Four Corners

Chairman, International Relations – Eugene Marshack • Corresponding Secretaries – M. Bergel and H.K. Mangold

Argentina ..... Meny Bergel

Four meetings have recently been held or will shortly be held that are of potential interest.

On July 26-27, a meeting on "The Study of the Methods of Analysis to Determine the Quality of Oils" was held in Buenos Aires under the sponsorship of the National Ministry of Chemistry under the secretary of finance.

Two meetings will be held in October. A Conference for the Study of Analytical Methods to Determine the Effect of Preservatives in Foods will be held Oct. 25-26 in Buenos Aires under sponsorship of the National Ministry of Chemistry. A conference entitled "Preservation of Foods by Radiation" has been scheduled for October by the School of Applied Sciences in Industry of the National University of Cuyo. The conference is scheduled for San Rafael.

A fourth meeting, "Conference on the Capacity of Human Resources in Nutrition" is being planned by the School of Veterinary Science of the National University of the Center in the Province of Buenos Aires.

Germany ..... H.K. Mangold

Guest scientist at Münster

During the past year, Walter O. Lundberg and his wife Olga have resided in Münster, where he has been a Visiting Professor at the Institute for Biochemistry and Technology – H.P. Kaufmann Institute – of the Federal Center for Lipid Research. This was made possible because he received a Senior U.S. Scientist Award from the Alexander von Humboldt Foundation.

W.O. Lundberg is an Emeritus Professor of Biochemistry and the retired Executive Director of the Hormel Institute of the University of Minnesota, where he was active in teaching and in conducting and administering research in lipidology from 1937 to 1974. He is a past president of the American Oil Chemists' Society and a past president of the International Society for Fat Research.

During his stay, Dr. Lundberg worked primarily on the autoxidation of unusual lipids. He authored and coauthored publications on the chemistry of chaulmoogra oils, cyclopentenyl fatty acids, essential fatty acids, and methods of lipid research. The Lundbergs traveled to Denmark, England, Finland, India, Spain, and Sweden. He gave invited lectures in the aforementioned countries and in Germany.

In the beginning of September, following the International Conference on the Biochemistry of Lipids in Cologne, the Lundbergs returned to Minnesota.

At about the same time, S.S. Radwan, a guest from Cairo, Egypt, will be returning home. For the last two years, he has studied lipid metabolism in heterotrophic and photoautotrophic plant cell cultures, and he has developed methods for the biosynthetic preparation of radioactively labeled phospholipids. S.S. Radwan, who is professor of botany at Ain Shams University, Cairo, and scientist at the Federal Center for Lipid Research, Münster, will continue to cooperate in work on the preparation of natural products by means of plant cell cultures.

Dr. M. Cetin, a guest scientist from Ankara, Turkey, and T. Fujikawa from Tokyo, Japan, who have worked at the Institute of General and Analytical Chemistry, also returned home in September.

Isomeric monounsaturated fatty acids

A group of scientists at the Federal Center for Lipid Research, Münster, is engaged in a long term project on the biochemical and nutritional aspects of isomeric monounsaturated fatty acids which commonly occur in partially hydrogenated dietary fats.

A simple method has been worked out for the preparation of fairly uniform mixtures of radioactively labeled positional isomers of *cis*- and *trans*-octadecenoic acids – Richter et al., Z. Naturforsch. 33c, 629 (1978). Partial hydrogenation of methyl [1-^{14}C]linolenate followed by argentation chromatography yields a fairly uniform mixture of positional isomers of methyl *trans* [1-^{14}C]octadecenoates, which on *trans-cis*-equilibration and argentation chromatography, affords the corresponding mixture of positional isomers of methyl *cis* [1-^{14}C]octadecenoates. Hydrolysis of the methyl esters yields the corresponding mixtures of *trans*- and *cis*-octadecenoic acids. Such "mixed substrates" have been used in studies concerned with lipid biosynthesis in plant cell cultures – Richter et al., Z. Naturforsch. 33c, 303 (1978); Weber et al., Planta 145, 479 (1979).

A study of the distribution of the double bond in octadecenoic acids of lipids in cell suspension cultures of parsley has revealed that the major isomer is oleic acid, whereas in seed lipids it is petroselinic acid.

Rats fed a partially hydrogenated soybean fat have been found to incorporate the individual positional isomers of dietary *cis*- and *trans*-octadecenoic acids into the various tissue lipids in a specific manner – Reichwald-Hacker et al., J. Nutr. 109, 565 (1979) Stereospecific analysis of the cardiac and hepatic glycerolipids revealed that the dietary *trans*-octadecenoic acids, irrespective of the position of their double bonds, are selectively incorporated into the 1,3-positions of triacylglycerols and the 1-position of diacylphosphoglycerides – Reichwald-Hacker et al., in preparation. Lipids of several tissues of rats fed unhydrogenated soybean oil contained none of the *trans*-octadecenoic acids but relatively large proportions of vaccenic acid, the *cis*-11 isomer of oleic acid – Reichwald-Hacker et al., J. Nutr. 109, 1051 (1979). The enzyme specificities observed earlier in vitro using individual octadecenoic acid derivatives as substrate do not seem to apply to whole organisms, in which a large number of isomers occur as competing substrates. In this respect, in vitro studies using "mixed substrates" might be useful for interpreting the data obtained in vivo.

New Publication

In May of this year, the Deutsche Gesellschaft für Fettwissenschaft (DGF) conducted a symposium on frying fats. The proceedings of this symposium have now been published as a special issue of the journal Fette. Seifen. Anstrichmittel. This special issue is available from DGF-Geschäftsstelle, Soester Str. 13, D-4400 Münster, Germany.