

**Biopharmaceutics and Pharmacokinetics: An Introduction** (Second Edition, Revised and Expanded). By ROBERT E. NOLTARL Dekker, 270 Madison Ave., New York, NY 10016, 1975. 285 pp. 15.5 x 23 cm. Price \$13.75.

This is the second edition of a book that has already proven valuable to students of biopharmaceutics and to workers in allied biomedical fields who want to teach themselves pharmacokinetics. As the author points out in his preface, the pharmacokinetics portions of the book are organized almost as a programmed learning text. Each new principle is first briefly described, and all working equations are clearly derived. Then an example problem is completely worked out, and at least one practice problem (with answer) is provided. By using this book, it should be possible, even for students with little or no training in calculus, to become competent to handle most one- and two-compartment pharmacokinetic problems.

In the second edition, the chapters titled Rate Processes in Biological Systems (Chapter 2) and Principles of Pharmacokinetics (Chapter 3) have been rewritten, mostly for the purpose of reorganizing the sequence of material. Fortunately, these chapters have not lost any of their original lucidity.

The chapter titled Biopharmaceutics: Clinical Applications of Pharmacokinetic Parameters (Chapter 4) introduces the reader to factors affecting gastrointestinal absorption of drugs, sustained-release dosage forms, and calculation and prediction of drug concentrations in blood during repetitive dosing regimens. A brief discussion of dosage regimen adjustment in patients with compromised renal function has been added to this chapter. This is a welcome addition since so much emphasis is being placed on this aspect of clinical pharmacy practice today. It is hoped that, in future editions, this section will be expanded to include a more thorough discussion of the topic and a broader coverage of the many examples of drugs that are now routinely dosed according to pharmacokinetic principles.

The chapter titled Pharmacokinetic Aspects of Structural Modifications in Drug Design and Therapy (Chapter 5) is a completely new chapter based on a review written by the author for the *Journal of Pharmaceutical Sciences*. Although this chapter covers essentially the same material as the review article, a number of example problems and leading questions have been added, which should be of significant help to the student in understanding the principles discussed.

Significant general improvements over the first edition are that the chapters have been provided with generous lists of references, and several appendices and an author index have been added. These expansions and improvements coupled with retention of the lucid step-by-step approach to pharmacokinetics that characterized the first edition cause this reviewer to rate this book very highly as a beginning text in biopharmaceutics and pharmacokinetics.

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**Biological Membranes. Their Structure and Function.** By ROGER HARRISON and GEORGE G. LUNT. Halsted, 605 Third Ave., New York, NY 10016, 1975. viii + 253 pp. 14.5 x 20.5 cm. Price \$9.95.

Membrane biology is a rapidly growing field of research, and there are many texts available on this subject for the expert as well as the student. Harrison and Lunt designed their book for advanced undergraduates in biology and biochemistry. It is also an excellent introduction for those interested in beginning research in this area and a very good review for those with a peripheral interest in the biology and anatomy of membranes. This book is well organized, contains many helpful illustrations, and has an adequate bibliography at the end of each chapter.

The first two chapters provide a historical review of the microscope, a general discussion of cellular organelles, and a brief account of membrane functions, which include transfer systems and the role of membrane-bound enzymes. The next chapter deals with the morphology of membranes and presents many electron micrographs. Included in Chapters 4 and 5 are methods for the preparation of isolated membrane fractions and a detailed account of membrane components. There are considerable illustrations, including space filling models of chemical structures. Chapter 6 is an up-to-date dis-

ussion of the structural organization of plasma membranes. It covers the Davson and Danielli model, the current fluid mosaic concept of Singer and Nicholson, and many unanswered questions of membrane structure and biosynthesis.

Chapter 7 contains a general discussion of cell surface specificity, the function of membrane carbohydrates, and the involvement of membrane carbohydrates in histocompatibility antigens and cell recognition and adhesion phenomena. It also includes a cursory look at properties of cancer cells which can be related to alterations in the plasma membrane. Membrane-mediated processes are presented in the next chapter and comprise many cellular activities in which plasma membranes participate.

Chapter 9 is an elementary discussion of transport systems. There are examples and definitions of diffusional processes; however, there are only two mathematical relationships, Fick's law and the Nernst equation. The book ends with a good discussion of ionophoric antibiotics, physical methods used in the study of plasma membranes, and a further reading list categorized by chapter. It is an excellent starting point for students and an enjoyable review for those more familiar with the area.

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**High-Speed Liquid Chromatography (Chromatographic Science Series Vol. 6).** Edited by P. M. RAJCSANYI and E. RAJCSANYI. Dekker, 270 Madison Avenue, New York, NY 10016, 1975. 16 x 23 cm. 203 pp. Price \$15.50.

For this concise, well-organized review, the editors divided the high-pressure liquid chromatographic literature into three sections dealing with theory, instrumentation, and applications. In addition to gradient, pump, and injection systems, columns and preparative techniques are discussed in the instrumentation chapter. The section devoted to detectors is particularly detailed. A number of applications of pharmaceutical interest are reported. These are categorized into sections on alkaloids, carbohydrates, drugs, steroids, vitamins, nucleic acid constituents, and compounds in biological fluids.

Since there are only a few references dated later than 1973, this volume is already somewhat dated, as can be expected for any review of a rapidly developing field such as high-pressure liquid chromatography. For instance, the statement that there have been several recent attempts to extend the usefulness of light absorption detectors over the whole UV-visible range could now be amended to state that such detectors are commercially available and in considerable use. Likewise, the column and application sections do not reflect the present literature emphasis on chemically bonded phases and microparticulate supports.

While this volume does represent a partial update to the thorough coverage presented by Snyder and Kirkland in 1974, it is too brief (123 pages of text) to be considered a replacement. Furthermore, this monograph is a review in the strictest sense in that it lacks the generalization and critical commentary that imparts the invaluable element of experience to a book. With its extensive references, however, it would be useful as an index for rapid access to the literature of a specific topic. For this reason, libraries should acquire a copy. While practitioners will be acquainted with much of the information therein, beginners may find this volume useful as a quick introduction to the field. The quality of print and binding are commensurate with price.

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## NEW JOURNALS

*Journal of Chromatography, Biomedical Applications.* K. MACEK, Editor. American Elsevier, 52 Vanderbilt Ave., New York, NY 10017, January 1977. Price \$49.75 annual subscription (six issues).