REVIEWS

Amino-Acids, Peptides, and Proteins, Vol. 8. A Specialist Periodical Report. Edited by R. C. SHEPPARD. The Chemical Society, Burlington House, London W1V OBN, England, 1976. 504 pp. 16 × 24 cm. Price $56.00. Available from Special Issue Sales, American Chemical Society, 1155 Sixteenth St., N.W., Washington, DC 20036.

This eighth volume of the continuing series on amino acids, peptides, and proteins covers the literature published in 1975. Like the previous volumes, it is of great help to all of us whose interests lie in peptide and protein chemistry.

The areas reviewed are: amino acids, including their synthesis and resolution; structural investigations of peptides and proteins, which covers protein isolation, characterization, chemical modification, sequence methodologies, and X-ray studies; peptide synthesis; peptides with structural features not typical of proteins; and a very welcome chapter on chemical structure and biological activity of hormones and related compounds. Included in the pertinent chapters are tabulations of primary structures published during 1975 as well as lists of syntheses achieved and of useful amino acid derivatives for peptide synthesis.

Overall, this volume maintains the very high standards we have been accustomed to in this series of Specialist Reports.

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Contemporary Liquid Chromatography. By R. P. W. SCOTT. Wiley, 605 Third Ave., New York, NY 10016, 1976. 326 pp. 16 × 24 cm. Price $21.50.

The outstanding feature of this new book on liquid chromatography is the inordinate number of typographical errors. Errors in syntax and awkward terminology also abound. It is apparent that an editorial vacancy occurred during the production of this latest volume in the *Techniques in Chemistry* series. Hopefully this lapse can be avoided in future volumes.

There is definitely a need for a comprehensive book on modern chromatographic (gas as well as liquid) techniques. The present volume, which purports to cover liquid chromatography, falls far short of what is needed, primarily due to errors of omission and emphasis. There is, by intention, no coverage of thin layer chromatography, size exclusion chromatography, or affinity chromatography, thus abrogating coverage of at least 50% of "contemporary liquid chromatography." The author avoids meaningful discussion of applications to prevent the book from becoming dated. Unfortunately, this tactical maneuver leaves little to offer the practicing chromatographer. It would have clearly been better to discuss theoretical developments and instrumentation in the context of practical problem solving. Although a major portion of the book is devoted to theory, the theory presented is not adequately developed from first principles to interest the serious student, nor is it adequately explained to afford benefit to the casual applications-minded reader.

Approximately one-third of the book is devoted to instrumentation, and in these sections Scott is far more successful. The difficulty here is that the material is either out of date or has been adequately covered (at this survey level) in other recent texts. The author often fails to make value judgements about equipment options, but when an opinion is ventured, I find myself in disagreement. The statement that "it has obviously been established that LC/MS will be a common technique in the future" is typical of a number of shortsighted comments which cannot be substantiated.

The chapter devoted to Stationary and Mobile Phases for Liquid Chromatography suffers in the same manner as the rest of the volume. There is nothing new, there are unbelievable errors of omission (ion exchange is "not within the scope of this book"), and important recent developments have been given short shift (*e.g.*, the application of chemically bonded microparticle stationary phase materials).

As a whole, this book does not do justice to the excellent reputation of its author. Nevertheless, I am pleased to own a copy because there are many good individual sections and it is always useful to get a different perspective. I cannot recommend this volume for the beginner.

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Colorimetric and Fluorimetric Analysis of Steroids. By J. BARTOS and M. PESEZ. Academic (London), 24–28 Oval Rd., London, NW1 7DX, England, 1976. vii + 274 pp. 15.5 × 23.5 cm. Price $21.50.

Analytical methodology for steroids is important since these compounds are usually found at low concentrations not only in dosage forms but also in biological samples. There is an extensive literature regarding spectrophotometric analysis of steroids, while literature involving fluorometric methods is scant and many of the procedures are nonspecific. The authors of this book have successfully compiled a volume detailing many colorimetric and fluorometric procedures for those natural or synthetic steroids of physiological interest.

The methods reported are quantitative rather than qualitative, and only those based on chemical reactions that yield a color or fluorescence in solution are discussed. Many of the procedures were tested in the authors' laboratory and even modified when an improvement could be made. This testing provided a selection procedure for inclusion in the book, where several methods based on the reaction and reagents were found in the literature.

After general chapters on steroid nomenclature, functional group analysis of steroids, and halochromism and halofluorism reactions, there are specific sections dealing with sterols and vitamin D, bile acids, estrogens, gestogens, androgens, corticosteroids, contraceptive progestogens, cardiac glycosides, steroid saponins and sapogenins, and steroid alkaloids. Included in each chapter are general colorimetric and fluorometric procedures for the particular class of steroid. These are usually followed by specific methodology for the more important compounds in that class.

The book is well written and undoubtedly will be useful to pharmaceutical scientists involved in steroid research. It should be purchased for inclusion in a university science library collection. It is not recommended for use as a pharmacy course textbook since it is a compilation of analytical methodology. Whether or not it is included in a school of pharmacy library will depend upon the research interests of the staff since most undergraduates will not benefit from the volume.

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Progress in Drug Metabolism. Vol. 1. Edited by J. W. BRIDGES and L. F. CHASSEAUD. Wiley, 605 Third Ave., New York, NY 10016, 1976. 286 pp. 15 × 25 cm.

This first volume of a new review series contains five chapters: Newer Developments in the Mass Spectrometry of Drugs and Metabolites by B. J. Millard, Bioactivation and Cytotoxicity by T. A. Connors, The Role of Epoxides in Bioactivation and Carcinogenesis by R. C. Garner, Clinical Aspects of Microsomal Enzyme Induction by J. O. Hunter and L. F.

Chasseaud, and Drug-Serum Protein Interactions and Their Biological Significance by J. W. Bridges and A. G. E. Wilson.

This volume is English in origin and evidently was planned to serve in conjunction with the Chemical Society's series "Foreign Compound Metabolism in Mammals." According to D. V. Parke's foreword, "Progress in Drug Metabolism" will review advances in the general fundamentals of drug metabolism, reactions, phenomena, techniques, *etc.*, while "Foreign Compound Metabolism in Mammals" will deal with the metabolic fate of individual chemicals. Presumably, this philosophy will continue to be observed in future volumes of this series.

Four of these five reviews are on topics that have been extensively and repeatedly reviewed in the past several years (Bioactivation and Cytotoxicity is the exception). Mass spectrometry, epoxidation, enzyme induction, and serum protein binding are all, of course, topics of continuing and intense interest in the area of drug metabolism, but progress is never sufficiently rapid to permit completely original reviews every 2 years or so. Most of the content of these reviews, therefore, has been covered recently. Three of the reviews, as originally written, had 1974 as their last reference dates, although one of these contained 1975 references in a note added in proof. The other two reviews, which have the editors of the volume among their authors, have 1975 references (and one reference to a 1976 paper of the authors in press). This first volume of "Progress in Drug Metabolism" was evidently a long time a-borning.

The reviews are uniformly well written, quite readable, and contain some interesting insights. Those who are relatively unfamiliar with the subject matter would do well to read these reviews in preference to other almost as recent reviews of the same topics. The rest of us could profit by rereading for fresh insight on these subjects. I'm glad I did. Libraries will certainly need to collect this series. Perhaps what's really needed is a series of short monographs which provide an annual drug metabolism-centered update.

The content of the review on plasma protein binding of drugs is especially interesting when it indicates that there is still a dearth of fundamental understanding of this area. Bridges and Wilson find it necessary to correct many of the same misconceptions that Goldstein was correcting in 1949. Perhaps there can't be too many reviews on topics of central importance to drug metabolism and pharmacokinetics.

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Lehrbuch der Pharmazeutischen Chemie, 8th Ed. By HARRY AUTERHOFF and JOACHIM KNABE. Wissenschaftliche Verlagsgesellschaft m.b.H., 7 Stuttgart 1, Postfach 40, W. Germany, 1976. 591 pp. 17 × 25 cm. Price $25.00 (62 DM).

This review was undertaken on the assumption that my colleagues might find it of interest to know what is available to teachers of medicinal chemistry/pharmaceutical chemistry in German-speaking countries.

This book by Auterhoff (who is a professor at Tübingen University) and Knabe is in its eighth edition since 1962 and thus has had ample opportunity for frequent updating. However, despite occasional lapses into modernity, such as a brief discussion of prostaglandins (p. 177) and a mention of cyclic AMP (p. 487), it is basically an old-fashioned textbook.

There are several positive points. The first 99 pages, the so-called inorganic part, is a good review for the student. Beginning with nomenclature and going through the seven groups of the periodic system (each as a chapter), a mini subtext of inorganic pharmaceutical chemistry is presented. This section is not truly inorganic because organometallic drugs are discussed (*e.g.*, bismuth subgallate and tartar emetic), as are organic analytical reagents such as rhodamine B because of its use for the analysis of antimony compounds.

The second part of the book (the remainder) is much more organic than current American texts because it mixes more organic with the medicinal chemistry. Not only syntheses (which are certainly not excessive) but also some refresher material such as nomenclature, ring systems, fundamentals of physical methods (spectroscopy), and organic reactions, including aromatic substitution rules, are given. A little biochemistry is also reviewed, *e.g.*, the stereochemistry of amino and fatty acids and coenzyme A. The division of this section is very reminiscent of the older editions of Olsen's and Gisvold's "Textbook of Organic Medicinal and Pharmaceutical Chemistry" in that it contains chapters on olefins, alcohols, ketones, *etc.*, followed by chapters based on therapeutics. There is a separate chapter on hormones, vitamins, and enzymes and one on ADME, which curiously is at the end of the book rather than with the introductory chapters. There are some references, and the index appears adequate. The American reader will encounter unfamiliar trade names (*e.g.*, Endoxan for cyclophosphamide) and unfamiliar variants of familiar drugs [*e.g.*, flucloxacillin (floxacillin), where fluorine replaces one chlorine in dicloxacillin].

The grave shortcoming of the book, however, is the almost total absence of discussions of drug action mechanisms. A newcomer to the field, say one conversant with organic and some biochemistry, after studying the text, would still not really know what drugs are—in the modern sense. There are occasional brief, almost meaningless statements such as: "polymixin raises the permeability of the cell membrane," or, regarding penicillin, "it is the building of cell wall construction material, murein, which is inhibited," with no further explanation or discussion. Rather than discovering that asparagus contains 1.2 mg of folic acid/100 g, I would have preferred to see a discussion devoted to dihydrofolic acid reductase inhibition mechanisms of antimalarials, methotrexate, or sulfonamide action. In the chapter on sympathomimetics, there is a statement on receptors but no real explanation—not a word on structure–activity relationships. Because of this glaring shortcoming, I feel this book is not suitable for the modern pharmaceutical curriculum.

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Interactions of Drugs of Abuse. Annals of the New York Academy of Sciences, Vol. 281. Edited by ELLIOT S. VESELL and MONIQUE C. BRAUDE. The New York Academy of Sciences, 2 East 63rd St., New York, NY 10021, 1976. 489 pp. 15 × 23 cm.

This book contains the proceedings of the first Conference on Interactions of Drugs of Abuse held in New York, March 9–11, 1976, at the New York Academy of Sciences. This conference was rather timely since there is an ever-increasing polydrug use throughout the United States and the world.

The subject matter of the conference was divided into two parts: (*a*) general information concerning the molecular, cellular, and clinical aspects of drug interaction; and (*b*) the major thrust of the conference, determination of the interaction of specific drugs and drug classes including marijuana, narcotics and narcotic antagonists, CNS depressants, CNS stimulants, and hallucinogens. Although extensive effort was made to define all the potential ramifications of drug interactions, it is quite obvious that only the surface has been scratched. In discussing molecular, cellular, and clinical aspects of drug interaction, one could devote several volumes to describing results of experiments designed to study such interactions. Likewise, specific drug interactions could be the subject of a tremendous amount of research effort. In general, this book is well written and the data are presented in an organized fashion.

This conference has opened up a new area of research which will be explored vigorously in the next several years. Because our society is prone to polydrug use, the importance of drug interaction research becomes paramount not only for drugs of abuse but for all drugs in general.

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Venous Thromboembolism. Prevention and Treatment. Edited by JOHN L. MADDEN and MICHAEL HUME. Appleton-Century-Crofts, 292 Madison Ave., New York, NY 10017, 1976. 240 pp. 15 × 23 cm.