

CARLESS. Academic Press Inc., 111 Fifth Avenue, New York, NY 10016, 1967. x + 329 pp. 15.5 × 23 cm. Price \$14.00.

In the preface to this series the editors state that their task "is to present topics of current and growing interest, written by experts, so that the development of the subject is portrayed in depth rather than providing a condensed review article." The contributors to this volume have successfully fulfilled the editors' objectives. Besides being an invaluable reference to the topics covered through 1965, *Advances in Pharmaceutical Sciences* can serve as a primary text in pharmaceuticals courses at the graduate level.

The two central chapters, "Particle-Size Analysis" by I. C. Edmundson and "Flow Properties of Powders" by Barbara S. Neumann, complement one another. The former chapter reviews the problems encountered in particle-size specification and discusses statistical and graphical representation of particle-size data. Methods of particle-size measurement are described in sufficient detail to enable one to appreciate their limitations. The lengthy analysis of the Coulter counter method, including a review of its application in dissolution studies, is particularly useful. The chapter on powder rheology by Mrs. Neumann, while brief, updates her contribution in "Flow Properties of Disperse Systems," now out of print.

The first chapter in the book, "Kinetics and Mechanisms in Stability of Drugs" by Edward R. Garrett, brings up to date Dr. Garrett's review article in the September 1962 issue of *J. Pharm. Sci.* The current version is improved by discussion of the stability of specific drugs and classes of drugs in separate sections. While this review primarily emphasizes solvolytic degradation, it also discusses drugs which degrade through oxidation. The inclusion of a general description of autoxidative mechanisms would have broadened the usefulness of this chapter.

The last chapter, "Water Determination and its Significance in Pharmaceutical Practice" by C. A. Johnson, complements the first chapter by emphasizing the significance of water in relation to physical and chemical stability. The principle, methodology, limitations, and advantages of each method of water determination is detailed. Methods covered in depth include drying, distillation, the Karl Fischer titration, dielectric measurements, spectroscopy, and gas chromatography. Techniques adaptable to continuous measurement of water in processes are also reviewed.

The index, in conjunction with the outlines included at the head of each chapter, is adequate for one to find most specific topics covered in the book.

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Glass Electrodes for Hydrogen and Other Cations.

Edited by GEORGE EISENMAN. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1967. xii + 582 pp. 15 × 22.5 cm. Price \$24.75.

The twenty-one international contributors to this volume have combined to give a comprehensive treatment of the theory and practice of cation-sensitive glass electrodes. The book covers the ad-

vances in knowledge made in the past ten years, and it is to the editor's credit in selecting his authors that these advances have been made largely by the contributors to this volume.

The book is organized so as to present first the principles upon which the functioning of ion-sensitive electrodes is based and then to examine modern practice in making and using such electrodes. The volume is divided into nineteen chapters; however, I believe that the pharmaceutical scientist interested in using cation-sensitive electrodes as an analytical tool will find the following eight sections of primary interest: Interpretation of pH and Cation Measurement, Cation-Sensitive Glass Electrodes in Analytical Chemistry, Ion-Sensitive Electrodes and Individual Ion Activity Coefficients, Hydrogen and Cation Analysis in Biological Fluids *in Vitro*, H⁺ and Cation Analysis of Biological Fluids in the Intact Animal, Cation-Selective Microelectrodes for Intracellular Use, Glass Microelectrodes and Their Uses in Biological Systems, and Clinical Application of Cation-Sensitive Glass Electrodes.

The authors have done a good job of defining the present limits of cation-sensitive electrodes, and most have taken the opportunity to outline the problems that still must be solved. The latter facet of the book should catalyze the ingenious investigator to envisage many new uses for cation sensitive electrodes. As one author points out, the advent of glass electrodes which can be made to respond selectively to various cations, has opened a veritable "Pandora's box" for investigators in the biological sciences. With such glass electrodes a non-destructive, continuous, high-sensitivity measurement of ionic activity may be made either *in vitro* or *in vivo*.

Each chapter in the volume is essentially self-contained, with its own table of contents and references, and can usually be read independent of the preceding chapters. The book can, therefore, serve as a valuable reference and should be in the library of anyone planning to use cation-sensitive electrodes (hydrogen or otherwise) as an analytical tool.

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Steroid Hormone Analysis. Vol. I. Edited by HANS CARSTENSEN. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1967. xiii + 493 pp. 15 × 23 cm. Price \$23.50.

A series of reviews in steroid methodology are presented as individual chapters of two types. The majority of chapters are technique oriented and have the following titles and scope: "Isotope Derivative Methods for the Determination of Steroid Hormones with ³⁵S-Sulfonylating Reagents," "Elementary Aspects of Infrared Spectroscopy of Steroids," "Outline of the Application of Nuclear Magnetic Resonance to the Investigation of Steroids," "Chromatography of Steroids on Paper," "Gas Chromatography of Steroids." In addition, there are two chapters that center on compounds rather than technique. These chapters are entitled: "Testosterone" and "Analysis and Identification of Steroid Conjugates."

While the change in emphasis would appear to be arbitrary and does lead to some duplication of material, this is not a serious difficulty. It does, however, serve to illustrate the completely independent nature of individual chapters. Each review is designed to stand alone without cross references to other chapters nor is the progressive interchapter development of concepts attempted.

It is evident from the chapter titles given above that material significant to a work on steroid analysis is being covered. However, a real problem in balance must be raised. Forty percent of the present volume is devoted to the chapter on paper chromatography. This certainly is at the expense of other, at least equally as important, material such as the physical methods. One can only hope that thin-layer chromatography and column chromatography will have its day in Volume II.

The editor has implied in his preface that the book is designed primarily for the biologist. For the most part, a format of general discussion of the technique followed by specific applications in the steroid area is employed and serves the biologist well. By necessity, the discussion of techniques are brief and serve essentially to introduce the subject. It is, therefore, the use of steroid examples that recommends the book to not only the biologist but also to the analyst who lacks experience in the steroid field.

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NOTICES

Methods of Biochemical Analysis. Vol. 15. Edited by DAVID GLICK. Interscience Publishers, Div.

of John Wiley & Sons, 605 Third Ave., New York, NY 10016, 1967. ix + 531 pp. 15.5 × 23 cm. Price \$15.00.

Furoprans and Furopyrones: The Chemistry of Heterocyclic Compounds. Vol. 23. By A. MUSTAFA. John Wiley & Sons, Inc., 605 Third Ave., New York, NY 10016, 1967. xii + 376 pp. 15.5 × 23.5 cm. Price \$21.00.

Lipid Chromatographic Analysis. Vol. 1. Edited by G. V. MARINETTI. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1967. xv + 537 pp. 15.5 × 23 cm. Price \$23.50.

Poly- α -Amino Acids. Protein Models for Conformational Studies. Edited by GERALD D. FASMAN. Biological Macromolecules Series, Vol. 1. Marcel Dekker, Inc., 95 Madison Ave., New York, NY 10016, 1967. xv + 764 pp. 15.5 × 23.5 cm. Price \$34.50.

Toxikologie-Fibel. für Ärzte, Apotheker, Naturwissenschaftler, Juristen und Studierende. By W. WIRTH, G. HECHT, and C. GLOXHUBER. Georg Thieme Verlag, Postfach 732, Herdweg 63, 7000 Stuttgart 1, Germany, 1967. In USA and Canada: Intercontinental Medical Book Corp., New York, NY 10016. xiii + 391 pp. 16 × 23.5 cm. Price gebunden DM 36, —.

Encyclopedia of Plant Physiology. Edited by W. HUHLAND. Vol. XIII: Translocation in Plants. (In German.) Springer-Verlag, 1 Berlin 31 (Wilmersdorf), Heidelberger Platz 3, West Germany, 1967. vii + 314 pp. 17 × 25.5 cm. Price: \$34.00 Subscription, \$27.20.
