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*

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**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 Pharmacopeial 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.

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**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 ginsing 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.

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## 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 Pharmacopeial 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.