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BOOKS

REVIEWS

Advances in General and Cellular Pharmacology. Vol. 1. Edited by TOSHIO NARAHASHI and C. PAUL BIANCHI. Plenum, 227 W. 17th St., New York, NY 10011. 1977. 252 pp. 16 × 23 cm. Price \$24.50.

This book is divided into five sections with the titles and authors as follows: Cardiac Cellular Pharmacology, Automaticity in Cardiac Muscle: Its Alteration by Physical and Chemical Imbalances, by Frances M. Wald and J. Thomas Bigger, Jr.; Actions of Opiates and their Antagonists on Cholinergic Transmission in the Guinea Pig Ileum, by Seymour Ehrenpreis; Pharmacology of Heart Cells During Ontogenesis, by Achilles J. Pappano; Analysis of Dose-Response Relationships, by Douglas R. Waud; and Cellular Pharmacology of Ganglionic Transmission, by Syogoro Nishi.

Characteristics of the automaticity in the myocardium after spontaneous diastolic depolarization are included in the first section. The subsection describing depolarization modification by physical and chemical factors contains especially comprehensive information on alterations induced by several cardiac drugs including β -adrenergic blocking agents, lidocaine, phenytoin (diphenylhydantoin), quinidine, procainamide, and digitalis.

Ehrenpreis describes experiments utilizing the electrically stimulated guinea pig ileum. A table listing 12 opiates or their antagonists, relating a correlation between effects on the ileum and analgesic potency, is of interest. A postulated relationship of the prostaglandin system to cholinergic transmission is given special treatment.

A major contribution of the section on ontogenesis is information regarding the effects of autonomic drugs on the physical and mechanical properties of chick embryo hearts. Nicotine and tyramine, thought to act by neurotransmitter release, tetrodotoxin, and the digitalis glycosides were also studied on this test object. In addition, limited experiments on heart cells in culture were described, giving data on a nerve free system.

The section entitled Analysis of Dose-Response Relationships has its forte in the comprehensive presentation of the kinetic approach. Pertinent information on experimental design and statistical evaluation is especially valuable.

Nishi concludes the volume with a section that thoroughly considers postsynaptic muscarinic and nicotinic sites, as well as receptors described as excitatory noncholinergic and inhibitory adrenoceptive sites. A review of presynaptic receptor sites and transmitter liberation is a highlight of this section. Physiopharmacologic characteristics of the postsynaptic membrane are also discussed.

This book is a definite contribution to the pharmacologic literature. The authors are prolific in the reference portion of their sections. The well-documented reviews in each section and the concise presentation of the author's original research are uniformly exceptional throughout this publication. This book is valuable primarily as a reference text across interdisciplinary lines in the biological and physical science areas, and one anticipates future volumes of this quality.

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Biopharmaceutics and Clinical Pharmacokinetics. By MILO GIBBALDI. Lea & Febiger, Washington Square, Philadelphia, PA 19106. 1977. ix + 181 pp. 17.5 × 25.5 cm. Price \$8.50.

This book began as a chapter in "Theory and Practice of Industrial Pharmacy" edited by Lachman, Lieberman, and Kanig (Lea & Febiger, 1970). The first edition was a reprint of the chapter in paperback. The second edition retains the advantages of an inexpensive paperback, but it has been considerably expanded and updated. The most useful changes are: division of the book into chapters, addition of many valuable new references, and addition of a significant amount of clinical pharmacokinetic material.

Chapter 1 is a very brief introduction to pharmacokinetics, in which the discussion is restricted to the one-compartment body model. The concepts of drug accumulation and repetitive dosing are also introduced. This chapter could serve as a concise review for a recently graduated pharmacist, but it is not sufficiently detailed to be used alone for the teaching of pharmacokinetics on the undergraduate level.

The next three chapters deal with the GI absorption of drugs. The discussion progresses clearly and logically from biological factors, such as membrane structure, to the role of the dosage form. Chapter 2 reviews membrane structure and function and GI physiology in humans. Chapter 3 discusses such physicochemical factors as pH-partitioning, solubility, and rate of dissolution. Chapter 4 discusses dosage form factors that influence drug dissolution in the GI tract. This chapter contains a survey of several drugs found to present bioavailability problems in humans, with a brief discussion of each drug. This chapter is particularly effective in giving the reader a perspective of the importance of bioavailability testing and control of drug products.

Chapter 5 deals with routes of administration other than oral and discusses relatively recent observations concerning the variability and unreliability of the intramuscular route.

Chapter 6 discusses drug disposition, including tissue distribution, renal excretion, and drug metabolism. Although this chapter is not thorough enough to be used as a sole resource for teaching purposes, it is a suitable review in preparation for the subsequent chapters on the clinical utility of plasma drug concentrations.

Chapter 7, Intersubject Differences in Drug Concentration in Plasma, is an excellent introduction to the complexities one faces in trying to control and adjust drug dosages in individual patients in the real clinical world. Some topics covered are: body weight; sex; age, particularly the newborn; genetic factors; renal, hepatic, and other diseases; and drug interactions. In this chapter, as in Chapter 4, many examples of specific drugs and specific clinical conditions are presented, and the discussion is generously referenced.

The final chapter continues in the drug-by-drug style, with the emphasis on the significance of plasma drug concentrations as guides to efficacy and toxicity. Some of the drugs discussed are warfarin, digoxin, gentamicin, phenytoin, theophylline, salicylate, lidocaine, propranolol, lithium, and nortriptyline. The presentation is clear and to the point, with the added advantage of having practical value in identifying drugs for which monitoring of plasma concentrations may be helpful in guiding therapy.

The book is well written in a very understandable style, with many examples and ample references in each chapter. Although certain chapters would require considerable amplification in the classroom, this book could serve as an inexpensive text for an undergraduate course in bio-

pharmaceutics and clinical pharmacokinetics. It would also be useful as a review or first introduction for practicing pharmacists as well as students and practitioners in related health fields.

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Pharmacological and Biochemical Properties of Drug Substances, Vol. 1. Edited by MORTON E. GOLDBERG. American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington DC 20037. 1977. 413 pp 16 × 23 cm. Price \$21.00 (\$14.00 member rate).

This volume, which promises to be the first of a continuing series, is designed as a companion series to "Analytical Profiles of Drug Substances" edited by Klaus Florey. While Florey's series emphasizes chemical properties of drugs, this volume has the overall objective of reviewing the biological properties of agents that represent prototypes for the major classes of drugs available.

The contents of this initial volume include central nervous system agents (clozapine and pemoline), cardiovascular agents (clonidine and dobutamine), chemotherapeutic agents (amikacin and cefazolin), anti-inflammatory agents (fenoprofen, halcinonide, and tolmetin), pulmonary and antiallergy agents (albuterol, cromolyn sodium, and terbutaline), GI agents (cimetidine and prostaglandin analogs), antifertility agents (prostaglandin analogs), and diagnostic agents (metrizamide). The general outline for each monograph consists of a brief discussion of the chemistry of the compound followed by animal pharmacology, toxicology, biopharmaceutics, and clinical pharmacology. The most valuable sections are the discussions of animal and clinical pharmacology.

Most chapters contain extensive tables of data. Some monographs also include descriptions of the agent's effect in pharmacological tests unrelated to its therapeutic indication. This information is particularly interesting because it is often difficult or impossible to extract from the primary literature.

Most monographs, except the monograph on pemoline, contain references into the 1976 and, in some cases, the 1977 literature. All monographs, except the one on clozapine, contain the title of the referenced articles. The volume is relatively free of errors, although the tables on pages 161 and 231 contain ED₅₀ values that do not fall within the quoted confidence limits.

As stated above, as well as in the preface of the volume, the editor's objective was to include prototypes for the major classes of drugs available. This reviewer does not believe that drugs such as amikacin, cefazolin, fenoprofen, and tolmetin can be considered as prototypes of classes in keeping with Webster's definition. On the other hand, clonidine and cimetidine certainly would be considered prototypes. Of course, including only true prototypes would lead to a short series of volumes. Followup drugs such as those mentioned are valuable additions to this volume. Their value would be further increased if emphasis were given not only to comparing them with their original commercial target but also to comparing them with other drugs in development by competitors aiming for these same targets.

In summary, the concept of this series promises to be a valuable addition to the pharmaceutical literature. Its success will depend on the discipline of its editor and the objectivity of its authors.

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NOTICES

The Synthesis of Prostaglandins. By ABHIJIT MITRA. Wiley, 605 Third Ave., New York, NY 10016. 1977. 444 pp. 15 × 23 cm.

This book presents a comprehensive review of the new synthetic methods and reactions used to construct prostaglandins, describing in detail almost all of the syntheses of the naturally occurring compounds,

thromboxanes, and analogs. Various syntheses are classified according to major synthetic strategies. The individual synthesis is then presented with a brief introduction highlighting the key reaction(s) and followed by a synthetic strategy in the form of a flow diagram that shows the strategic bond disconnections. The actual synthesis is depicted in flow-sheet form with extensive footnotes explaining the reactions and their stereochemical outcome if applicable. Both author and subject indexes are included.

Catecholamines of 'Developing' Brain. Preconditioning of Behavior (Aggression? Anxiety?). By CLARA TORDA. Walters, 101 W. 12th St., New York, NY 10011. 1977. 255 pp. 20 × 28 cm.

Biochemistry. By PAUL JAY FRIEDMAN. Little, Brown, 34 Beacon St., Boston, MA 02106. 1977. 211 pp. 21 × 28 cm. Price \$7.95.

Hagers Handbuch der Pharmazeutischen Praxis. Edited by P. H. LIST and L. HÖRHAMMER. Springer-Verlag, 175 Fifth Ave., New York, NY 10010. 1977. 570 pp. 16 × 24 cm. Price \$65.20.

Epidemiological Evaluation of Drugs. Edited by F. COLOMBO, S. SHAPIRO, D. SLONE, and G. TOGNONI. PSG, 545 Great Rd., Littleton, MA 01460. 1977. 333 pp. 16 × 24 cm. Price \$23.00.

Clinical Psychopharmacology. Edited by JERROLD C. BERNSTEIN. PSG, 545 Great Rd., Littleton, MA 01460. 1977. 154 pp. 15 × 24 cm. Price \$12.50.

Peptide Transport and Hydrolysis. Ciba Foundation Symposium 50 (new series). Edited by KATHERINE ELLIOTT and MAEVE O'CONNOR. Elsevier, 52 Vanderbilt Ave., New York, NY 10017. 1977. 385 pp. 16 × 24 cm.

Health and Disease in Tribal Societies. Ciba Foundation Symposium 49 (new series). Elsevier, 52 Vanderbilt Ave., New York, NY 10017. 1977. 344 pp. 16 × 24 cm.

Organic Syntheses. Vol. 57. Edited by CARL R. JOHNSON *et al.* Wiley, 1 Wiley Drive, Somerset, NJ 08875. 2047 pp. 15 × 23 cm. Price \$12.95.

Problems of Clinical Pharmacology in Therapeutic Research: Phase 1. Edited by H. P. KUEMMERLE, T. K. SHIBUYA, and E. KIMURA. Urban & Schwarzenberg, 7 E. Redwood St., Baltimore, MD 21202. 1977. 420 pp. 15 × 23 cm. Price \$28.50.

Biosynthesis. Vol. 5. A Specialist Periodical Report. Edited by J. D. BU'LOCK, *et al.* The Chemical Society, Burlington House, London, W1V 0BN, England, 1977. 318 pp. 13 × 22 cm. Price \$45.00. Available from Special Issues Sales, American Chemical Society, 1155 16th St., NW, Washington, DC 20036.

Drug Discrimination and State Dependent Learning. Edited by BENG T. HO, DANIEL W. RICHARDS, III, and DOUGLAS L. CHUTE. Academic, 111 Fifth Ave., New York, NY 10003. 1978. 392 pp. 15 × 23 cm. Price \$23.00.

Manual of Anesthesia. By JOHN C. SNOW. Little, Brown, 34 Beacon St., Boston, MA 02106. 1977. 547 pp. 14 × 22 cm. Price \$12.50.

Workplace Safety and Health. The Role of Workers' Compensation. By JAMES ROBERT CHELIUS. American Enterprise Institute for Public Policy Research, 1150 17 St., NW, Washington, DC. 20036. 1977. 97 pp. 15 × 23 cm. Price \$2.75.

WHO Expert Committee on Specifications for Pharmaceutical Preparations. Twenty-Sixth Report. World Health Organization, 49 Sheridan Ave., Albany, NY 12210. 1977. 53 pp. 13 × 20 cm. Price \$2.80.

International Nonproprietary Names (INN) for Pharmaceutical Substances. Cumulative List No. 5. World Health Organization, 49 Sheridan Ave., Albany, NY 12210. 1977. 332 pp. 17 × 24 cm. Price \$19.20.

Perspectives in Pharmacy. Edited by ALBERT I. WERTHEIMER and MARGARET L. SCHUBERT. College of Pharmacy, University of Minnesota, Minneapolis, MN 55455. 1977. 84 pp. 15 × 23 cm.

Toxicologic Emergencies. A Handbook in Problem Solving. By LEWIS R. GOLDFRANK and ROBERT KIRSTEIN. Appleton-Century-Crofts, 292 Madison Ave., New York, NY 10017. 1977. 180 pp. Price \$9.75.

Physical Chemistry for Students of Pharmacy and Biology. 3rd Ed. By S. C. WALLWORK and D. J. W. GRANT. Longman, 19 W. 44th St., New York, NY 10036. 1977. 607 pp. 14 × 22 cm. Price \$18.00.