

In many cases, the synthesis of a compound is provided in detail, but sometimes the reader is referred to a reference. References are used liberally throughout the text. The author indicates that the text does not contain all syntheses that have been developed for stable isotopes considered in the book, and states that the preparations presented represent types of reaction methods and techniques that may be applicable to many products other than those shown in the text. The efficient synthesis of key intermediates has been considered to be particularly important.

The text is concise, unique, and useful for individuals wishing to synthesize labeled compounds with stable isotopes and should be beneficial to all chemists involved in this area of research.

Reviewed by Stanley M. Shaw
Bionucleonics Department
Purdue University
West Lafayette, IN 47907

Anionic Polymeric Drugs. Edited by L. G. DONARUMA, R. M. OTTENBRITE, and O. VOGL. Wiley, 605 Third Ave. New York, NY 10016. 1980. 356 pp. 15×23 cm. Price \$39.50.

This work is written as a first volume in a series to be published under the heading "Polymers in Biology and Medicine." The series is aimed at integrating knowledge in polymer sciences; it deals with endogenous polymers on one hand, and synthetic polymers used in biological and medical applications on the other.

The book is written by a number of experts, each contributing in their field. The work presents an overview of polymers as drugs, drug carriers, drug delivery systems, and as biopolymers in medicine. The structure and biological activity of polysaccharides and polycarboxylic acids are reviewed, with a discussion of the synthesis, characterization, and chelating properties of polycarboxylic acids.

An extensive review is provided of the divinyl ether-maleic anhydride copolymers (Pyran copolymer) and related structures. The discussion ranges from a captivating historical background through an in-depth discussion on a range of biological activities as they relate to structure, including the effects of polymers on the immune system. Subsequently the work expands on antiviral activity, effect on mixed-function oxidases, interferon induction, and antitumor activity.

The monograph represents a thorough and broad review of the chemistry, physics, characterization, pharmacological, and physiological effects of polyanions with emphasis on the so-called Pyran polymers which have been studied most extensively. The editors have succeeded in bridging the gap between polymer science, biology, and medicine by providing a balanced mix that brings the reader up to date with the frontier of this fundamental research.

Reviewed by Felix Theeuwes
Vice President, Product
Research and Development
Alza Corporation
Palo Alto, CA 94304

Foreign Compound Metabolism in Mammals, Vol. 6. A Specialist Periodical Report. Senior Reporter D. E. HATHWAY. The Royal Society of Chemistry, Burlington House, London, W1V 0BN, England, 1981. 390 pp. 13 × 22 cm. Price \$138.00.

This book is the latest in a series of literature reviews on the titled subject which are compiled by Dr. Hathway and associates every two years. For the most part, the organization of the book follows the format introduced in the previous volume. With the exception of the first chapter on pharmacokinetics, the emphasis is on papers published during 1978 and 1979 pertaining to the biotransformation of xenobiotics. Although most of the book is devoted to drugs, there are chapters on "Industrial Chemicals and Miscellaneous Organic Compounds," "Agricultural Chemicals," and "Food Additives."

This series represents the closest thing available to a systematic, periodic review of both the conceptual and compound-oriented aspects of the drug metabolism literature. Although the reviewed literature is 2-3

years old, a search of the *Science Citation Index* for the cited references can bring anyone up to date in the areas of drug metabolism covered in a relatively short time. The material presented appears adequately indexed to allow this volume to be used for reference purposes. In contrast to the previous volume, an author index has been omitted. This is not a serious loss because most workers are more interested in following a particular subject or compound rather than an author (other than themselves). The table of contents is as sufficiently detailed as a subject index whereas the "Index of Compounds and Metabolites" at the back of the book lists specific compounds discussed.

Despite a few lapses found, *e.g.*, misspelling my name, eliminating three coauthors (reference 43 on p. 205) and misplacing reference 60 on p. 207, the authors appear to have succeeded in producing a valuable (and expensive) contribution to the practice of drug metabolism.

Reviewed by Morton A. Schwartz
Department of Biochemistry
and Drug Metabolism
Hoffmann-La Roche Inc.
Nutley, NJ 07110

Steroid Analysis by HPLC: Recent Applications (Chromatographic Science Series, Volume 16). Edited by MARIE P. KAUTSKY, Dekker, Inc., 270 Madison Avenue, New York, New York 10016, 1981. 397 pages bound and illustrated. 15 × 23 cm. \$45 (Price is 15% higher outside the U.S. and Canada).

This book is divided into 11 major sections on: Bile acids, cardiac glycosides and related steroids, progestins, synthetic adrenocorticosteroids in pharmaceutical preparations and biological fluids, estrogens, D vitamins, determination of sterol intermediates in cholesterol biosynthesis, steroid hormones in adrenal and testicular cells, enzymatic steroid epimers, and analysis of natural and synthetic hormones in foods and feeds.

This volume is a collection of reviews by practicing chromatographers who describe their own work in detail and review in less detail work done by numerous others. Some 1980 references are cited but most are from 1979 or before. Recent reviews are included in the 654 references cited in the eleven sections. However, the editor states that the volume makes no attempt to include all of the recent applications of HPLC to steroid analysis.

The book is written for practicing analytical chemists, presenting laboratory tested approaches to problems in steroid separation and quantitation. Sufficient details are included to enable the analyst to quickly set up a system that would give satisfactory chromatography for routine analyses. This book would be a good source for information for any chromatographer who may be faced with an analysis in the steroid field for the first time. It could also be used for the purpose of reviewing any topic in the subject areas for developing new ideas, and for identifying key references. However, anyone using this book for the latter purpose should also supplement the information by surveying the current literature, since the publication rate of recent advances in the steroid area has been growing rapidly.

Reviewed by Robert E. Graham
Food and Drug Administration
Dallas District
Dallas, TX 75204

Food Chemicals Codex, Third Edition. Prepared by the Committee on Codex Specifications, Food and Nutrition Board, Division of Biological Sciences, Assembly of Life Sciences, National Research Council, National Academy of Sciences, 2101 Constitution Ave., N.W., Washington, D.C. 20418. 1981. 735 pp. Price \$45.00.

The *Food Chemicals Codex* is the definitive source of information on food additives and processing aids. This new edition has been extensively revised and updated since the second edition, published in 1972. Over 800 food ingredients and processing materials are included in 776 monographs, 113 of which are new. A series of 400 IR spectra for many

essential oils and flavoring compounds is also new to this edition. Specifications for flavor aromatics and isolates are now given in clear tabular form.

In the area of policy, the new edition contains a set of guidelines for "good manufacturing practice" developed by the Committee on Codex Specifications.

Officially, the Codex is recognized by the Food and Drug Administration which adopted certain Codex specifications in 1971.

This book is essential to anyone working in the areas of food science and technology, quality control, and good research. More than 600 scientists from a variety of disciplines contributed to this work as well as many trade associations and professional societies.

Purchasers of this edition are entitled to receive three supplements to the Codex, included in the purchase price.

Staff Review

Textbook of Biopharmaceutic Analysis. By R. V. SMITH and J. T. STEWART. Lea & Febiger, 600 Washington Square, Philadelphia, PA 19106. 1981. 308 pp. 18 × 25 cm. Price \$25.00 (Canada \$30.00)

To better prepare the practitioner for anticipated new roles in the delivery of health care, pharmaceutical education has evolved from a product oriented emphasis to a clinically oriented one. This change has given rise to such courses as biopharmaceutics, clinical pharmacy, and clinically oriented clerkships and externships. In addition, it often has necessitated the restructuring of the traditional basic science courses in order to provide a more adequate background for the clinical sciences. This textbook treats those aspects of analytical chemistry, analytical microbiology and biochemistry, and drug assay that concern the development and application of procedures for the determination of drugs and their metabolites in the biological fluids. This volume appears to be the first attempt to provide such a body of knowledge in textbook form for utilization in the pharmacy curriculum.

This book is divided into three sections: "Defining the Problem," "The Separation Step," and "The Measurement Step." This sequence is based on the approach that one would presumably follow in developing a methodology for the determination of a drug or its metabolites in biological fluids. The first section presents relevant background material, covers the development of methods for determining trace levels of medicaments in biological fluids, and deals with the procurement and characterization of reference standards. While three sources of reference standards are mentioned, unfortunately, the United States Pharmacopoeial Convention has been overlooked.

The second section reviews the major separation and purification techniques including liquid-solid extraction, liquid-liquid extraction, partition coefficient, ion-pairing procedures, and the major chromatographic methods, *i.e.*, TLC, GC, HPLC, gel permeation, and ion-exchange chromatography.

The third section covers techniques for measurement and encompasses 10 chapters. Separate chapters are devoted to the following topics: statistical treatment of data, treatment of chromatographic data, UV-visible absorption and emission spectrophotometry, fluorimetry and phosphorimetry, electroanalytical methods, radiochemical methods, immunoassay techniques (RIA, EMIT, HI, SLFIA, and spin immunoassay), microbiological assay methods, enzymatic analysis, and a very brief concluding chapter on the method of selecting the appropriate analytical procedure for a particular situation. An array of pertinent literature references is provided at the end of each chapter along with a series of learning objectives to assist the student in reviewing the chapter content. Additional recommended readings are presented for more advanced students.

This text is written in a lucid manner, is well-organized, and the information is presented in a logical format. While the content of this book may be presented as a separate course offering, the subject matter may be more appropriately covered as segments in those courses where the basic concepts are taught, or it may possibly be included as a component of one of the clinical science courses. This material is important and serves well as a bridge between the clinical sciences and the basic pharmaceutical sciences. It merits consideration in the pharmaceutical curriculum.

Reviewed by Martin I. Blake
University of Illinois
College of Pharmacy
Chicago, IL 60612

Pharmacognosy, 8th edition. VARRO E. TYLER, LYNN R. BRADY, and JAMES E. ROBBERS. Lea & Febiger, Philadelphia, PA 19106. 1981. 520 pp. 18 × 25 cm. Illustrated with Numerous chemical structures, figures and photographs. Price: \$31.50 U.S., \$37.75 Canada.

This modern pharmacognosy text is all-inclusive and deals with drugs of natural origin that make up close to 50% of all medicinals currently employed. It has been the standard textbook of pharmacognosy in the U.S. for a number of years, and is the only one which has been periodically updated. It provides a systematic and comprehensive review of plant and animal drugs in a biochemical classification system. Major chapter titles include, general introduction, carbohydrates and related compounds, glycosides and tannins, lipids, volatile oils, resins, steroids, alkaloids, peptide hormones, enzymes, vitamins, antibiotics, biologicals, allergens and allergenic preparations, poisonous plants, and a new section entitled, herbs and "health foods". Several obsolete drugs and references have been deleted and new materials added where appropriate. Many of the chemical structures have been redrawn to reflect appropriate steric configurations. New prescription products as examples of the various drugs have been added as required.

In general, the new edition has retained the flavor of the previous ones with much updating. The chapter on herbs and "health foods" is a welcome addition to a subject that has gained popularity in recent years. This chapter has wisely divided the literature references into two groups, *e.g.*, authoritative and advocacy literature. This will help the pharmacist and others who use it, to determine whether the references their patients use are good or bad since self medication with herbs and teas has become common. However, several excellent recent references on the hazards of herbal teas and ginseng tea analysis have been omitted, and should be included in the next edition. As a constructive criticism, more recent key journal articles and reviews also should be included in the chapter references. This edition is really top-heavy with text references. Since text references tend to be dated by publication time, this policy detracts from access to recent literature and the usefulness of the book. This text is a must for all pharmacists.

Reviewed by Ara Der Marderosian
Professor of Pharmacognosy
Philadelphia College of
Pharmacy and Science
Philadelphia, PA 19104

BOOK NOTICES

Abrege de Chimie Analytique. Tome I. Chimie des Solutions. By MICHAEL GUERNET and MICHEL HAMON. Masson 120, bd St-Germain 75280 Paris, Cedex 06, France. 1981. 238 pp. 19 × 21 cm.

Addendum to the Second Supplement to USP XX and to NF XV. The United States Pharmacopoeial Convention, Inc., 20th & Northampton Street, Easton, PA 18042. 342 pp.

Aliphatic and Related Natural Product Chemistry. Vol. 2. (A Specialist Periodical Report). Senior Reporter: F. D. GUNSTONE. The Royal Society of Chemistry, Distribution Centre, Blackhorse Rd., Letchworth Herts., SG6 1HN, England. 1981. 265 pp. 13 × 22 cm. Price \$104.00.

Alkaloid Chemistry. By MANFRED HESSE. Wiley, One Wiley Drive, Somerset, NJ 08873. 1981. 231 pp. 15 × 23 cm.

Biochemical Regulation of Blood Pressure. Edited by RICHARD L. SOFFER. Wiley, One Wiley Drive, Somerset, NJ 08873. 1981. 456 pp. 15 × 23 cm. Price. \$49.50.

Biochemistry of Antimicrobial Action. 3rd ed. By T. J. FRANKLIN and G. A. SNOW. Methuen, Inc. 733 Third Avenue, New York, NY 10017. 1981. 217 pp. 15 × 24 cm. Price \$35.00 (hardcover), \$17.95 (paperback).

Biopharmazie. Theorie und Praxis der Pharmakokinetik. By HERAUSGEGEBEN von J. MEIER, H. RETTIG and H. HESS. George Thieme Verlag, Stuttgart, West Germany. 1981. 473 pp. 17 × 24 cm. (German).

Coca and Cocaine, Vol. 3, issues 2-3 of the Journal of Ethno-Pharmacology. Edited by L. RIVIER, J. G. BRUHN. Elsevier, P. O. Box 211, 1000 AE Amsterdam, The Netherlands. 1981. 379 pp. 16 × 24 cm.