REVIEWS

Ionic Equilibria in Analytical Chemistry. By HENRY FREISER and QUINTUS FERNANDO. John Wiley & Sons Inc., 605 Third Avenue, New York, N. Y., 1963. 15 × 23.5 cm. xiii + 334 pp. Price $4.95.

The authors have attempted to present "a logical stepwise development of the principles of chemical equilibrium and techniques of calculation." Although treatment of the subject is not exhaustive, it does present a thorough and orderly discussion of equilibrium principles and calculations suitable for use on the undergraduate and graduate levels. Chapters 1 through 3 represent background information on concentrations of solutions, chemical equilibrium, and activity concepts. Subsequent chapters develop the expressions and calculations associated with acid-base, precipitation, metal complexation, oxidation-reduction, and ion exchange equilibria. Expansion of these equilibrium considerations is discussed in applications to various types of titrations. Also included in the book as an *Appendix* are comprehensively tabulated equilibrium constants. These include acid-base dissociation constants, solubility products, formation constants of metal complexes, oxidation-reduction potentials, and acid dissociation constants for metallochromic indicators.

An interesting feature of the book is the log C-pH diagrams which are particularly helpful in following the change of concentrations for various species with pH. Elimination of negligible species as observed from the diagrams simplifies the calculations of many complex systems. The book is well written and can serve as a text or reference volume for courses in analytical chemistry.

Reviewed by Edward F. Salim
American Pharmaceutical Association Foundation
Washington, D. C.

The Australian Pharmaceutical Formulary. 9th Ed. Wilke & Co., Ltd., 19-47 Jeffcott St., Melbourne, Australia, 1964. 266 pp. 10 × 16 cm.

This edition, published by the Pharmaceutical Association of Australia, will become operative on November 1, 1964, and is divided into two sections, the Therapeutic Formulae and the Supplementary Formulae. The Therapeutic Formulae section has been adopted by the Australian National Health Service as its official formulary and includes a Children's Section with dose tables and special formulations. The Supplementary Formulae is devoted to items not required by the National Health Service and other items still used in medicine but not of significance to be included in the Therapeutic Formulae. Many of the formulas are identical to those appearing in the *British Pharmacopoeia* or the *British Pharmaceutical Codex*, and this is noted in the appropriate monographs.

Structure Elucidation of Natural Products by Mass Spectrometry. Vol. 1: Alkaloids. By HERBERT BUDZIKIEWICZ, CARL DJERASSI, and DUDLEY H. WILLIAMS. Holden-Day, Inc., 728 Montgomery St., San Francisco, Calif., 1964. 233 pp. Price $10.50.

Most workers in the field of natural products have had occasion to wish for a technique whereby milligram quantities of material, isolated by laborious methods from natural sources, could be made to yield a maximum, if not total, amount of structural information. This relatively error-free publication lucidly reveals how such data, largely unavailable through conventional analytical and degradative techniques, can be achieved by the use of the modern mass spectrometer. The present volume, prefaced by two chapters on general considerations and deuterium labeling, specifically considers plant alkaloids, an area that has been particularly susceptible to mass spectrometry. The authors, having contributed substantially to the original literature, are eminently well qualified to write authoritatively concerning it. Throughout the book the discussions are well documented with references.

The power of the technique, judiciously supplemented by other physical and chemical procedures, is particularly evident in its application and interpretation in the field of indole and related alkaloids. Chapter by chapter, the fragmentations of these bases, from relatively simple to rather complex polycyclic structures, are considered in a detailed and comprehensive manner. Particularly outstanding is the chapter devoted to aspidospermine and related alkaloids, a group that has been very instrumental in the rapidly growing acceptance of the method. Alkaloids other than those related to indole are adequately covered also, although the principal emphasis has apparently been in the area of greatest interest to the authors. Nevertheless, they have successfully dispelled the "mystery" often associated with mass spectrometry and have created a book that should be an asset to any research library. Foreseeing that mass spectrometry, in future years, will become one of the indispensable and common tools for sophisticated work in the area of natural products, this book is recommended reading for anyone with such interests.

Reviewed by Taito O. Soine
College of Pharmacy
University of Minnesota
Minneapolis

Biostatistics. By AVRAM GOLDSTEIN. The Macmillan Company, 60 Fifth Ave., New York, N. Y., 1964. 272 pp. Price $9.50.

This introductory textbook is the outgrowth of a course taught by the author and his colleagues to medical students.

The author makes no pretense of giving the underlying mathematical statistical basis for the various topics considered, but sufficient discussion and

problems are included to give the reader an intuitive understanding of the subject. The book is well written, and the topics discussed are illustrated with clearly presented examples. Problems with answers are included. The first chapter on the logical basis of statistical inference is excellent in its discussion of the design of experiments and the statistical philosophy concerned in this design.

The second, third, and fourth chapters deal with, respectively, quantitative data, enumeration data, and correlation. That the book contains only four chapters should not mislead one into believing that it is incomplete, since this is certainly not the case.

Three nonparametric tests are described and their use illustrated. These are the two-sample rank test, sign test, and the signed-rank test. The author feels that these tests should be more widely used than at present because of their simplicity of application.

This book would be most satisfactory as a textbook in a course on the subject for pharmacy students or as a supplementary text in a course in biopharmaceutics. The book is enthusiastically recommended.

Reviewed by Eino Nelson
School of Pharmacy
State University of New York at Buffalo
Buffalo

Laboratory Guide in Pharmacology. 2nd Ed. By T. S. MIYA, H. G. O. HOLCK, G. K. W. YIM, and T. MYERS. Burgess Publishing Co., 426 South Sixth St., Minneapolis 15, Minn., 1964. 162 pp. 21.5 × 27 cm. Paperbound. Price $3.50.

This laboratory guide, written especially for the pharmacy student, is designed to serve as a companion to lecture and textbook material for a beginning student. The experiments are organized so that the student begins with basic pharmacological principles, including routes of drug administration, factors affecting dosage, and absorption and excretion of drugs by man. Following these are experiments pertaining to the pharmacology of the various bodily systems, toxicology, and gross pharmacological effects of drugs.

Each experiment provides an organized method of recording observations and includes questions to stimulate thinking about the significance of these observations. The clearly presented experiments are intended for student participation and generally do not require complicated or costly equipment.

Absorption and Distribution of Drugs. Based on a symposium held by the Association of Medical Advisers in the Pharmaceutical Industry. Edited by T. B. BINNS. The Williams and Wilkins Company, Baltimore, Md., 1964. pp. xi + 270 Price $7.50.

The 17 papers in *Absorption and Distribution of Drugs* with the 520 references cited are an excellent introduction to the subject matter and also will provide excellent reading for those well acquainted with the field. Four of the papers are concerned with the fundamentals of absorption, two with the fate of drugs, one with the blood-brain barrier, one with the placental barrier, one with protein binding, two with biopharmaceutical aspects of absorption, five with absorption of particular classes of drugs, and one with the significance of serum levels of chemotherapeutic agents. The two papers of Bernard B. Brodie, namely, "Physico-Chemical Factors in Drug Absorption" and "Distribution and Fate of Drugs; Therapeutic Implications," constitute approximately one-third of the book and are very fine reviews. The papers entitled, "Pharmaceutical Manipulation and Therapeutic Efficacy," by K. A. Lees, "The Influence of Particle Size upon the Absorption of Drugs from the Gastrointestinal Tract," by J. A. L. Gorringe and E. M. Sproston, and "Absorption of Steroids with Special Reference to Spironolactone," by G. R. Venning, would be interesting reading not only for the industrial scientists in the pharmaceutical industry but also for the practicing pharmacist.

The only disappointment to the reviewer was the paper entitled, "Kinetics of Drug Absorption: Methods and Interpretations," by R. F. Crampton and D. M. Matthews. There is a vast amount of literature on the kinetic interpretation of drug blood levels and urinary excretion which these authors only touched.

Reviewed by John G. Wagner
The Upjohn Company
Kalamazoo, Michigan

NOTICES

Opportunities in Pharmacy Careers. By FRED B. GABLE. Vocational Guidance Manuals, 800 Second Ave., New York 17, N. Y., 1964. viii + 144 pp. 13 × 20 cm. Price $1.45 paperbound, $2.65 cloth.

Kirk-Othmer Encyclopedia of Chemical Technology. 2nd edition. Vol. 3, B to Calcium. Executive Editor ANTHONY STANDEN. Interscience Publishers, 605 Third Ave., New York 16, N. Y., 1964. xvi + 927 pp. 19 × 27 cm. Price $45 single copy, $35 subscription.

Actualities de Phytochimie Fondamentale. Par C. MENTZER et O. FATIANOFF. Masson et Cie, Editeurs, 120, Boulevard Saint-Germain, Paris VIe, France, 1964. 266 pp. 16.5 × 21.5 cm. Price 85 F. Paperbound.

The Real Voice. By RICHARD HARRIS. The Macmillan Company, 60 Fifth Ave., New York 11, N. Y., 1964. 245 pp. 14 × 21.5 cm. Price $4.95.

Diet and Bodily Construction. Ciba Foundation Study Group No. 17. Edited by G. E. W. WOLSTENHOLME and MAEVE O'CONNOR. Little, Brown and Company, Boston, Mass., 1964. 120 pp. 12 × 19 cm. Price $2.95.

Cahiers de Synthese Organique. Methodes et Tableaux d'Application Vol. XI: Cyclisations (suite). 22.– Cyclisation bimoleculaire mixte. Par JEAN MATHIEU, ANDRE ALLAIS, et JACQUES VALLS. Masson et Cie, Editeurs, 120 Blvd. Saint-Germain, Paris VIe, France, 1964. 343 pp. 15.7 × 22.5 cm. Price 120 F Cartonne toile.