the oil industry in Yugoslavia.

During the first meeting, held in January 1970, the following papers were presented:

1. The Use of Modern Pesticides and the Problems of Their Residue in Food.
2. Refining of Sunflower Oil Under Continual Plant Production.
3. Edible, Refined Oil in PVC Bottles.
4. The Importance and Application of Gas Chromatography in the Chemistry of Lipids.
5. Parallel Investigations of the Quality of Catalysts by Means of Laboratory Hydrogenation.
6. The Problem of Waste Water From the Standpoint of Oil Industry.
7. Proposition of Analytical Methods for the Determination of Oil Color.

The meeting was held in the oil factory of Zagreb so that the participants could examine its equipment. The production capacity of this factory makes it one of the three biggest and the most modern factories in the country. The factory includes the continual Sharples plant for neutralization of oil, as well as the plant for the production of plastic bottles for oil.

The second meeting was held in October, 1970. The following papers were presented:

1. Waxes in Sunflower Oil and Methods for Their Removal.
2. Application of UV Spectrophotometry to Determine the Quality of Oils.
3. Losses in the Continual Refining Process, Problems and Means of Rapid Determination.
4. Some Aspects of Refining Sunflower Seed, Yield of 1969.
5. Chemistry of Sunflower Seed, Husk and Core.
6. The Chemistry of Sunflowers With High Oil Content.
7. The Influence of Certain Fractions of Sunflowerseed on the Quality of Seed During Storage.
8. Changes in the Quality of Sunflower Oil With Different Quantities of Husk Added to the Core to be Refined.

The meeting was held in the oil factory of Dubrovnik. Besides its plants for the production of oils, this factory is equipped for distillation of fatty acids and the production of stearine. The papers presented at this meeting dealt primarily with the problems of the quality of sunflowerseed and sunflowerseed oil. These problems are of special importance for the oil industry in Yugoslavia because sunflowerseed is the most important raw material for the production of oil.

All of the papers presented will be published in a "Bulletin of Vegetable Oils and Fats," of the Journal of Oil Industry. This journal appears four times a year and is published by The Association of Vegetable Oil Producers, Belgrade.