

Organization's dictionary, *World Neurology* (September 1961), or the *Merck Index*. Three common names are included and cross-indexed with the official name. Physiological solutions for bathing or perfusing tissues are presented in tabular form in an appendix.

Provision is made in the tabular format of this manual for the addition of supplemental data, and blank pages are provided for the registration of new agents.

Some descriptions of activity are cryptic. "Cardiovascular," or "cardiovascular and respiratory," used advisedly to save space, were inserted in spaces that are large enough for descriptions that would be more enlightening to neophytes or scientists who work in ancillary disciplines.

The list of contributing firms and individuals is impressive, perhaps unique. So is the manual.

JOHN MCCOY

*Bureau of Biological Research,
Rutgers University*

An Editorial Overview

Chemical Reactions of Polymers.

E. M. Fettes, Ed. Interscience (Wiley), New York, 1964. xxii + 1304 pp. Illus. \$40.

As one of the editors of the series, "High Polymers," it is my duty to keep a watchful eye on each volume of the series and to appraise the value of each of them for the readers from a short-range and long-range point of view. As a result of such a check it became evident that some volumes are highly specialized and, perhaps, even too narrow in scope, whereas others are rather general and, in some cases, perhaps even somewhat superficial. It would appear to me that, of the 20 volumes published in the series to date, none combines breadth and depth as well as this compendium that Fettes has planned and produced. The treatise bristles with details but, nevertheless, maintains perspective. The innocent word "edited," which is used to describe Fette's role in the creation of this book, embraces the choice of the individual chapters, the selection of the best author or authors for each, the specification of each chapter's scope, the integration of all chapters, and the careful polishing of the final manuscript.

Virtually all possible and certainly all important reactions that can be carried out with individual polymers are included in *Chemical Reactions of Polymers*, and in each case there is an introduction to the fundamental aspects of the process, an indication about how the process is carried out, and, finally, a record and complete description of the property changes that can be achieved by each individual reaction. In this manner the reader is informed on the fundamental aspects of polymer reactivity (chapter 1), on reactions of unsaturated hydrocarbon polymers (chapter 2) and of their saturated counterparts (chapter 3). Chapter 4 treats end-group reactions of addition polymers, whereas chapters 5 and 6 are devoted to cellulose and proteins. Interchange and cleavage reactions are presented in chapters 7 and 8, whereas the next chapters contain information on intermolecular reactions (chapter 9), branching reactions (chapter 10), and coupling processes (chapter 11). The other chapters are devoted to somewhat more specialized processes—surface reactions (chapter 12), oxydative processes (chapter 13), mechano-chemical changes (chapter 14), fiber-reactive dyes (chapter 15), and to the chemical finishing of cellulosic fibers.

Fettes, as the result of his efforts, has earned the gratitude of the editors and publishers of the High Polymer Series, but, much more important than that, he can be sure of the approval and indebtedness of all readers and users of his volume.

H. MARK

Polytechnic Institute of Brooklyn

Nuclear Power Technology

Plutonium. Mieczysław Taube. Translated from the Polish edition (Warsaw) by Eugeniewicz Lepa and Zbigniew Nanowski. Pergamon, London; Macmillan, New York, 1964. vi + 258 pp. Illus. \$8.50.

In this book, M. Taube of the Institute of Nuclear Research (Warsaw, Poland) attempts to draw together a concise review of the properties of plutonium which are important with respect to its utilization in nuclear power reactors. Although the general purpose of the book is nowhere explicitly stated, the tenor of the treatment is obviously directed toward em-

phasizing the importance of the role that plutonium will eventually play in the development of nuclear power, particularly in fast breeder reactors using the uranium-238-plutonium-239 cycle.

In view of the many books, devoted entirely or partially to plutonium, that have been published in recent years—most notably *The Metal Plutonium*, edited by Coffinberry and Miner; *The Chemistry of the Actinide Elements* by Katz and Seaborg; and *Extractive and Physical Metallurgy of Plutonium and Its Alloys* by Wilkinson—one might wonder what particular need the author sought to satisfy. Apparently the work was prompted by the fact that no single volume treats all aspects of plutonium technology, including nuclear physics, chemistry, separations technology, health physics, fuel fabrication, reactor technology, and economics. It is to this formidable task that the author addressed himself. The result is a fairly thorough, largely descriptive review of the literature. But the volume is typical of the books in which authors treat areas of technology that are under intensive investigation in that it is unfortunately out of date in several areas. This factor, together with some apparent delay in the publication of the English translation, results in a book that can be considered a qualitative review of this broad field through 1961.

The subject matter is well organized into six chapters. The first chapter summarizes the properties of the isotopes of plutonium and the methods of production, and compares the fission characteristics of plutonium-239 with those of uranium-235 and uranium-233.

Chapter 2, "Chemical properties of plutonium," treats the basic chemistry of plutonium metal, alloys, and compounds and of plutonium ions in solution. Chapter 4, "Plutonium technology," which includes information closely related to that in chapter 2, describes chemical processes that are used in the recovery and purification of plutonium. Chapter 2 draws heavily on the book by Katz and Seaborg, but it will serve the plutonium chemist as an organized introduction to Russian articles in the field. Chapter 4 contains schematic flowsheets of all the known experimental and production processes for plutonium separation, from the bismuth phosphate process to pyrochemical methods. There is a table in which all known plutonium recov-