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.

Reviewed by David Bourne
Division of Pharmaceutics and Pharmaceutical Analysis
University of Kentucky
Lexington, KY 40506

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.

Reviewed by John H. Wood
School of Pharmacy
Medical College of Virginia
Virginia Commonwealth University
Richmond, VA 23298

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.

Reviewed by James W. Munson
The Upjohn Company
Kalamazoo, MI 49001

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