New Books

Biomembranes—Lipids, Proteins, and Receptors, 2nd Edition, Edited by R.M. Burton and L. Packer (B.I.—Sciences Publications, P.O. Box 13121, Webster Groves, MO 63119, 1975, 440 p., $27.50).

This book reports the proceedings of a NATO Advanced Study Institute held at Espinho, Portugal, in 1974. It contains many short chapters describing protein-lipid interactions, membrane functions, receptors, membranes as related to cell functions, and a variety of specific membranes, including those involved in the visual process.

Although we cannot help but wonder how many books on biomembranes the traffic will bear, this is an excellent compilation of a number of broad subjects associated with biological membranes. Because of the rapid advances being made in this area of research, we are of necessity faced with a flood of these reviews. Some of the information contained in this book has appeared in similar texts by the same chapter authors and in some cases suffers from brevity. However, as mentioned above, the breadth of coverage more than compensates for this.

In this age of specialization, this book is refreshing in its attempt to bring physicists and biologists together on a common subject.

The text is highly recommended to anyone actively engaged in membrane research, as well as advanced students who desire a current overview of membraneology.

MARK E. TOURTELLOTTE
Robert G. Jensen
University of Connecticut
Storrs, CT 06268

Block and Graft Copolymerization, Volume 2, Edited by R.J. Ceresa (John Wiley & Sons, New York, NY, 1976).

The outstanding feature of Volume 2 of *Block and Graft Copolymerization* are the two excellent chapters by L.G. Lundsted and I.R. Schmolka on "The Synthesis and Properties of Block Copolymer Polyol Surfactants" and "The Applications of Block Copolymer Polyol Surfactants." The editor of the book has to be congratulated in selecting the above two authors who must be ranked among the top authorities in this field. Lundsted is the well known pioneer in the synthesis and development of block copolymers of ethylene and propylene oxides, such as the "pluronic" polyols and other series, and has also been responsible in the development of many commercial applications of these block copolymers. Schmolka is likewise well known for his many contributions in the development of many new applications of block copolymer polyol surfactants. The background of these two authors is reflected in their meticulous and comprehensive treatment of the subject matter covered in these two chapters.

The various factors in the preparation of these block and graft copolymers are described, although more details in the synthesis of these polymers might have been desirable. However, they can be found in the numerous references cited in the first chapter. Of special value are the many tables giving data on the various properties of these surfactants. The applications of the block copolymer surfactants are described in detail, testifying to the great variety of uses for these classes of surfactants. Details with regard to composition of typical commercial products employing these surfactants will certainly be very helpful to anyone desiring to use or formulate products for the various industrial applications described in the second chapter.

The organization of the chapters is well done and the extensive bibliography contributes greatly to the value of these chapters and testifies to the rapid development of these classes of polyol surfactants since their introduction in 1950.

This reviewer would highly recommend this book to anyone engaged in research and development, manufacture, or marketing of surfactants. It will not only give an insight to the past work done in this area but will undoubtedly inspire future investigators to break new ground in this fascinating and fertile field of surfactants.

K.C. FRISCH
Polymer Institute
University of Detroit
Detroit, MI

Lipids, Volume 1, Edited by R. Paoletti, G. Porcellati, and G. Jacini (Raven Press, New York, NY, 1976, 312 p., $49.50%set, Volume 1 and 2).

Lipids, Volume 1, contains the biochemical orientated papers presented at the International Congress for Fat Research held in Milan, Italy, in September 1974. A second volume, *Lipids,* Volume 2, contains those papers on lipid

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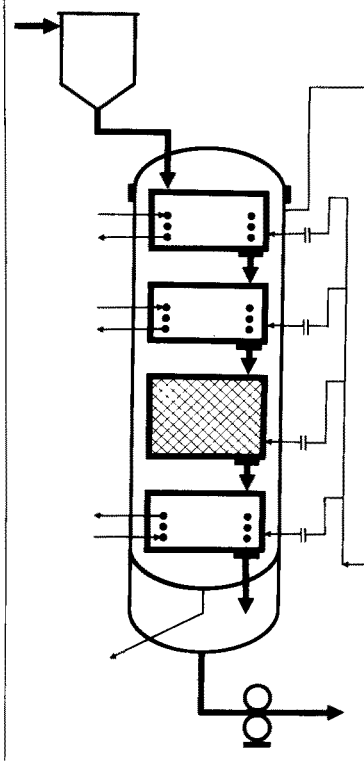

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Volume 1 consists of 29 papers which are distributed into the following categories: plenary lectures (2 papers); chemistry and biochemistry of molecular species of lipids (7 papers); lipases, phospholipases, lipoperoxidases, and lipoxygenases (7 papers); physical properties and lipid composition of membrane (5 papers); lipids and food stuffs (4 papers), and newly discovered lipids (4 papers). The papers range in length from 2-16 pages with the large majority containing 12-13 pages.

Volume 1 contains the table of contents for Volume 2, but Volume 1 does not contain an index. There is really no excuse for this omission, since the index for Volume 1 is included in a cumulative index in Volume 2. The problem with this cumulative index approach is if Volume 2 is lost or separated from Volume 1, the value of Volume 1 is greatly diminished.

The papers in Volume 1 are a mixture of review and original research papers. The review papers are up to date, comprehensive, and objective. The individual authors are normally reviewing topics in their field of interest or research and usually cite heavily their own work and recent data from other similar or related papers. The general trend in the research papers is to be speculative in interpretation of experimental data. Review and research papers in the same section do not normally compliment each other. Most articles are limited to a specific portion of a particular topic, and they are very specialized.

The title *Lipids,* Volume 1 gives the impression that this book might be the first volume in a series designed to provide extensive general coverage in the field of lipid research. This concept is not true. In fact, the book provides coverage of specific topics which may be a disappointment to many readers.

For those who are developing programs or already working in the specific areas covered, Volume 1 provides a good summation of research progress in those areas.

The publishing of Volume 1 is overdue since the Conference was held in September 1974. Consequently, some articles are somewhat dated. Most articles cover the literature or report research through 1973 and into early 1974. An occasional author has updated the paper he originally presented in Milan by including 1975 references.

E.A. EMKEN
Northern Regional Research Center
ARS, USDA
Peoria, IL 61604

Lipids, Volume 2, Edited by R. Paoletti, C. Jacini, and G. Porcellati (Raven Press, New York, NY, 1976, 270 p., $49.50/set, Volume 1 and 2).

This is the second volume of the set which presents the lectures and symposia presented at the International Congress for Fat Research held in Milan, Italy, in September 1974. Volume 2 is devoted to those papers dealing with lipid technology.

The table of contents groups the papers into nine specific topic sections; however, in the text the papers are presented consecutively with no delineation into these sections. The topic sections are: plenary lectures, new trends in the technology of edible fats, new developments in analytical methods, olive oil, lipids in food technology, advances in surface-active agents, flavors, lipids in drugs and cosmetics, new trends in margarine and hydrogenated fats. A total of 31 papers are included, the majority being reports of original research. The notable exceptions are the sections on olive oil, surface active agents, and margarine and hydrogenated fats, which consist exclusively of review articles.

The diversity of the subjects covered makes this volume of interest to most readers of *JAOCS.* Of particular interest are the papers on nuclear magnetic resonance spectrometry, deuterium magnetic resonance, and gas chromatography-mass spectrometry of sterols. While there is some discussion of industrial technology in selected papers, the reader interested in these topics alone would do better to refer to the June 1976 issue of *JAOCS.*

TIMOTHY L. MOUNTS
Northern Regional Research Center
Peoria, IL 61604

Mass Spectrometry of Steroids, by Ze'ev V. Zaretskii (Wiley-Israel Universities Press, 1976, 183 p., $22.50).

This small monograph had its beginning in Moscow at the Institute for Chemistry of Natural Products where the author collaborated with his students and distinguished colleagues since the early sixties on studies expressed in the title and was completed at the Weizmann Institute of Sciences in Israel.

Accordingly, the reader may anticipate discussion of fragmentation patterns of a variety of steroids of major interest to the author, with supplementation from the works of other well known investigators in various areas of the general subject. The first expectation is realized, but the second is not; referrals to recent major reviews by other investigators are conspicuously absent from the references at the end of each of the six chapters.

After a brief discussion of the most common fragment ions of steroid hydrocarbons, the longest chapter of the book is concerned with mechanisms of fragmentation of saturated and unsaturated steroidal ketones, and the stereochemical considerations related to the nature of ring fusion of these ketones. A chapter of almost equal length is concerned with the location and stereochemical considerations of steroidal alcohols. A discussion of fragmentation of steroidal olefins with or without other functional groups is followed by a rather brief discussion on the fragmentation of saturated and unsaturated bile acids, but without consideration of the muricholic acids, of interest to many biochemists. The final chapter, a more detailed section on the estrogens, contains no information on fragmentation of the estriols, 17α-estradiol, or any of the large number of metabolites of the estrogens but is concluded with a rather extensive discussion on fragmentation of the D-homoestrogens and the relation of appearance potential to the cleavage of particular bonds in D-homoestrogens and selected androstanes and pregnanes.

The title of the monograph should not be misconstrued to suggest that this is an atlas of spectra of steroids. Indeed, the reader will not find a typical mass spectrum in the book. The author's objective appears to be directed primarily to a review of the nature of fragmentation of types of steroids under electron impact; topics on quantitation, chemical ionization, sapogenins, and steroidal alkaloids are omitted or treated very briefly. Fragmentation of selected derivatives (principally acetate, trifluoracetates, trimethylsilyl ethers) is mentioned in several chapters, particularly under olefins and bile acids. The short index consists principally of a list of the steroids considered. Commendably, the text is notably free of typographical errors, and the binding and quality of the paper reflect the usual high standards of the publisher. Unfortunately, the price of the book is high for those few experts and their students who are fascinated with this area of mass spectrometry.

WILLIAM H. ELLIOTT
St. Louis University
St. Louis, MO 63104

Surface-Active Substances: Properties and Application, A.A. Abramzon (Khimiya Publishers, Leningrad, USSR, 1975, 247 p., Rub. 0.98).

The title of this volume is not well suited to its content: the common surfactants, such as sodium dodecyl sulfate, are hardly mentioned in it. As stated in the preface, the book is, above all, a summary of its author's (theoretical) work. In recent years, many theoreticians endeavored to account for the measurable properties of liquids by calculations *ab initio*. Abramzon followed a path more popular two or three generations ago than now; he derived and used correlations between experimental data.

Thus, in Chapter I, the free energies of evaporation, dissolution, etc., are computed from the published experimental results. Then they are broken down into components, corresponding to $-CH_2-$, $-OH$, and other groups, and it is shown, for instance, that the free energy of interaction of a $-OH$ group with a solvent varies only by ± 25% over the whole gamut of solvents. Also the free energy per unit area of the molecule surface is calculated.

In Chapter II, the longest in the book, various surface phenomena are discussed, such as the relation of surface tension, γ, to the dielectric constant, the dependence of the interfacial tension on the γ values of the two liquids, the surface pressure of unimolecular films, and so on. Empirical rules are extensively compared with the experimental data, resulting in 33 graphs and 17 tables on the 59 pages of text.

Chapter III deals with emulsions and foams and also includes some experimental results from the author's laboratory. Since our knowledge of these systems is less quantitative than that of surface tension, many statements in this chapter are qualitative only. This remark applies also to Chapter IV dealing mainly with solutions of poly(vinyl alcohol) containing varying amounts of the acetate radical.

The final chapter somewhat deviates from the style of the preceding text and reports on the methods of analyzing emulsions. It contains only one reference to the author's publications.

The major part of the book is too subjective to recommend the volume as a source of fully reliable information, but it certainly offers lively reading, because the reader asks himself, sometimes more than once per page: is this opinion of the author likely to be proven correct in the future? If an English translation could be marketed at the Russian price (about $1.10), I would suggest it as a kind of puzzle book for specialists in the physical chemistry of surfaces.

J.J. BIKERMAN
Department of Chemical Engineering
Case Western Reserve University
Cleveland, OH 44106

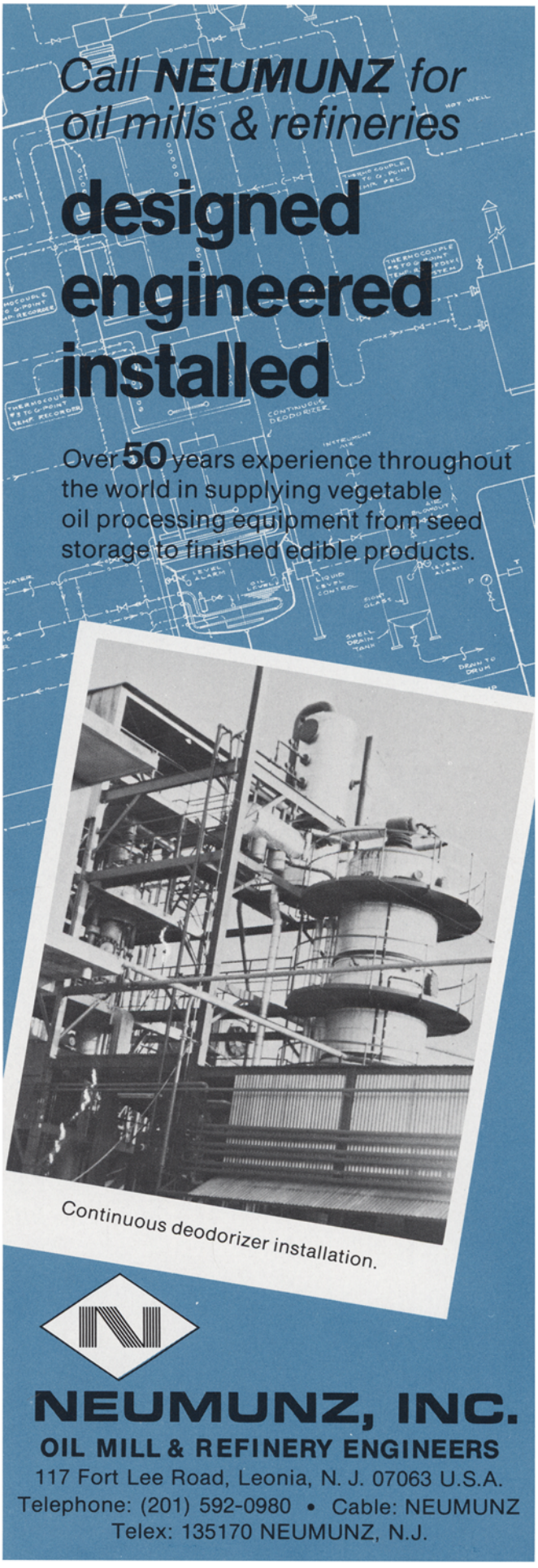
Surface Characteristics of Fibers and Textiles, Edited by Martin Schick (Marcel Dekker, Inc., New York, NY, 1975, 432 p., $39.50).

This book is part I of a two part compilation of contributions from a number of authorities covering a diverse range of surface characteristics of textile materials.

It includes chapters on the surface properties of cotton, wool, and synthetic fibers; the fricition and lubrication of synthetic fibers; techniques of examination of textile surfaces by scanning electron microscopy and by attenuated total reflectance infrared spectroscopy; abrasion; electrical properties; color; and the effects of degradation on the surface properties of textiles. Most of the contributors are active in research and have provided balanced views of the state of knowledge in their special fields, together with extensive and up-to-date bibliographies.

While it is unlikely that many readers will be interested in depth in the full range of subjects covered in this book, it is certain that the volume will be of value to a large number of workers in the textile field, including those people who are concerned with the modification of textile properties and behavior by the application of finishes.

(Continued on page 627A)



• **Meetings** . . . . . (Continued from page 613A)

April 10-15, 1977—1st International Meeting of Heads of Clinical Biochemistry Laboratories, Jerusalem, Israel. Contact: Organizing Committee and Secretariat, PO Box 16271, Tel Aviv, Israel.

April 25-30, 1977—AmeRO 77, Industrial Exposition, Bucharest, Romania. Contact: Marin C. Dwyer International Ltd., 400 N. Michigan Ave., Chicago, IL 60611 (tele: 312-467-4590; telex MCD CGO 25-6155).

May 2-5, 1977—ISA/77-Anaheim, 1st Spring Conference & Exhibit, Instrument Society of America, Disneyland Hotel, Anaheim, CA. Contact: Anaheim/77, 400 Stanwix St., Pittsburgh, PA 15222 (tele: 412-281-3171).

May 3-6, 1977—2nd International Seminar on Corrosion Problems in the Pulp and Paper Industry, CPPA-Technical Section, TAPPI, and NACE; Denver Hilton Hotel, Denver, CO. Contact: Larry Laliberte, Pulp and Paper Institute of Canada, 570 St. Johns Rd., Pointe Claire, Quebec, Canada H9R (tele: 514-697-4110).

May 4-6, 1977—2nd Annual Spring Workshop, Association of Official Analytical Chemists, Stouffer's Inn, Cincinnati, OH. Contact: Howard P. Moore, Chief, Consumer Analytical Laboratories, Ohio Department of Agriculture, Raynoldsberg, OH 43068 (tele: 614-866-6361); or John Feldman, Laboratory Director, Food and Drug Administration, 1141 Central Parkway, Cincinnati, OH 45202 (513-684-3511).

May 31-June 2, 1977—1st International Conference on Pharmaceutical Technology, Association de Pharmacie Galenique Industrielle, Faculty of Pharmacy Paris-Sud, Paris, France. Contact: Professor D. Duchene, APGI, Rue J.B. Clement, 92290 Chatenay-Malabtry, France (Paris tele: 660.06.11 Ext. 585).

June 14-20, 1977—EUROCHEM 77, Clapp & Poliak, National Exhibition Centre, Birmingham, England, Contact: Clapp & Poliak, Inc., 245 Park Ave., New York, NY 10017 (tele: 212-661-8410).

June 16-19, 1977—Biennial Conference, Oil and Colour Chemists Association, Grand Hotel, Eastbourne, England. Title: The Conservation of Energy, Materials, and Other Resources in the Surface Coatings Industry. Contact: Director and Secretary, Oil and Colour Chemists' Association, Priory House, 967 Harrow Rd., Wembley, Middlesex, England HAO 2SF (tele: 01-908-1086; telex: 922670 OCCA Wembley).

July 14, 1977—COLOR 77, 3rd Congress, International Colour Association, Troy, NY. Contact: Dr. Fred W. Billmeyer, Jr., Department of Chemistry, Rennselaer Polytechnic Institute, Troy, NY 12181 (tele: 518-270-6458).

Sept. 6-8, 1977—20th International Conference on the Biochemistry of Lipids, Aberdeen, Scotland. Contact: Dr. G.A. Garton, Department of Lipid Biochemistry. Rowett Research Institute, Bucksburn, Aberdeen, AB2 9SB, Scotland.

Sept. 28-30, 1977—"Nutrition and Work," 3rd International Symposium, Nancy, France. Contact: Secretariats Scientifiques et Administratifs, Departement de Nutrition et des Maladies Metaboliques de l'University de Nancy, 40 Rue Lionnois, 54000 Nancy, France (tele: 28-52.67.39). ■

• **New Books** . . . . . (Continued from page 621A)

We can be grateful to the editor and his contributors for a concise and authoritative guide to a voluminous amount of original literature and look forward to the publication of the second volume of this series.

JOHN SKELTON
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Obituaries

Robert A. Duncan

Robert Andrew Duncan, 86, an Emeritus member of ACOS who joined the Society in 1924, died on August 6 of a heart attack.

Duncan retired from Procter & Gamble in 1959 as associate director of the chemical division. Following work at the University of Missouri, he taught chemistry at Oregon State University and then managed phenol production for Monsanto. He joined P & G in 1918 and, in charge of process development from 1923-1937, was involved in the development of milled soap, early spray-drying of soap granules, and continuous soapmaking.

While visiting laboratories in Germany in 1931, he learned of research involving sulfated fatty alcohols and arranged for shipment of 10 kg to Cincinnati for testing. This led to the introduction, in 1933, of Dreft granules and Drene shampoo, which inaugurated the era of curd-free synthetic detergents for home use. ■

Lester P. Hayes

An AOCS member since 1956, Lester P. Hayes died on December 7. He was employed by A.E. Staley Manufacturing Co. in Decatur, IL.

Hayes, who attended Blackburn College and the University of Illinois, worked in the field of fats and oils since 1949. ■

Curtis J. Mantooth

Curtis J. Mantooth, AOCS member since 1973, died June 18, 1976. He was chemist in charge, Oilseed Processing Division, Anderson Clayton, Abilene, TX. ■