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BOOKS

REVIEWS

Burger's Medicinal Chemistry, 4th Ed., Part III. Edited by MANFRED E. WOLFF. Wiley, 605 Third Ave., New York, NY 10016. 1981. 1354 pp. 18.5 × 26 cm. Price $100.00.

This book is part of an excellent series in the medicinal chemistry field. With contributions by a number of knowledgeable and literate authors, the contents include drugs acting on the central nervous system, the autonomic nervous system, the cardiovascular system, and the renal system. The book is a well-balanced blend of the theoretical and practical aspects of the field and its potential application to new discoveries.

Each chapter is well planned, emphasizes biochemical rationale, structure–function relationships, and metabolism, and is adequately referenced to provide the reader with sources of more detailed information. This text is also characterized by thoughtful attention to pedagogy, since the prose does more than fill the space between structures and equations. The book contains many useful tables, graphs, and other illustrations and is replete with numerous structures.

Professor Wolff has assembled an informative and excellent text, so it is regrettable that the major limitation of this potentially useful text appears to be its price. Overall, the present volume together with Parts I and II of the series offers a high quality and useful source of information with broad application across the biomedical sciences. Professor Wolff upholds the series' reputation as one of the classic and indispensable reference works for those in teaching and research.

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Principles of Medicinal Chemistry. Edited by WILLIAM O. FOYE. Lea & Febiger, 600 S. Washington Square, Philadelphia, PA 19106. 1981. 931 pp. 18 × 26 cm. Price $45.50. (Canada $54.50).

This book assembles 39 chapters of information associated with textbooks intended for undergraduate courses in organic medicinal chemistry. The first six chapters give effective coverage of general introductory principles; thereafter, with the exception of Chapters 27–29 (which provide good introductions to drugs of plant origin and subsequent chapters on chemotherapeutic agents), the book proceeds systematically through major pharmacological or therapeutic classes of drugs.

Discussions are generally restricted to organic agents, although actions of some inorganic agents such as iodine and iodides, sodium nitroprusside, and gold sodium thiosulfate are cited. The last chapter is also an exception to the overall organic medicinal chemical content in that it incorporates a very good introduction to radiopharmaceuticals. Finally, there is an appendix containing useful compilations of pKa values for a number of drugs and pH values for body fluids.

The authors of the chapters dealing with the pharmacological classes of agents have used a variety of formats to cover their topics. In general, they discuss pharmacological actions, absorption, distribution, metabolism and excretion, clinical uses, and structure–activity relationships and give appropriate examples. Often this information is set out against a background survey of biochemistry pertaining to the group under consideration. In some of these chapters, the explanations of the agents' pharmacological actions, based on the structural reasons for their ability to fit into a biochemical sequence, are impressive. The overall quality of these chapters, despite differing organizational styles, is very good.

While the individual chapters impress as compact, self-contained entities, some readers may notice instances of redundancy. For example, the scheme for catabolism for certain neurotransmitters is repeated in detail in several chapters and the pharmacology of a number of therapeutic agents is given several times. It is possible that such repetition cannot be avoided in a multiauthored work. In addition, while background pharmacology, biochemistry, and the clinical uses of the agents are almost always thoroughly treated, chemical properties such as acidity, basicity, and chemical stability are sometimes not discussed. Perhaps inclusion of such coverage would not only help students appreciate some pharmaceutically important properties but would also help them relate structure and chemical properties to absorption, distribution, metabolism, excretion, and biological actions.

In summary, all chapters bear evidence of careful scholarly preparation. They are generally thorough and current in their coverage and are quite readable. The book meets its objectives very well and should afford excellent reading for medicinal chemists, pharmacologists, and students in pharmacy and related disciplines.

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Toxicants and Drugs: Kinetics and Dynamics. By ELLEN J. O'FLAHERTY. Wiley, 605 Third Ave., New York, NY 10016. 1981, 398 pp. 16 × 24 cm. Price $42.50.

This useful book approaches a complex subject with a disarming frankness not usually found in such texts. In the preface, the author states that the first chapter reviews algebra and calculus at a level designed to give nonmathematicians—even antimathematicians!—confidence that they can "do" kinetics. After hopefully instilling such confidence and expertise, the reader is eventually lead into sophisticated concepts relating to disposition in saturable and nonlinear systems, the plateau principle of chronic exposure, receptor theory, pharmacodynamics and dose–response relationships. The book is a gem. A useful list of definitions of various symbols is included as a separate section and as an added bonus, a number of interesting problems taken from examples in the

literature are provided at the end of each chapter. Some helpful hints but no answers are given, however.

No doubt pharmacokineticists will differ with the author in some of her interpretations, but this should not be viewed as particularly unusual nor detrimental. No one, however, could argue with the avowed purpose of the book, which is "to bridge the gap between pure mathematical theory, at the one extreme, and the indiscriminate application of simple standard models to data that they may not adequately describe, at the other." To this end, the author has made a notable contribution. Researchers in pharmacology, toxicology, and drug metabolism will find it a valuable addition to their bookshelf.

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Psychotropic Drugs. Plasma Concentration and Clinical Response. Edited by GRAHAM D. BURROWS and TREVOR R. NORMAN. Dekker, 270 Madison Ave., New York, NY 10016. 1981. 528 pp. 15 × 23 cm. Price $68.00 (20% higher outside the U.S. and Canada).

This book is well written and highly readable, with an avowed purpose of presenting all evidence, pro and con, of the relationship between plasma concentrations and clinical response of psychotropic drugs. Never mind that we have to wait until Chapter 5 before the question is first addressed—the preceding chapters are useful summaries of the mechanism of action, methodology, and pharmacokinetics of tricyclic antidepressants and antipsychotic agents.

If this puts the reader in a mood to skip around before settling down to read the book straight through, then he or she may as well read the last chapter first—a perceptive overview of the subject by Hollister. His rather pessimistic estimation of the value of measuring plasma concentrations may disappoint some readers, but be sure to judge his reasons fairly before dismissing his conclusions. We learn, for example, that the rationale behind measurement of plasma concentrations of antianxiety drugs has been for pharmacokinetics and not for monitoring treatment. This is corroborated in the chapter on benzodiazepines.

Perusal of the remaining chapters in this interesting book—on zimelidine, lithium, antipsychotic agents, butyrophenones, sedatives, hypnotics, and anticonvulsants—is revealing since, with only one exception, the various authors conclude that the relationships between plasma concentration and clinical response showed "no consensus," were "questionable" or "futile," or "correlate poorly" or that the measurements were "naive" or "uninformative." The exception is, of course, lithium. This all might make one long for the simpler days of the sulfonamides and clear correlations between plasma concentrations, therapeutic response, and side effects.

As minor criticisms of the book, this reviewer found Chapter 8 on chlorpromazine to be too exhaustive in its historical treatment and too vituperative in defense of the author's own analytical method. In addition, separate chapters on zimelidine and pharmacokinetics of tricyclic antidepressants and cerebrospinal fluid seem unnecessary.The terminology "plasma levels" also appears, which smacks of jargon, yet attempts to eliminate it will be a losing battle.

The book, in general, will be valuable to pharmacologists, clinicians, drug metabolism scientists, and analytical chemists in this field.

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Adrenergic Activators and Inhibitors. Part II. (Handbook of Experimental Pharmacology, Vol. 54/II.) Edited by L. SZEKERES. Springer-Verlag, 44 Hartz Way, Secaucus, NJ 07094. 1981. 936 pp. 17 × 25 cm. Price $224.20.

This book is the second part of the latest volume in the well-known *Handbook* series and contains two sections and 14 chapters. The first section covers the effects of autonomic drugs on organ systems other than the nervous and cardiovascular systems. There are chapters on the respiratory system, skeletal muscles, digestive system, endocrine glands, genitals, kidneys, urinary tract, eyes, and sweat glands. The second section covers kinetics, toxic effects, biotransformation, and clinical implications. All types of adrenergic drugs are covered in great detail, including receptor agonists and blocking agents, indirect-acting agonists, false transmitters, and neuron-blocking agents.

As expected, this handbook is well-referenced. The material presented is fairly up to date, with the latest references dating from 1978. There are more than 10,000 items in the author index and about 13,500 separate entries in the subject index.

Each chapter includes some discussion of functional anatomy, location and classification of receptors, and general effects of the drug types of interest. Species variation in drug response are fully covered. In fact, some unusual and exotic species are included. For example, the apocrine sweat glands of the camel, the black rhinoceros, and the slow loris are described.

It may be unfair to criticize the second part of a two-set volume without seeing the first part. However, there are some obvious deficiencies. For example, in the chapter on the respiratory system, there is an obvious error of calculation in a table showing the selectivity index for metaproterenol. There is no mention of the effects of beta blockers on childbirth. In the chapter on the kidney, only receptor agonists and blocking agents are covered; the other types of adrenergic drugs are not considered. However, these minor deficiencies do not detract from the quality of this book.

This volume is an invaluable resource for all researchers in pharmacology and, together with Volume I, should be available to every serious student of pharmacology.

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