the obese and physiological and pathological factors that influence drug response. A section on correlating clinical response with drug disposition has been added. There also is a new chapter on bioavailability and bioequivalence.

Definitions are presented as a glossary in the first chapter. The processes of liberation, absorption, distribution, metabolism, and elimination are described in Chapter 2. Histological features of organs and cell membranes and drug–receptor interactions are considered in Chapters 3–5.

Absorption mechanisms (Chapter 6), physicochemical principles, including pKa values and partition coefficients (Chapters 7–9), and a physiological discussion of the GI tract and the circulatory system (Chapters 10 and 11) are presented.

Protein binding (Chapter 12), drug metabolism (Chapter 13), and drug elimination (Chapter 14) are mentioned, and drug reabsorption in the kidneys and biliary recycling are presented in Chapter 15.

The next section of the book (Chapters 16–26) deals with mathematical descriptions of various compartmental models. Included are one- and two-compartment models with intravenous and oral dosing. The determination of rate constants by noncomputer techniques is included with a discussion of volumes of distribution. Concentrations after single and multiple doses are calculated. Methods for calculating and using the area under the curve and urine data are presented. Dosage adjustment for children, elderly, and obese patients are presented, as are methods used to calculate dosage regimens for desired results.

The final chapters of the book (Chapters 27–31) deal with the effect of physiological factors on drug response and disposition, nonlinear pharmacokinetics, curve fitting, clinical response correlations with disposition, and bioavailability and bioequivalence. The appendix gives 14 pages of pharmacokinetic information for various drugs.

This book covers many of the topics discussed in an undergraduate biopharmaceutics course and of interest to a clinical pharmacist. Each topic is covered briefly but comprehensively. Both students and practicing pharmacists should find this book to be a very useful aid in understanding and using pharmacokinetic principles.

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Pharmaceutical Dosage Forms: Tablets Vol. 1. Edited by HERBERT A. LIEBERMAN and LEON LACHMAN. Dekker, 270 Madison Ave., New York, NY 10016. 1980. 490 pp. 18 × 25.5 cm. Price $59.75. (A special introductory price of $29.75 is available on orders of five or more copies in the United States and Canada.)

This book is the first in a three-volume treatise designed to examine in detail all phases of tablet technology, from initial development to final quality assurance. In the first volume, each chapter develops from an introduction through to the present pharmaceutical practice. Fourteen authors contributed to this first volume of eight chapters, and they, along with those listed for the other two volumes, represent an illustrious selection of experts in this area.

Chapter I, entitled Preformulating Testing, is an excellent review of all the physical pharmacy testing necessary to characterize a new drug substance. Three excellent case studies are presented. The second chapter, entitled Tablet Formulation and Design, demonstrates how a suitable drug formulation should be developed based on available preformulation knowledge. Compressed Tablets comprises Chapter III in which each unit process step is reviewed, and the advantages and disadvantages of the techniques and excipients available are discussed in detail.

The final five chapters are entitled Compression-Coated and Layer Tablets; Effervescent Tablets; Special Tablets: Sublingual and Buccal Tablets; Chewable Tablets; and Medicated Lozenges. For each, the processing steps and alternatives are reviewed along with details of typical formulations.

The remaining two volumes promise to discuss each unit process in detail. Each chapter in Volume 1 is, however, complete within itself. When publication is completed, this series will be considered as the definitive state of the art. If, as the title implies, further volumes on capsules, liquids, and semisolids follow, this series will become the encyclopedia of pharmaceutical technology. Anyone actively involved in tablet formulation will require access to this series. However, anyone involved in formulation development or evaluation will also find this series to be of great value. It deserves to be the definitive reference for academic use.

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Drug Level Monitoring—Analytical Techniques, Metabolism, and Pharmacokinetics. By WOLFGANG SADÉE and GEERTRUIDA C. M. BEELEN. Wiley, 605 Third Ave., New York, NY 10016. 495 pp. 15 × 23 cm. Price $35.00.

This book is divided into essentially two parts. The first part consists of brief, generalized chapters on drug metabolism, pharmacokinetics, clinical pharmacokinetics and therapeutic drug level monitoring, and analytical techniques. Of these four chapters, the work on analytical techniques is the most extensive.

The second section consists of drug monographs for 102 drugs which were chosen on the basis of being currently measured in clinical pharmacokinetic laboratories, being representative of a class of chemical or pharmacological agents, and/or belonging to the following major classes: antimicrobials, anticancer drugs, antiepileptics, cardiovascular drugs, psychotropic drugs, analgesics, and drugs of abuse. Each monograph contains a brief description of the therapeutic and toxic concentration ranges, metabolism, analogous compounds, and analytical techniques. The last section of each monograph briefly describes the various analytical methods (with pertinent references) that have been employed. References in this section are current to 1978. However, an addendum at the end of the book updates the references through October 1979.

The chapters that appear in the first part of this book are far too brief and cursory to be of value to anyone unfamiliar with the given area. Two pages on the topic of pharmacokinetics is hardly worth the effort. In addition, the treatment of the various analytical techniques is quite unbalanced. Spectroscopic methods such as UV and visible spectroscopy, colorimetry, and fluorescence are given as much coverage as high-performance liquid chromatography, although the latter method is of much greater utility in monitoring blood levels of drugs. Greater coverage of the more important methods at the expense of the less important ones might have been a better approach.

The section containing drug monographs provides a wealth of information and important references. In most cases, some details are given on the most suitable methods.

Despite the shortcomings of the initial chapters, this book will be valuable to anyone engaged in drug level monitoring. Since the book provides a good survey of the pertinent literature, it can serve as an excellent starting point in searching for the best assay for a given drug level monitoring project.

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Clinical Pharmacology, 24th ed. Edited by RONALD H. GIRWOOD. Macmillan, 866 Third Ave., New York, NY 10022. 1980. 608 pp. 15 × 23 cm. Price $29.95.

First published in 1884 in Great Britain, *Clinical Pharmacology* appears to be designed to acquaint medical and paramedical professionals with a relatively complete compilation of currently used drugs. Following two chapters devoted to discussions of Mechanisms Involved in Drug Action and Adverse Drug Reactions are 16 additional chapters that address antimicrobials, analgesics, autonomic and CNS drugs, cardiovascular drugs, drugs affecting the respiratory system, drugs affecting the alimentary system, drugs acting on the kidney, endocrine drugs, vitamins, hematinics, anticoagulants, cancer chemotherapy, heavy metals, and drug treatment of skin disorders. Chapter 19, An International Guide to Proprietary Names, provides a cross-listing of generic names from the trade names of drugs marketed both in Europe and the United States.

Written by one of the six contributing authors, each chapter introduces the drug category, describes the physical or chemical characteristics of

the drug, briefly addresses the mode of action of the drug(s), lists the pharmaceutical preparations available with the recommended dosage, discusses the pharmacodynamic properties of the drug(s) in an uncomplicated fashion, and describes the indications for use and adverse effects (toxicological and allergic). When appropriate, antidotal measures, drug interactions, and contraindications are included.

The book is not a complete treatis on pharmacology and should not be expected to replace general pharmacology texts. Neither does it provide an indepth discourse on the pathological signs or symptoms of diseases or their most appropriate therapeutic approach. It is an easily read introduction into each of these areas. As an aid in using the book as a reference in clinical pharmacology and therapeutics, the index lists the drugs, disease states, pathological conditions, and organisms responsible for infectious pathological diseases. The fact that the book is written and published in the United Kingdom does not detract from its potential, but perhaps limited, usefulness by U.S. pharmacists.

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The Organic Chemistry of Drug Synthesis, Vol. 2. By DANIEL LEDNICER and LESTER A. MITSCHER. Wiley, 605 Third Ave., New York, NY 10016. 1980. 526 pp. 15 × 23 cm. Price $28.00.

This book is Volume 2 in a series and apparently will be followed by future volumes as generic names are granted. Together, Volumes 1 and 2 include syntheses for compounds granted a generic name by the USAN Council through 1976.

In making a comparison between Volumes 1 and 2, one notices immediately that the latter volume is easier to read because of the darker type and greater spacing between lines. This volume, although not errorless, appears to contain fewer mistakes than the previous one. The final 13 pages contain Errata for Volume 1.

As the title implies, the major focus is on organic chemistry (particularly, drug synthesis), with appropriate brief mention of the associated pharmacological action. The authors have done a good job illustrating the reaction mechanisms for many synthetic pathways while keeping details to a minimum. Historical sidelights (*e.g.*, cortisone story on p. 176 and LSD story on p. 476) also enliven the reading.

This volume contains 16 chapters as opposed to 22 in Volume 1. Most of the same chapter headings are carried over in Volume 2. Deletions include: Chapter 1, Introduction; Chapter 2, A Case Study in Molecular Manipulation: The Local Anesthetics; Chapter 7, Arylethylenes and Their Reduction Products (no mention of diethylstilbestrol or its derivatives in Volume 2); Chapter 11, Tetracyclines (this material is incorporated into Chapter 7, Polycyclic Aromatic and Hydroaromatic Compounds); Chapter 12, Acyclic Compounds (new material is found in Chapter 1, Monocyclic and Acyclic Aliphatic Compounds); and Chapter 19, Phenothiazines (incorporated into Chapter 14, Heterocycles Fused to Two Benzene Rings). In addition to the chapter headings for various types of aliphatic, aromatic, and heterocyclic compounds, the chapters on steroids, morphinoids, benzodiazepines, and β-lactam antibiotics are retained. Changes in chapter organization were necessitated by the relative amounts of new work. Volume 2 contains several examples of antineoplastic drug syntheses, which were lacking in the previous volume. The valuable Cross Index of Drugs also is retained.

This book fills a previous void since medicinal chemistry texts sometimes must slight the presentation of drug synthesis. This reviewer finds it to be a valuable contribution, which should be particularly useful to practicing medicinal and organic chemists as well as to students of these disciplines.

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NOTICES

Elsevier's Dictionary of Pharmaceutical Science and Techniques, Vol. 2: Materia Medica. In Six Languages. By A. SLIOSBERG. Elsevier/North-Holland, 52 Vanderbilt Ave., New York, NY 10017. 1980. 552 pp. 15 × 22 cm. Price $122.00.

Lecture Notes in Chemistry, Vol. 15. Steric Fit in Quantitative Structure–Activity Relations. By ALEXANDRU T. BALABAN, ADRIAN CHIRIAC, IOAN MOTOC, and ZENO SIMON. Springer-Verlag New York, 44 Hartz Way, Secaucus, NJ 07094. 1980. 178 pp. 16 × 24 cm. Price $17.50.

Handbook of Biological Psychiatry, Part III: Brain Mechanisms and Abnormal Behavior—Genetics and Neuroendocrinology. Vol. 1. Edited by HERMAN M. VAN PRAAG, MALCOLM H. LADER, OLE J. RAFAELSEN, and EDWARD J. SACHAR. Dekker, 270 Madison Ave., New York, NY 10016. 1980. 383 pp. 15 × 23 cm. Price $29.50.

Reviews of Physiology, Biochemistry and Pharmacology, Vol. 87. Edited by R. H. ADRIAN *et al.* Springer-Verlag New York, 44 Hartz Way, Secaucus, NJ 07094. 1980. 232 pp. 16 × 24 cm. Price $51.90.

Progress in Medicinal Chemistry, Vol. 17. Edited by G. P. ELLIS and G. B. WEST. Elsevier/North-Holland, 52 Vanderbilt Ave., New York, NY 10017. 1980. 280 pp. 14 × 21 cm. Price $64.00.

A Clinician's Guide to Research Design. By GERALD GOLDSTEIN. Nelson-Hall, 111 N. Canal St., Chicago, IL 60606. 1980. 280 pp. 13 × 21 cm. Price $24.95.

Biomedical Polymers. Polymeric Materials and Pharmaceuticals for Biomedical Use. Edited by EUGENE P. GOLDBERG and AKIO NAKAJIMA. Academic, 111 Fifth Ave., New York, NY 10003. 1980. 457 pp. 15 × 23 cm.

Marijuana Research Findings: 1980. NIDA Research Monograph 31. Edited by ROBERT C. PETERSEN. 1980. 221 pp. 14 × 23 cm. (Distributed by U.S. Dept. of Health & Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration, 5600 Fishers Lane, Rockville, MD 20857.)