

though one preparation is out of sequence. In addition, there are two sections devoted to methods—peptization and the synthesis of isoprene chains. A third portion is devoted to intermediates in peptization.

There are, in addition, useful addenda to the preparations. For example, in the section covering the synthesis of β -carotene the general introduction leads, followed by the laboratory directions proper, then under "Notes" are "Other Syntheses," "Stereochemistry," "Other Carotenoids" and "Absorption Spectra."

Modern spectroscopic methods also are discussed.

There is an index which covers preceding volumes of this series.

This is the sort of publication which should appeal to specialists and should be of considerable value to them and even to others, in providing workable laboratory directions for the preparation of certain compounds as well as a factual background for each.

The preparations include DL-arginine, Vitamin A, L-carnosine, β -carotene, ergothionine, D-glucosamine, DL-penicillamine and retinene.

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Emulsion Polymerization. High Polymers. Vol. IX. By FRANK A. BOVEY, Minnesota Mining and Manufacturing Co., I. M. KOLTHOFF, University of Minnesota, AVROM I. MEDALIA, Boston University, and EDWARD J. MEEHAN, University of Minnesota. Interscience Publishers, Inc., 250 Fifth Avenue, New York 1, New York. 1955. xii + 445 pp. 16 × 23.5 cm. Price, \$12.50.

The authors have done a magnificent job of assembling and correlating the tremendous volume of investigative work carried out during the war years and immediately thereafter, largely under the aegis of the Office of Rubber Reserve. The book deals almost exclusively with the kinetics and mechanism of emulsion polymerizations, particularly styrene-butadiene (GR-S) systems, rather than with physical properties of the end products.

A striking feature of the topic organization is the excellent summarizing of the general features of each aspect of the polymerization process involving free radicals, which precedes discussion of that aspect applied to the particular case of emulsion polymerization. Taken together, these summaries comprise nearly 20% of the volume. After 58 pages of general summary, separate treatment is given to initiating systems, chain transfer agents, the role of the detergent, the over-all kinetics of the process, inhibition and retardation, and copolymerization. Literature coverage appears not to extend much beyond 1952. The authors make a valuable contribution in pointing out existing contradictions and in many cases suggest further research so specifically that the reader wonders whether at least some of the points may not by now in 1955 be at least partially resolved. Chapters IX, X and XI, dealing with experimental techniques and with aspects of the practical formulation of recipes appear to be extremely useful.

Soap chemists have been inclined to accuse polymer chemists of playing fast and loose with their description of the nature of micelles. Possibly the real blame lies with the soap chemists themselves for not yet being able to present a fully self-consistent picture. Nevertheless both schematic micelles on p. 150 are largely outmoded. It must be admitted that the circumstance in no way affects the major conclusions on the role of detergent in emulsion polymerization.

The book is profusely illustrated with graphical data. Often, however, the legends are not fully adequate to indicate what conclusion results from them and the reader must hunt a while in the text for explanation. Also in many instances symbols for different types of points are almost indistinguishable. Apart from this feature the physical format of the book is good. Author and subject indexes are excellent.

Like its predecessors in the high polymer series this book will find its way to the working libraries of virtually every active polymer chemist and many others who wish to keep abreast of this important field.

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BOOKS RECEIVED

August 10, 1955–September 10, 1955

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- PAUL H. EMMETT (edited by). "Catalysis." Volume III. "Hydrogenation and Dehydrogenation." Reinhold Publishing Corporation, 430 Park Avenue, New York 22, N. Y. 1955. 504 pp. \$12.00.
- S. W. FERRIS. "Handbook of Hydrocarbons." Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1955. 324 pp. \$8.50.
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- GERHART FRIEDLANDER AND JOSEPH W. KENNEDY. "Nuclear and Radiochemistry." Revised Version of Introduction to Radiochemistry. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1955. 468 pp. \$7.50.
- W. E. GARNER (edited by). "Chemistry of the Solid State." Academic Press, Inc., Publishers, 125 East 23rd Street, New York 10, N. Y. 1955. 417 pp. \$8.80.
- H. H. HATT, T. PEARCEY, AND A. Z. SZUMER. "Anti-Composition Tables for Carbon Compounds (CH, CHO, CHS, and CHOS)." Cambridge University Press (American Branch), 32 East 57th Street, New York 22, N. Y. 1955. 191 pp. \$4.00.
- FRIEDRICH HECHT AND MICHAEL K. ZACHERL (Editors). "Handbuch der Mikrochemischen Methoden." Volume II. "Verwendung der Radioaktivität in der Mikrochemie." "Radiochemische Methoden der Mikrochemie." By E. Broda and T. Schönfeld. "Messung Radioaktiver Strahlen in der Mikrochemie." By T. Bernert, B. Karlik, and K. Lintner. "Photographische Methoden in der Radiochemie." By H. Landa. Springer-Verlag, Mölkerbastei 5, Wien 1, Austria. 1955. 423 pp. \$19.30; Subscribers to Handbuch, \$15.45.
- W. KÖSTER (Editor). "Reine und Angewandte Metallkunde in Einzeldarstellungen." Volume 3. "Diffusion in Metallen. Platzwechselreaktionen." Second Edition. By Wolfgang Seith and Theodor Heumann. Springer-Verlag, Reichpietschufer 20, Berlin W 35 (West-Berlin), Germany. 1955. 306 pp. Ganzleinen geb. DM 39.-.
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- K. C. LI AND CHUNG YU WANG. "Tungsten. Its History, Geology, Ore-Dressing, Metallurgy, Chemistry, Analysis, Applications, and Economics." American Chemical Society Monograph. Third Edition. Reinhold Publishing Corporation, 430 Park Avenue, New York 22, N. Y. 1955. 506 pp. \$14.00.
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- JAMES O. MALONEY, GEORGE F. QUINN, AND HAROLD S. RAY (deceased). Part I. MAXWELL L. EIDINOFF, GEORGE G. JORIS, ELLISON TAYLOR, HUGH S. TAYLOR, AND HAROLD C. UREY. Part II. "Production of Heavy Water." National Nuclear Energy Series. Edited by George M. Murphy. McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, N. Y. 1955. 394 pp. \$5.25.
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