

abundance of practical examples. There are many useful illustrations in graphical and tabular form as well as numerous high quality photographs. All art work is top quality. These volumes will be useful to scientists and students involved in controlled-release technologies.

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**Recent Developments in Mass Spectrometry in Biochemistry and Medicine, 6.** Edited by ALBERTO FRIGERIO and MALCOLM McCAMISH. Elsevier, 52 Vanderbilt Ave., New York, NY 10017. 1980. 553 pp. 16 × 24 cm. Price \$83.00.

This volume is a compilation of the papers from the *Proceedings of the 6th International Symposium on Mass Spectrometry in Biochemistry and Medicine*, Venice, June 1979. It contains 52 papers from a variety of mass spectrometric applications. Similar to the previous series, this volume attempts to bring together the latest information on the application of mass spectrometry and research development and methodology of mass spectrometry. This objective is met in the area of the latest applications in biochemistry and medicine.

This book discusses various applicational aspects from experts in the field and is quite up-to-date. Examples of its applications in lipids, prostaglandins, protein sequencing, biogenic amines, metabolite identification, pharmacokinetics, placental drug transfer, and physiological exchange of endogenous substances are of interest to readers at intermediate to advanced levels in mass spectrometry. It is particularly useful to less sophisticated readers who want to get a glimpse of the field without purchasing the previous volumes of the proceedings. Perhaps disappointing to some experienced researchers is the deficiency in certain aspects of applications such as the use of stable isotopes in pharmacology and pharmacokinetics. This may reflect a lack of participation of certain segment of the biomedical researchers in the symposium.

In the area of latest developments in instrumentation and methodology, it has somewhat short-changed the reader. Several areas such as mass spectrometry-mass spectrometry (multiple mass spectrometry), ion-cyclotron mass spectrometry, and high-pressure liquid chromatography-mass spectrometer interface are not covered. Nonetheless, several chapters in this area are quite valuable, e.g., the description of the Kratos MS 80, the laser microprobe mass analyzer and its applications, low- and high-pressure negative chemical-ionization mass spectrometry, and the disposable surface probe.

This book is divided into six general classifications, including qualitative and quantitative studies of endogenous and exogenous compounds, instrumentation and methodology, and environmental studies. These classifications, although somewhat artificial, are quite helpful in locating quickly a particular area of interest. However, it is not understood why a paper that discusses the application of the electron-capture detector in liquid chromatography without any reference to mass spectrometry was included in this book (pp. 317-330).

This book contains an author index but not a subject index. The former does not serve much purpose because no affiliations of the authors are provided in this index and the name of the author can already be found in the table of contents. The latter, if available, is usually more useful in helping readers locate the subject of interest. However, this book is a reasonably up-to-date reference book on mass spectrometry.

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**Applied Biopharmaceutics and Pharmacokinetics.** By LEON SHARGEL and ANDREW B. C. YU. Appleton-Century-Crofts, 292 Madison Ave., New York, NY 10017. 1980. 253 pp. 16 × 24 cm. Price \$18.50.

This book, intended primarily for undergraduate students in pharmacy and allied health professions, emphasizes pharmacokinetic principles rather than biopharmaceutics. The first two chapters review elementary mathematics and kinetics, and the next three chapters introduce one-compartment and multicompartment pharmacokinetic models. Chapter 6 briefly discusses biopharmaceutics, including absorption mechanisms and dosage form dissolution. Chapters 7-11 deal with absorption kinetics, bioavailability, clearance, hepatic elimination, and protein binding. Chapters 12, 13, and 14 consider intravenous infusions, multiple-dose administration, and nonlinear pharmacokinetics, Chapters 15 and 16 discuss clinical pharmacokinetics, and Chapter 17 describes the kinetics of pharmacological effects.

The book is quite readable, with numerous illustrations. Most chapters contain practice problems, along with detailed solutions. In addition, questions are included at the end of each chapter, and answers are provided in the *Appendix*. One major attribute of the book is the step-by-step illustrations given for some of the more common pharmacokinetic manipulations (e.g., method of residuals, Wagner-Nelson method, and Loo-Riegelman calculation). Only a limited number of references are provided, and they are generally in the form of a bibliography at the end of each chapter.

The text appears relatively free from errors, although several incorrect equations were found, and some generalizations were made that were not as widely applicable as the text seemed to imply. On the whole, the book provides a reasonable introduction to the material, although the somewhat superficial discussion of some topics could mislead someone utilizing the text without a thorough understanding of the limitation and pitfalls in the approaches. However, the book would be suitable as an introductory undergraduate text for a course taught by an instructor experienced in pharmacokinetics.

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**Progress in Drug Metabolism, Vol. 5.** Edited by J. W. BRIDGES and L. F. CHASSEAUD. Wiley, 605 Third Ave., New York, NY 10016. 1980. 358 pp. 15 × 23 cm. Price \$85.00.

This volume is the fifth in a series concerned with various aspects of drug metabolism. This volume is similar to the previous four volumes in that five to six major, current, and timely topics are reviewed. These topics are not necessarily directly related other than that they are concerned with the general topic of drug metabolism.

Chapter 1 deals with the distribution and role of cytochrome P-450 in extrahepatic organs and in prostaglandin metabolism. Steroidogenic organs also are extensively reviewed. The chapter does not include recent investigations involving cytochrome P-450 in the intestine and colon, and most references are pre-1978, although the volume was published in late 1980.

Chapter 2 addresses a topic on which relatively little information exists, namely species variations in xenobiotic metabolizing enzymes. The chapter is restricted to hepatic metabolism, primarily involving microsomal monooxygenases, epoxide hydratase, and glucuronyltransferase. No information is provided on interspecies variation within hepatic and extrahepatic tissues.

Chapter 3 deals with the pharmacokinetics and metabolism of an extensive array of nonsteroidal anti-inflammatory agents including salicylates, arylacetic acids, arylpropionic acids, and *N*-heterocycles. The importance of understanding the basic pharmacokinetic properties of these drugs is emphasized. Some evidence is presented that nonsteroidal anti-inflammatory agents concentrate in inflamed tissues, but the underlying mechanisms and implications are poorly understood. Most references involve work completed prior to 1978.

Chapter 4 is concerned with the monitoring of drug disposition by immunoassay, providing a basic introduction to radioimmunoassays. In addition, there is an extensive discussion on enzyme immunoassays and also luminescent (fluorescent) immunoassays. An enormous amount of literature is now available on the immunoassay of drugs. The authors have provided a distillation and update of information on the background of immunoassays, including theories and applications ranging from practical to research uses.

Chapter 5 deals with the pharmacokinetics and metabolism of industrial chemicals. Because of the large scope of this topic, the authors restricted their discussion to the use of pharmacokinetics involved in tox-

icological evaluation of styrene, 2,4,5-trichlorophenoxyacetic acid, and 1,4-dioxane. Also discussed is the use of pharmacokinetic concepts and risk assessment using vinylidene chloride and tetrachloroethylene as model compounds. The examples used stress the importance of integrating chronic toxicity bioassay results with the pharmacokinetics and resulting macromoleculcular events in assessing the risk of exposure to chemicals.

The nature of the topics covered in this volume is extremely broad, as has been the case with previous volumes. The volume provides a useful addition to the review and evaluation of the literature concerned with drug metabolism. A major drawback of the volume is its price. However, Volume 5 certainly is an important addition to the library of these involved in the field of drug metabolism.

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