

Minneapolis Meeting Features Outstanding Technical Program

W. E. Link, Program Committee Chairman, announces an outstanding Technical Program for the Fall Meeting. Obviously sheer numbers of papers do not assure a quality program, but an outstanding program must offer the audience a wide range of subjects to appeal to widely varying listeners' interests. With 160 papers the Fall Meeting will be one of the largest in the history of the Society. Browse through the detailed program which is presented in this issue of your *Journal* and you will find dozens of reasons why you must attend the 43rd Fall Meeting in Minneapolis.

What is your field of major interest, detergents? human nutrition? edible oils? analytical instrumentation? lipid biosynthesis? drying oils? fatty acid chemistry? solvent extraction? marketing? food additives? You will find challenging technical information at the Fall Meeting regardless of your position in fats and oils research, engineering, processing or marketing.

Previous issues of the *Journal* described a few of the symposia to be presented at Minneapolis. Highlights of several other symposia follow.

Nuclear Magnetic Resonance— New Process Analyzer to be Introduced at AOCS Meeting

This will be an all day symposium, on Tuesday, October 7. It will review the principles of nuclear magnetic resonance and will describe specific applications of wide-line NMR to analysis of oil seeds and fat products. Varian Associates will introduce a new solid-state NMR process analyzer as a part of the symposium.

During the past two decades analysis of fatty materials has evolved from a somewhat empirical system of evaluation based on a group of "oil constants" to a highly sophisticated, precise characterization by such techniques as gas liquid chromatography, infrared spectroscopy, or thin layer chromatography. Joining these widely established procedures is NMR, a powerful new tool for precise, rapid and nondestructive analysis.

Attesting the world-wide interest in NMR, 5 of the 13 papers of the symposium originate from Europe. From Yugoslavia comes a paper on a method for nondestructive determination of oil content of seeds. Papers from England and Holland describe the use of NMR to determine the solids content of fats. A contribution from Switzerland describes a new instrument, and a Swedish paper outlines process and product control in the fat industries.

Contributions from the United States include a review of the principles of NMR, determination of solid-liquid ratios in fats, determination of oil in emulsions, measurement of fat in corn germ, applications to the corn wet milling industry, and the use of NMR in plant breeding. This latter technique promises to revolutionize breeding of oil seed crops such as soybean, sunflower, rape and castor by nondestructively analyzing individual seeds as a basis for selection for higher oil content.

Ether-Linked Lipids

Some 50 years ago lipids were discovered in Elasmobranch fish livers in which hydrocarbon chains were linked to glycerol through an ether linkage instead of the usual ester linkage. During the past several years there has

been a resurgence of interest in these alkyl and alkenyl esters leading to a three-day symposium at Minneapolis entitled "The Occurrence, Metabolism, and Biosynthesis of Ether-Linked Neutral Glycerides and Phosphoglycerides." Organized by Dr. Randall Wood of the Oak Ridge Associated Universities the symposium will bring together for the first time some 14 leading investigators from Canada, England, Germany and the United States who are working in this relatively new and exciting area of lipid chemistry and biochemistry.

The symposium includes distinguished speakers from several disciplines to review research, assay, synthesis, compositional analysis, physical characterization, chemistry, biochemistry and physiology of the ether-linked lipids. Sessions have been organized on the chemistry of these unique lipids and on biochemical studies in the areas of bacteriology, brain biochemistry, marine biology, oncology and mammalian biochemistry.

Biosynthesis of Unsaturated and Oxygenated Fatty Acids

During recent years chemists and biochemists have taken firm steps forward in elucidating the biochemical pathways by which unsaturated and oxygenated fatty structures are formed. New methods have made possible the study of enzymatic conversion at the subcellular level both in animal and plant tissues, and the many steps in dehydrogenation and oxidation to form unsaturated and oxygenated fatty acids are now being studied intensively. A full day's program on Wednesday, October 8, is being devoted to a symposium on such biosynthesis under the Chairmanship of Lindsay Morris of Unilever, Bedford, England and the Co-Chairmanship of R. T. Holman, Hormel Institute, Austin, Minnesota.

Role of Computers in Fat Chemistry

The popular press is reminding us constantly that we live in the "Computer Age." The first applications for computer in the fats and oils industries were largely in the fields of accounting, inventory control and market analysis. The first technical applications in the fats, oils and related industries were relatively limited—the use of the computer for statistical analysis of chemical data or the bookkeeping type of application of least cost feed formulation.

Within the past several years much more sophisticated technical applications have been made of the powerful electronic data processing and computing capacity of both digital and integral computers. A full day symposium organized by R. O. Butterfield of U.S.D.A.'s Northern Utilization Research and Development Division in Peoria will survey computer technology with special application to the fats and oils chemistry. The uses of the computer will be highlighted for the study of reaction kinetics, simulation of complex reactions such as hydrogenation of polyunsaturated oils or process control in the chemical industry. Among the specific computer applications to be considered are analyses of specific heat data from differential thermal analysis of fats, phase equilibrium in liquid-liquid extractions, evaluation of geometric isomerism of fatty acids, computer automation of gas liquid chromatography, recording and analysis of mass spectra data, and rating of the performance of analytical laboratories.

Turn to page 431A, this issue, for

COMPLETE PROGRAM
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