New Books

PROGRESS IN THE CHEMISTRY OF FATS AND OTHER LIPIDS. Vol. I. Edited by R. T. Holman, W. O. Lundberg, and T. Malkin (Academic Press Inc., New York City, 186 pages, $7, 1952). This well-printed book is the first of a series, the purpose of which is to provide authoritative, critical, and up-to-date surveys of some special branch of the field written by outstanding authorities. And to a large degree the articles comprising this volume fulfill these objectives.

The sections which make up the book are "The Molecular Structure and Polymorphism of Fatty Acids and Their Derivatives" by T. Malkin, "Sterols" by Werner Bergmann, "Structure and Properties of Phosphatides" by P. Desnuelle, "Chromatography of Fatty Acids and Related Substances" by R. T. Holman, and "Derivatives of Fatty Acids" by H. J. Harwood.

These articles are not simply reviews of recent progress but an integrated presentation of modern thought in the field. Considerable historical background is given to provide proper perspective for the more recent work. As is to be expected in a series written by so many authors with such diverse backgrounds, the style and coverage vary greatly from one article to another. Thus Dr. Malkin's article is an excellent introduction to the intricacies of fatty acid structure but it is hardly an up-to-date review since the two most recent references are dated 1944 and 1949. To a lesser degree the same criticism holds for the otherwise fine articles on sterols and fatty acid derivatives.

The articles in this volume will serve as excellent introductions to the field or as quick reviews for the busy chemist. The section on chromatography is particularly welcome since it permits rapid evaluation of the utility of this relatively new technique.

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ANNOTATED BIBLIOGRAPHY OF VITAMIN E, 1950 AND 1951. Vol. II. Compiled by P. L. Harris and Wilma Kujawski (National Vitamin Foundation Inc., New York City, 106 pages, $2). This compilation is an extension of Volume I which covered the period 1940 to 1950 and proved useful to a large number of scientists. The entries, arranged according to the same outline that was used before, are abstracted and listed under eight different general headings, namely: occurrence and distribution, determination, chemistry, physiology and pathology, pharmacology, nutrition and metabolism, medical and therapeutic use, and veterinary use.

The bibliography includes 643 different references, each of which is abstracted in a straightforward, readable summary. The compilation will undoubtedly be of interest not only to those doing research and other investigative work on Vitamin E but also to those who are interested in the tocopherols as components of fats and oils.

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1952 BOOK OF A.S.T.M. STANDARDS INCLUDING TENTATIVES; PART 7, TEXTILES, SOAP, WATER, PAPER, ADHESIVES, SHIPPING CONTAINERS (American Society for Testing Materials, 1,334 pages, 1953). This book is Part 7 of the 1952 book of A.S.T.M. standards. The first six books deal with totally different material, including such materials as cement, paint, fuels, etc. No general scheme applicable to all of the materials covered is followed. In general, specifications are followed by test methods, terms, and definitions, and finally specific applications to individual materials.

The section on Textile Materials constituting 534 pages contains an enormous amount of data pertaining to fibers in general, yarns, threads and cordage, fabrics in general, hosiery, asbestos textiles, cotton textiles, glass textiles, rayon acetate and silk, wool felt, etc. The sections on the definition of textile terms and the section on the identification of fibers, the latter including a large number of photomicrographs, are exceptional.

The section on Soap and other detergents covers 134 pages, 40 pages of which deal with specifications for soaps and builders. The remaining pages are devoted to methods of analysis. It should be noted that there are no specifications for tripolyphosphate and that the methods of analysis for synthetic detergents are extremely brief.

In the section on Paper and Paper Products test methods are extensive, covering nearly all of the 266 pages. Special sections are devoted to tests for insulating paper, tests for vulcanized fiber, and testing analytical filter papers. General test methods, sampling instructions, and individual tests are interspersed throughout the section in a not-too-well organized manner.

The section on Shipping Containers is devoted entirely to methods of testing and covers only 54 pages. Most of the tests are physical tests to determine the resistance of the package to crushing and resistance to penetration of liquids into the container. It is interesting to note that a section on tentative methods of testing pallets is included.

The first part of the section on Adhesives (89 pages) is devoted to testing adhesives generally for their physical performance and resistance to chemical reagents and to aging. These general methods are followed by tentative methods for the testing of rubber cements and adhesives for brake lining and other friction materials.

The section on Industrial Water (181 pages) has a well-organized portion devoted to sampling. The test methods, which are quite complete, cover not only chemical methods for the identification of metallic impurities but bacteriological methods for the identification and determination of bacterial impurities. To be especially recommended is the final standard method of reporting results of analysis of industrial water.

The last section (40 pages) on General Methods of Testing covers a variety of tests including specifications for sieves, determination of pH, the verification of calibration devices, and other tests which may be applicable to any of the materials covered in the other sections of the book. A rather complete index of 30 pages is included.

The book will be of particular value to those interested in writing specifications for or analyzing any of the materials covered. In no other book is it possible to obtain so much information of a widely varying nature of especial interest to those who have the problem of manufacturing and shipping textiles or soaps or to those who manufacture paper.

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ION EXCHANGERS IN ANALYTICAL CHEMISTRY, by Olaf Samuelson (John Wiley and Sons, New York City, ix plus 291 pages, $6.50, 1953). This excellently printed and indexed volume comprehensively yet clearly and concisely reviews the application of ion exchangers to analytical chemistry. After a brief introduction the author devotes four chapters to a theoretical discussion of ion exchange processes. His essentially nonmathematical treatment of the theory can be readily followed by anyone with average scientific background and yet adequately develops the principles upon which ion exchange processes are based, including the fundamental properties of ion exchangers, equilibria, kinetics, and column operation. This theoretical section is followed by a discussion of techniques involved in the use of ion exchangers, which is particularly useful as guidance to those who have had limited experience with these materials.

The most valuable contribution to those who are engaged in analytical chemistry are undoubtedly chapters VII through XXVI, dealing with specific applications. In his review of the voluminous literature on the subject the author has discussed each analytical application in sufficient detail to demonstrate the full utility of ion exchangers and in a number of cases has outlined specific procedures. A comprehensive bibliography is included with each chapter.

The author's literary style as well as his organization of the material make the book quite readable. In addition, it covers the subject comprehensively and so would be a valuable addition to the library of any chemist.

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HEYDEN CHEMICAL CORPORATION, New York City, has developed a new solid form of formaldehyde, with less than one-tenth of 1% water content, under the trade name "Superfyde," and is now producing the new product in commercial quantities by a special process.