New Books

J. F. Gerecht, Book Review Editor

Allyl Compounds and Their Polymers, Calvin E. Schildknecht (Wiley-Interscience, New York, N.Y. 1973, 736 p., $29.95).

Allyl Compounds and Their Polymers (including Polyolefins) offers a thorough description of many classes of allylic compounds that have either been homopolymerized or copolymerized. The author has done an effective job in culling the literature and has provided a complete review of the subject. Each chapter is replete with literature references.

The scope of the book can best be defined by giving the chapter titles: Introduction to Polymerizations of Vinyl and Allyl Compounds, Polymerizations of 1-Alkenes, Allylic Diolefins, Allyl Halides and Related Allylic Alcohols, Allyl Acids and Related, Allyl Aldehydes and Ketones, Monoallyl Esters, Allylic Isopropenyl Compounds, Diallyl Carbonates, Diallyl Phthalates, Other Polyfunctional Allyl Esters, Monoallyl Alkyl Ethers and Related, Polyfunctional Allyl Ethers, Allylic Acetals and Ketals, Allyl Aryl Ethers, Allyl Phenols and Related, Allyl Sulfur Compounds, Allyl Amines and Their Salts, Allyl Amides, Allyl Urethanes, Other N-Allyl Compounds, C-Allyl Nitrogen Compounds, Triallyl Cyanurate and Related, Allyl Acrylic Monomers, Diallyl Maleate and Diallyl Fumarate, Other Allyl Vinyl Monomers, Allyl Phosphorus Compounds, Allyl Silicon Compounds, Allyl Boron Compounds, and Allyl Compounds with Metals. The book also contains an adequate index.

Of special interest to chemists working with long-chain fatty acids and related substances, the chapters dealing with allyl esters of long-chain fatty acids and of dibasic acids will be most useful, even though these represent only a small percentage of the total coverage in the book. However, the discussions of the polymerization and copolymerization of allyl ethers, N-allyl-substituted amides, and related compounds should furnish any ingenious chemist with numerous ideas for extending studies into the field of long-chain compounds. Furthermore, since the most frequently encountered unsaturated oils, fatty acids, esters, and alcohols are "allylic," information given in many chapters of this book should be of considerable interest and value to lipid chemists.

The book is relatively free of typographical errors, and it is extremely well organized. Everyone interested in polymer chemistry should have a copy of this book or see that their library purchases it.

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Analysis of Triglycerides, Carter Litchfield (Academic Press, New York, N.Y., 1972, 355 p. $19.50)

This book is an excellent review of triglyceride analysis at a time when, as the author states, the field has reached

• Four Corners . . .

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relaunched their liquid sunflower oil "Salat" in a new design using plastic bottles.

The other new products were "Elidor" and "Pril." The former is a shampoo launched by G. and A. Baker in three different colors and formulations. Amber colored "olive oil," yellow colored pearly opaque "egg," and greenish-yellow transparent "lemon" are the three brands. "Pril" is a dishwash liquid produced by Turyağ Company, İzmir. ■

• Report from Italy . . .

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and the Italian Oil Chemists' Society. Since 1954, 11 Congresses and some 15 meetings, even at international level, have been organized on the various scientific and technological aspects of fatty materials, oil meals, surfactants, etc. All papers have been published in *Italian Review of Fats.*

The SIOG has been collaborating for many years with some working groups of the OCDE (Paris) and the EEC (Brussels), with COI, CID, IUPAC, ISO, ISF, etc. In fact, the Experiment Station had the responsibility to organize the first ISF Congress in 1965. ■

considerable maturity. Between 1956 and 1965 methods were developed so that complete analysis of all triglyceride species in some natural fats is possible, although the amount of work is such that no complete analysis has been reported yet. A clear and comprehensive discussion of the methods which make such an analysis possible is presented.

The introductory chapter discusses nomenclature, the complexity of triglyceride mixtures, and history of triglyceride analysis. It is followed by two chapters on Extraction, Isolation, Measurement, and Fatty Acid Analysis and on Preparation of Chemical Derivatives before Separation.

Chapters four-eight discuss separation methods: Silver Adsorption Chromatography, Liquid Liquid Partition Chromatography, Gas Liquid Chromatography, Fractional Crystallization, and Other Separation Techniques.

Chapters nine and 10 discuss Methods for Determining Fatty Acid Position in the Triglyceride Molecule and Partial Deacylation Reactions and Stereospecific Analysis.

Chapter 11 discusses Physical Properties, and chapter 12, Distribution of Fatty Acids in Natural Triglyceride Mixtures, presents information on the position of various acids in plant and animal triglycerides. This chapter also discusses various patterns or mathematical schemes which have been proposed for relating triglyceride composition to fatty acid composition.

Chapter 13, Combining Methods for Detailed Analysis of Complex Triglyceride Mixtures, compares the major separation and positional analysis techniques to show how they can be combined for a detailed analysis of a complex natural triglyceride mixture. This chapter concludes by mentioning some major unsolved problems of triglyceride analysis: methods for complete analysis of triglycerides with a wide range of four, five, and six double bond fatty acids, automation of chromatographic separation techniques, and a rapid technique for stereospecific analysis.

This book is a comprehensive survey of triglyceride analysis with 978 references. It is a good mixture of general and theoretical material with clear, practical descriptions of experimental techniques. These features, together with the comparison and evaluation of methods and results, make the book valuable to anyone working in the field of triglyceride structure or related areas of lipid chemistry.

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Physical Refining of Oils and Fats, G.B. Martinenghi (Tipolitografia Corbella, Milan, Italy, 1971, 114 p., Lit. 5000 orr S. 8.00).

Physical refining, as discussed in this book, deals with the processing of those crude oils and fats that can be refined advantageously with little or no alkali treatment and satisfactorily deacidified and deodorized in the vacuum deodorizer. Crude oils that would undergo a high loss during alkali refining, because of high free fatty acid content, and those that contain no phosphatides or phosphatides which can be removed adequately without alkali treatment are especially suited to physical refining.

Chapters one and two briefly give introductory material and a history of physical refining. A discussion of prerefining treatments and equipment for conducting them is taken up in Chapter three. Prerefining includes filtration or centrifugation to remove suspended and insoluble material, water, or acidic degumming and batch and continuous bleaching of oil and miscella. Special techniques for treating olive and other oils and fats are described.

Chapter four (53 pages) treats the theoretical and practical aspects of vacuum deodorization. Various types of deacidifier-deodorizers of European design, heating systems, and ejector and mechanical vacuum systems, the latter with refrigerated condensers, are illustrated and described. Also discussed are steam requirements for various deodorizing systems, vacuum attained, and temperatures employed.

In chapters five and six, the author describes complete plant layouts and flow sheets for prerefining and physical refining and cost comparisons between various systems.

The book includes 13 tables and 49 figures, about half of them full page. In some instances, descriptions and explanations accompanying equipment and flow diagrams are too brief to be of value. The book lists 89 references, mostly to European publications. This book could be of value to U.S. oil technicians who treat oils of high acid value. However, physical refining may not be satisfactory for oils intended for hydrogenation, because it is not shown whether catalyst poisons are removed adequately.

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Flavor Chemists elect new officers

The Society of Flavor Chemists elected new officers at the organization's recent annual meeting. New officers are: Manfred H. Vock, president; Al Venutolo, vice-president; Klaus Bauer, secretary; Frank Fischetti, treasurer; and Dick Potter, chairman of the Board. ■