NEW BOOKS

SURFACTANTS—TEXTILE AUXILIARIES—DETERGENT RAW MATERIALS, by Dr. Kurt Lindner (Scientific Publishing Company, Ltd., Stuttgart, Vol. I, 1–1123 pp., Vol. II, 1124–2089 pp., 1964).

Volume I is devoted to the preparation and properties of surfactants. First there is given a very comprehensive treatment of the raw materials used in surfactant synthesis, namely hydrocarbons, alcohols, phenols, fatty acids, etc. Then follows a systematic discussion of surfactants, including preparation and properties of anionics (carboxylates, sulfates, sulfonates, etc.), nonionics (polyhydroxyl compounds, alkylene oxide high polymers, ethylene oxide adducts and others), cationics (amines and derivatives, amine oxides, etc.), ampholytes (betaines, sulfobetaines, cyclic structures, etc.) and finally high polymers (anionic, nonionic, cationic, and ampholytic types). Addended to this section is a summary on techniques of sulfonation.

The second volume begins with preparation, properties and derivatives of carboxymethylcellulose, silicones and phosphates. Following this is a comprehensive discussion of textile chemistry and treatment. Evaluation and analysis of surfactants are also discussed.

Finally there is addended a list of companies (European and American) which supply textile auxiliaries and condensed phosphates.

This is a mammoth piece of work which includes over 1935 references.

The author has provided in this "second edition" a complete reworking and updating of his 1954 text, *Textilhilfsmittel and Waschrohstoffe*. He is assisted by several collaborators, including such luminaries in the detergent field as Drs. Chwala, Goette, Kling, Stupel and Weigand, among others. This work is encyclopedic in nature and may be regarded as a German counterpart of *Surface Active Agents*, by Schwartz, Perry and Berch, published in the United States.

All workers in the detergent, textile, surface chemistry and related fields would obviously benefit from reading Dr. Lindner's texts. This work is particularly useful for researchers interested in detergent synthesis. Dr. Lindner's treatment of this area is most comprehensive and systematic, and may be considered classical. Also provided is an exhaustive and pertinent discussion of textile chemistry.

It is possible that greater length and coverage could have been given to areas of detergent physical chemistry evaluations, and analysis. Recent work on instrumental techniques such as radiometry in detergency measurement and NMR among others in analysis are not included. However, with these exceptions, this work remains a vital reference for all detergent scientists.

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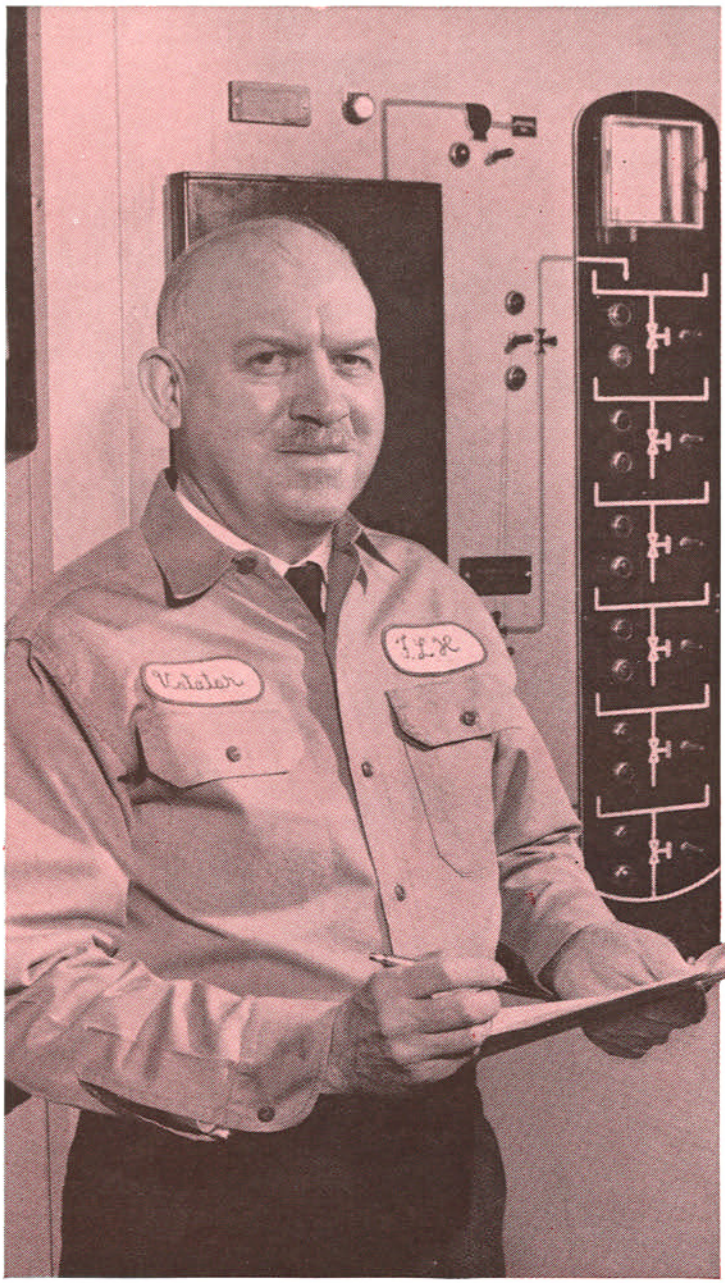
NEW BIOCHEMICAL SEPARATIONS, edited by A. T. James and L. J. Morris (D. Van Nostrand Co., Ltd., Princeton, N.J., 424 pp., 1964, $10.50).

The stated aim of this book is to provide up-to-date explanations of the most modern refinements in separation techniques and to include detailed experimental data of their application to biochemical problems. Gas-liquid chromatography and thin-layer chromatography receive most attention and a relatively large proportion of the book is devoted to lipid methodology.

The chapters on gas-liquid chromatography deal with steroids, alkaloids and sugars (E. C. Horning and W. J. A. Vandenheuvel), bile acids (J. Sjovall), amino acids (A. Karmen and H. A. Saroff), coenzyme A esters (Marjorie G. Horning) and the detection and estimation of radioactive compounds separated by gas-liquid chromatography (A. T. James). Chapters on thin-layer chromatography cover its application to protein hydrolysates and amino acids (M. Brenner, A. Niederwieser and G. Pataki), alkaloids (D. Waldi), steroids (R. Tschesche, I. Duphorn and G. Snatzke), bile acids (A. F. Hofmann), plant phospholipids and



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glycolipids (B. W. Nichols) and the use of hydroxyapatite (A. F. Hofmann) and impregnated adsorbents (L. J. Morris). In addition there are chapters on gel filtration of proteins, peptides and amino acids (B. Gelotte) and of polysaccharides (K. Grenath), a chapter on the use of silicic acid impregnated paper for separation of polar lipids (G. V. Marinetti) and one on counter-current distribution of lipids (F. D. Collins). Each chapter is followed by a list of literature references and the book contains author and subject indexes. The quality of binding and the format are both excellent and the text is interspersed with many useful illustrations and tables.

The authors of the different chapters are experts in their fields and in many cases have contributed extensively to development of the techniques they describe. Hence the accounts are authoritatively written and contain much detail of interest to workers who are already using the techniques besides providing basic information for those encountering the methods for the first time. The book is intended primarily for research biochemists and chemists but it may also serve as a useful reference text for teaching modern separation techniques.

The presentation of up-to-date information in a multi-authored book presents difficulties because of the time required for assembling and publishing the material. In the present instance, the editors have succeeded reasonably well, and a few references to 1964 papers are included although in some of the reviews the most recent references are to papers published in 1962. Despite this limitation, good review articles are a valuable adjunct to the original literature, the more so because the volume of original literature is expanding so rapidly, and this collection of reviews is a welcome addition to my bookshelf.

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Fatty Acids: Their Chemistry, Properties, Production, and Uses, Ed. 2, Part III, K. S. Markley, Editor [Interscience Publishers, John Wiley and Sons Inc., New York, 1964, pp. 1487–2479 (992 pp), $35].

This second edition of *Fatty Acids* follows the general plan and format of the first edition published in 1947. Because of the vastness of the subject and the tremendous advances and development of fats and oils chemistry since the first edition, the present edition has been expanded to four volumes. The volume under review has been written in the format of the previous volume. The present volume is divided into six main parts; the first section deals with the biological oxidation of fatty acids and was written by H. R. Mahler, of Indiana University. A measure of the interest in fatty acid metabolism is the fact that in the first edition the subject was covered in 5 pages; in the present edition this coverage has been expanded to about 63 pages. The author states that his purpose was to summarize the status of the problem in 1960 and to introduce the reader to the individual enzymatic steps involved in fatty acid oxidation. Within this narrow framework the author has done well. The chapter does contain a few references to 1961 literature. The chapter on nitrogen derivatives written by N. O. V. Sonntag of the National Dairy Products corporation was worthwhile reading. In this chapter the complete spectrum of nitrogen derivative chemistry has been aptly covered (165 pp). The chemical and physical properties of these compounds as well as most of their chemical reactions and methods for their preparation are discussed. Some industrial methods are given, although emphasis is on published synthetic methods. This chapter is highly recommended reading for those interested in gaining knowledge in this area; for those wishing an entry into the literature, 1041 references are cited. There has been an increase in interest in the chemistry of sulfur derivatives. The chapter in this book, written by Dr. Markley is therefore timely. Most chemists are relatively unfamiliar with the chemistry of organic sulfur compounds. This brief, well-written chapter allows one to become familiar with these compounds, their reactions and methods of preparation. The chapter devoted to the chemical synthesis of fatty acids is outstanding and will probably become one of the best-read sections of this volume. It can be highly recommended to both the novice and practitioner in the area of fatty acid synthesis. Dr. Markley has employed the method of organization used by Gensler (*Chem. Revs.* 1957), a considerable amount of material presented by Gensler is duplicated but was apparently necessary for complete development of the review; without this the review would have been fragmentary. The present review employs more detailed comments concerning the various procedures under discussion. The chapter entitled "Biogenesis of Fatty Acids" represents a brief review of the concepts of fatty acid biogenesis from the earliest views to the present day view of biological oxidation. The author (M. Woodbine) follows this with a discussion of the diverse conditions where biosynthesis occurs.

The remainder of the book (Chapter 20, 376 pp.) is devoted to techniques of separation as employed in working with lipids; this too will become "well-thumbed" and is an invaluable compilation of methodology for those who find it necessary to separate lipids and their derivatives. The first section written by Dr. Markley deals with distillation, salt solubility, and low temperature crystallization. Methods for the hydrolysis and esterification of fats are given detailed treatment in this section. Section B reviews liquid chromatography (H. Schlenk) and covers column, paper, and thin-layer chromatography. All of the associated techniques are discussed as are the separations between and within classes, of lipids and derivatives. The methods of detection are discussed in detail. Section C reviews the application of gas-liquid chromatography (F. P. Woodford) to the separation of lipids (primarily methyl esters of fatty acids). Section D deals with the application of countercurrent distribution (C. R. Scholfield) to the separation of fatty acids and their derivatives. A detailed treatment of the principles, equipment and operation, mathematical treatment, and choice of solvents for separations is included. The properties and uses for separation techniques of urea inclusion compounds are discussed by D. Swern in the last section of this volume.

The index appears to be complete but further judgment must come from the users of this volume. The last volume of the series will contain a cumulative subject and author index for the entire edition. The last five pages are devoted to a list of errors and their corrections to be found in the first two volumes of the series. This volume should become an invaluable aid to both the beginning and experienced lipid chemist as well as others interested in the fields represented in this series. The extensive use of literature citations (over 3400) will render the book more valuable. The price is not unreasonable for a work of this magnitude; but, regrettably, it will keep it from the bookshelves of many individual chemists. The book is bound well and is printed on good quality stock paper. It should be suitable for many years of hard usage.

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Call for Detergent Papers

The American Society for Testing and Materials, Committee D-12 on Soaps and Other Detergents, will meet December 6–7, 1965 in the Barbizon-Plaza Hotel, New York.

Persons who wish to present papers at this session pertinent to the "formulation of specifications, methods of testing and definitions of terms pertaining to soaps and other detergents, including materials entering into their manufacture" should contact the Committee Secretary, J. B. Schapiro, Dixon Co., 158 Central Ave., Rochelle Park, N. J. 07662.