NEW BOOKS

FORMULA INDEX TO NMR LITERATURE DATA, VOL. I, Edited by M. Gertrude Howell, Andrew S. Kende, and John S. Webb (Plenum Press, New York, 206 pp., 1965, $17.50).

The book lists organic compounds by their empirical and structural formulas and gives literature references to their nuclear magnetic resonance spectra. The spectra are not shown, nor are figures for chemical shifts or coupling constants, thus the book is purely an index to the NMR literature, as stated in the title. This plan has made it possible to enter some 2500 compounds in the space of 206 pages (Vol. I). The references are placed conveniently with the formula of each compound.

The listing is by molecular (empirical) formula and not by classes. The order of the elements is unusual, beginning with P and ending with C, H, and D, but is claimed to produce at least a partial grouping of similar compounds. The system is judged to be simple and practical although it does not separate aliphatic from aromatic substances. Hence fatty acids and esters are found in the C,H,O group along with cyclic compounds.

Volume I covers the literature prior to 1961. The listings include a considerable number of aliphatic acids, salts, and esters. However, the number of long-chain fatty acids is not large because only a few studies of their NMR spectra had been published in the period under review. Subsequent volumes may be expected to contain more entries of interest to lipid chemists. The series will be valuable to those who are making extensive use of NMR and, for reference purposes, to anyone who wishes to locate quickly the NMR spectra of individual compounds.

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ALKYLATION WITH OLEFINS, by A. V. Topchiev, S. V. Zavgorodnii and V. G. Kryuchkova (Translated from Russian into English by Scripts Technica, Inc., Washington, D.C., Elsevier Publishing Co., Netherlands, 306 pp., 1964, $16).

Four of the five chapters of the book report experimental data such as yields and conversions for the alkylation of organic acids, aromatic hydrocarbons, phenols, alkyl aryl ethers and halophenols with olefins. Boron trifluoride and aluminum chloride were the only catalysts used for most of the experiments reported. The fifth chapter of the book discusses liquid phase oxidation of alkylaromatic hydrocarbons.

This book is somewhat similar in nature but is more limited in scope than the earlier book by Topchiev, "Nitrations of Hydrocarbons." Experimental results of selected papers, mostly Russian, were abstracted, but there is little attempt to discuss the theory and the mechanism of alkylation. It should be emphasized that many areas of alkylation are not considered including such commercially important areas as the production of gasoline from isobutane and olefins or alkylations with sulfuric or hydrogen fluoride. This book has collected Russian results in several specific areas of alkylation research and hence should be useful to investigators in these specific areas. It is unlikely, however, that many readers of the Journal of the American Oil Chemists' Society are active in these areas. It was a disappointment that the Russian thinking regarding the theoretical aspects of alkylation was not included.

This reviewer considers the last chapter concerning the partial oxidation of alkylaromatic hydrocarbons as the best in the book. A good over-all discussion of experimental results, their interpretation, and proposed mechanism is included for this specific type of oxidation.

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INSTRUMENTATION IN THE CHEMICAL AND PETROLEUM INDUSTRIES—1964, G. H. Robinson, Ed. (Plenum Press, 140 pp., 1964, $9.50).

This volume is the proceedings of the Fifth National Chemical and Petroleum Instrumentation Symposium held in Wilmington, Del., May 4–5, 1964. Offset reproduction of the typewritten material furnished by the authors participating in this symposium was used to manufacture the book. This material includes papers by individuals from a variety of industrial positions, on the subjects of direct digital control, progress and trends in process variable measurement, new developments in final control elements, and discussions of maintenance problems associated with advanced types of instrumentation. The authors of these papers give evidence of having strong, first-hand experience with these new developments in process control, and the volume should provide useful information to anyone evaluating the application of digital computer control or advanced instrumentation to their processes. This reviewer, as a representative of the academic field, also found the volume useful in providing an up-to-date perspective on instrumentation and control, as it is currently being applied and developed in industry. Lucid explanations of the latest in digital actuators and fluid logic devices, and discussions of electronic circuitry necessary for producing even simple proportional action on time-shared digital equipment, are both interesting and enlightening.

Some criticism can also be noted. While there is no objection to the typewritten format of the book, there is no apparent reason for the relatively poor reproduction of some of the figures. For example, the picture of the control console on page 50 provides little useful insight, because of the low contrast and blurred nature of the reproduction. The editing appears to have been somewhat too light; for example, the word "discrete" is misspelled both on page 67 and on page 68.

To summarize, the volume is recommended reading for any company actively considering modernization of its instrumentation and control procedures, and for professional men wishing to up-date their knowledge of this rapidly changing field.

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ALTERNATING CURRENT POLAROGRAPHY AND TENSAMMETRY, by B. Breyer and H. H. Bauer (Interscience Publishers Division of John Wiley & Sons, Inc., New York, N.Y., 288 pp., 1963, $12).

Alternating current polarography and tensammetry is as relatively recent development in the electrochemical field. The authors write with authority, since they have been among the leaders in the development of this subject. The literature is covered very thoroughly through 1960 and a few references from 1961 and 1962 are also included.

This brief book consists of 5 chapters, including a short but excellent introduction to the subject. In the second chapter (64 pages) the theoretical aspects of both AC polarography and tensammetry are considered in some detail. A rigorous mathematical treatment is presented for electrodes and electrode processes, AC polarographic waves, rectification effects, and for tensammetry.

Chapters 3 and 4, covering the topics of instrumentation and analytical applications, respectively, give the reader a thumbnail sketch of the development of methodology and instrumentation through 1961. The section on the analytical applications covers both the inorganic and the organic areas rather completely through this period. The book concludes with a short chapter on the elucidation of electrode processes.

This is an excellent introduction to AC polarography and it should be most helpful to those considering the

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• *New Literature*

SOAP, PERFUMERY & COSMETICS has published the 1965 Year Book, a compendium of technical and commercial information for the soap, perfumery, pharmaceutical, cosmetic and allied industries. (Price, 2£ (about $5.60) United Trade Press Limited, Gough Square, Fleet Street, London EC4.)

THE AMERICAN SOCIETY FOR TESTING AND MATERIALS has published part 22, the 1965 Book of ASTM Standards, dealing with sorptive mineral materials, soap, engine antifreezes; wax polishes; halogenated organic solvents. (Prices if prepaid: $8; to ASTM members: $5.60. 1916 Race St., Philadelphia, Pa. 19103.)

New Books . . .

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subject for the first time. The laboratory technician will find the discussion of the analytical applications and instrumentation to be practical information directly applicable to his problems. Those versed in the mathematical aspects of electrochemistry will find the theoretical discussion challenging and informative.

This book is written authoritatively and fills a definite need in the field. There have been many developments in the four years following the period covered, however, particularly in instrumentation, and additional sources should be consulted for current information.

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Correspondent Reports News From Sweden

Dr. Wode Retires from Margarinbolaget

A well-known figure in Scandanavian margarine industries, Dr. Gunnar Wode, is retiring from Margarinbolaget, where he has served as technical manager since 1938. Dr. Wode has been influential in creating the high standards of the Swedish margarine industries and has since 1945 especially studied the role of oxidation in regard to keeping qualities in edible fat products. His work has been an important tool in the improvement of rapeseed oil edibility.

Rolf Bergkvist New Technical Manager

Succeeding Dr. Wode will be Rolf Bergkvist, formerly of Astra and Astra Farmaceutical Company, where he served as head of the Research Laboratory's biochemical section. Results of his research work, mainly organic and biochemical, have been published in more than 30 papers.

New Grants for Fat Research in Medicine

The Swedish margarine industry has granted more than 1.5 million Sw. crowns during the 60's for heart and cardiovascular research.

Five men receiving grants for special studies this year are: Lars Werkö, for continued study of the fat consumption within a group of patients with raised content of blood cholesterol, and for tests to replace the fat in food with unsaturated fatty acids; Rolf Blomstrand, for continued studies of fat resporption; Bengt Borgström, for research of the physical-chemical transformations of edible fats during digestion and resporption from the intestine; Göran Sterky, for food studies at children's hospitals; and Haqvin Malmros, for continued animal tests.