

with pharmacology. This edition more boldly and appropriately includes the material on dosage calculations based on body surface area and Fried's rule for the calculation of children's doses based upon age in months. Standard nomograms are included for the conversion of doses based on body weight to doses based on body surface.

Much less successful is the material added in the newly appended Chapter 14. The authors preface their book with an indication that the material contained in this last chapter results from acknowledgment of requests from many instructors. The appended chapter, prepared by two of the authors' colleagues, attempts to review important concepts from chemistry [milliequivalents, electrolyte replenishment, and operator p (pH and pK)], pharmaceuticals (alligation involving the HLB system), and mathematics (logarithms, unit label analysis, and elementary statistics), all within 18 pages and 29 practice problems! The task is hopelessly more global than the space allotted, with the result that nothing in the chapter works well. A seven-page section (with nine practice problems on the elements of statistics, the operator p , and the unit analysis) is totally inadequate and will confuse even the proficient student who turns to it for review. It has no potential as a teaching chapter and the authors would have been wiser in reapplying their reasoning from the preface of the second edition: to reject the inclusion of these materials in the third edition because of duplication with much more authoritative and useful treatments in other standard pharmaceutical textbooks, rather than blemish the new edition with so inadequate a treatment.

Ignoring at least portions of the newly appended chapter as a misplaced and nonfunctioning appendage to the book, Rouse and Webber have provided a useful third edition that will undoubtedly continue to serve as a mainstay textbook for traditional courses in pharmaceutical calculations and as a wealthy storehouse of reference material and practice problems for the student engaged in competency based self-directed study.

*Reviewed by Robert G. Mrtek
College of Pharmacy
University of Illinois at the Medical
Center
Chicago, IL 60680*

Amino-Acids, Peptides, and Proteins. Vol. 7. Edited by R. C. SHEPPARD. The Chemical Society, Burlington House, London, W1V 0BN, England, 1976. 431 pp. 14.5 × 22.5 cm. Price \$57.75.

This volume is the seventh in the series of literature reviews in the field of amino acids, peptides, and proteins. Under the leadership of Dr. Sheppard, a selected group of researchers summarize the developments during 1974 in six chapters. As with previous volumes, the reader can expect the high standards associated with publications of the Chemical Society.

The first four chapters are primarily concerned with an extensive review of the literature regarding amino acids, structural investigations of peptides and proteins, peptide synthesis, and peptides with structural features not typical of proteins. In addition to the usual format, the second chapter contains tables summarizing features of affinity chromatography separations, molecular weights and subunit composition of proteins, uses of chemical modifications of proteins, affinity labeling of proteins, and proteins whose partial or complete sequence was published in 1974. These tables are followed by a summary of references to authors and published articles in an orderly and useful fashion.

A most important feature of this seventh edition is Chapter 5, which covers enzymes for the first time in the series. Dr. Fersht, in a sophisticated yet enjoyable manner, reviews some of the more important papers published during 1974 that were concerned with chemical structure and biological activity of enzymes; very appropriately mentions earlier work done in the area; and presents all sides of current work and some current problems. Chapter 6 is the biennial review of metal derivatives of amino acids, peptides, and proteins. The format

is that followed by previous volumes, and the reader is given a survey of the literature for 1973-1974.

This seventh volume presents the reader with some interesting developments, with further applications of known chemistry, and some presentations of old principles which have been given ingenious new applications. This volume is certainly a comprehensive source of information to researchers interested in amino acids, peptides, proteins, and enzymes. The information should, of course, be supplemented by reading the original literature, especially by students.

*Reviewed by A. Kapoor
Department of Pharmaceutical Sciences
College of Pharmacy and
Allied Health Professions
St. John's University
Jamaica, NY 11439*

Advances in Mass Spectrometry In Biochemistry and Medicine. Vol. 1. Edited by ALBERTO FRIGERIO and NEAL CASTAGNOLI. Spectrum Publications, 86-19 Sancho St., Holliswood, NY 11423, 1976. 586 pp. 16 × 23.5 cm.

This volume is a compilation of 51 separate papers of varying quality, with titles ranging from "Biomedical Applications of Chemical Ionization" to "Gas Chromatography-Mass Fragmentography Pharmacokinetics of Antineoplastic Agents." The text was taken from the proceedings of the Second International Symposium of Mass Spectrometry in Biochemistry and Medicine at the Mario Negri Institute for Pharmacological Research, Milan, Italy, in June 1974. Each chapter was contributed by different authors, and each relates to a different potential application of mass spectrometry in biochemistry and medicine. The topics range in value from prime import to minimal interest. Most chapters contain illustrations such as normalized mass spectra, gas chromatographs, and fragmentation schemes. The illustrations are clearly presented and well labeled. Each chapter includes a thorough bibliography which would enable the reader to do further research on the given theme, if desired.

Topics such as mass fragmentography, gas chromatography-mass spectrometry, stable isotope measurements, field ionization, field desorption, chemical ionization, atmospheric pressure ionization, high-resolution studies, and data acquisition and processing are discussed. In particular, the major topics include detection and identification of drug metabolites and other biomedical applications including biosynthesis and toxicology studies. Applications of mass spectrometry to the study of such important groups of compounds as peptides, steroids, prostaglandins, nucleotides, carbohydrates, and many other natural products and medicinal agents are given. Although mass spectrometry is the principal means of identification of these compounds, various means of isolation and separation are discussed. Also described are derivatization techniques that not only enhance volatility but also generate more intense ions in their spectra.

The papers contained in this volume represent a large cross section of mass spectrometric techniques presently being developed over a broad range field of mass spectrometry. Owing to the scope of this book, it is impossible to evaluate all of the topics covered at one level of criticism. This book does, however, have definite merit, since various mass spectrometry systems represent one of the most powerful means of analysis now available for the study of samples of biologic origin.

This book should serve as a useful source of information to many chemists, biochemists, pharmacologists, and medical researchers. Mass spectrometrists, in particular, will find this book useful in keeping abreast of the many faceted advances in their technology.

*Reviewed by Charles F. Kuhlman
Wyeth Laboratories, Inc.
Research Division
Radnor, PA 19087*