

## Book Reviews

**Cardiovascular Pharmacology. Third Edition.** Edited by Michael J. Antonaccio. Raven, New York. 1990. xvi + 556 pp. 18.5 × 26 cm. ISBN 0-88167-6. \$75.00.

This third edition of *Cardiovascular Pharmacology* contains 12 chapters ranging in length from 28 to 116 pages. The chapters range in topic from specific areas such as calcium antagonists to more diverse areas such as modulation of neuroeffector transmission. The 22 authors of this text reflect a good blend of both academic as well as industrial researchers. A number of new areas covered in this edition include new antihypertensive drugs interacting with the sympathetic nervous system, vascular smooth muscle, and the therapy of hyperlipidemia. The other chapters have been updated and, where necessary, expanded to include more recent information.

This text continues the tradition of a well-written, up to date review of key areas in cardiovascular pharmacology. Whenever possible, the authors interrelate the biochemistry of the treated disease with the physiology and drug treatment. The appropriate use of tables and diagrams assists in understanding the often complex nature of cardiovascular disease. For example, the chapter on platelets, thrombosis, and antithrombotic therapies describes the biochemistry of thrombus formation and the resultant pathologies. Therapies in the treatment of thrombosis are next discussed, including the use of newer drugs such as ticlopidine and low molecular weight heparin. Lastly, strategies that may or may not lead to useful treatment such as interference with platelet adhesion are described.

The chapters are well-written with current publications often cited. The description of new trends in drug therapy are a vital asset to this text. It is interesting to note that unlike traditional pharmacology books that are separated into different therapeutic areas such as hypertension, congestive heart failure, etc., this book is not constrained in that separate chapters are written on "Antihypertensive Drugs Interacting with the Sympathetic Nervous System and Its Receptors", "Vascular Smooth Muscle and Vasodilators", and "Calcium Antagonists". In summary, this book provides a comprehensive and concise reference for all the important areas of cardiovascular pharmacology. Its easy to understand style should make it useful to all workers in this area.

Wyeth-Ayerst Research  
CN 8000

Princeton, New Jersey 08543-8000

Dennis M. Ackerman

**Organic Synthesis Highlights.** By J. Mulzer, H.-J. Altenbach, M. Braun, K. Krohn, and H.-U. Reissig. VCH Publishers, Inc., New York. 1991. xii + 410 pp. 17 × 24.5 cm. ISBN 0-89573-918-6. \$65.00.

This book provides an overview of the rapid progress, trends, and accomplishments in synthetic organic chemistry from 1985 to 1990. It was written by five young authors who are active researchers in different areas of organic chemistry. *Organic Synthesis Highlights* contains 49 articles on almost every aspect of modern organic synthesis. The emphasis in these articles is not so much to completely cover all of the literature, but an essaylike approach that facilitates reading and comprehension. The book is divided into two parts. The first part deals with methods, reagents, and mechanisms. It describes various aspects of stereodifferentiating addition reactions, cyclization reactions, organotransition metals in synthesis, electrochemistry in selective synthesis, biooriented methodology, and synthesis with ex-chiral-pool starting materials. In the second part, applications in total synthesis are described. Major topics addressed are synthesis of classes of natural products, synthesis of individual natural products, and syntheses of nonnatural target compounds.

All chemists concerned with organic synthesis will find this a clearly written, easily readable book. The section on biooriented

methodology describes enzymes in organic synthesis, valuable new applications of enzyme chemistry, and biomimetic natural product syntheses. This section, as well as the ones dealing with natural products, will be of particular interest to many medicinal chemists.

Staff

**Radicals, Ions and Tissue Damage.** Edited by B. Matkovic, L. Karmazsin, and H. Kalász. Akadémiai Kiadó, Budapest. 1990. xi + 324 pp. 17 × 24.5 cm. ISBN 963-05-5879-3. \$39.00.

This book contains the proceedings of the Third Oxygen Radical Conference held in Szeged, Hungary in January 1989. The meeting was dominated by Hungarian scientists from a variety of research laboratories including Medical and Veterinary Universities and Clinics, the Hungarian Academy of Sciences, Industrial Institutes, and other laboratories within the country. The 3-day meeting consisted of a total of 61 presentations of which 41 are published in this book. The theme of the conference was the physiological and pathophysiological aspects of the reactions of oxygen radicals with a discussion on the importance of ions and trace metals as they relate to arthritis and inflammation. The majority of the reports at the conference dealt with the mechanisms, measurement and pathological role of free radicals in lipid peroxidation. Of particular interest were clinical reports correlating circulating levels of lipid peroxidative products to a variety of disease states including aging, respiratory distress syndrome in premature infants, cancer, and celiac disease in children. Of interest to those seeking natural and synthetic, low and high molecular weight antioxidants, several papers dealt with this topic. A number of antioxidants were discussed including vitamin E; BF-100, a synthetic lipopolyamine; vipocetine (Caviton), one of the vince alkaloids; ceruloplasmin, revisited; and an extract from the root of the dinh lang tree (*Policias fruticosum L.*) from Vietnam.

The references cited are up to date but one will occasionally have difficulty in acquiring citations from Hungarian journals. The book also contains a limited but useful subject index. Although the reports in this book do not provide any new breakthroughs in the area of free-radical biology, the book does provide a convenient compilation of free-radical research in Hungary and is therefore recommended for those individuals maintaining a close surveillance on free-radical research throughout the world.

Department of Cardiovascular  
Pharmacology

Sterling Research Group

Sterling Drug, Inc.

Rensselaer, New York 12144

Lawrence de Garavilla

**Inclusion Phenomena and Molecular Recognition.** Edited by Jerry L. Atwood. Plenum Press, New York. 1990. x + 411 pp. 17 × 26 cm. ISBN 0-506-43508-x. \$89.50.

This book is a product of the 5th International Symposium on Inclusion Phenomena and Molecular Recognition, held in September 1988 at Orange Beach, AL. There are 38 presentations included, averaging about 11 pages each. All chapters focus on the principal topics of the symposium.

The book brings under one cover a varied look at a new and extremely important area of chemistry. It is remarkable how many facets of chemistry, physics, and mathematics are drawn into the armamentarium of methods and concepts used in these studies. The book leads the reader to believe that perhaps a new era in chemistry is at hand with inclusion and recognition phenomena being the vehicle.

The chapters are usually self-contained with adequate introductions and methods descriptions. In general, the quality of

writing is high. There are ample structures, figures, and tables to illuminate the ideas expressed.

Chapter references are selected and timely as a rule. The book index is sparse.

Several of the chapters deal directly with biological molecules. The exciting thing about the book, however, lies in the obvious applicability of many of the topics to molecular recognition phenomena important in biological events. Not only does the book bring the reader up to date in this important area but it certainly leaves ideas for future research in the biological arena. Because of this I view it as an important contribution to personal libraries of medicinal chemists interested in intermolecular phenomena.

Department of Medicinal Chemistry  
Virginia Commonwealth University  
Richmond, Virginia 23298

Lemont B. Kier

**Common Fragrance and Flavor Materials. Preparation, Properties and Uses. Second, Revised Edition.** By K. Bauer, D. Garbe, and H. Surburg. VCH Publishers, New York. 1990. xii + 218 pp. 18.7 × 24.6 cm. ISBN 0-89573-919-4. \$75.00.

The stated aim of this book is to present a survey of commercially produced fragrance and flavor chemicals. It is meant to be a source of information on physical properties, methods of production, and areas of application that will be of general interest to anyone involved in the flavor and fragrance industry or anyone just wishing to learn about it. The first edition of this book drew heavily on information which had been compiled in a chapter on flavors and fragrances in the German edition of *Ullmann's Encyclopedia of Industrial Chemistry, Volume 20* and was published in English in order to make that information more widely available. This second edition is meant to include some new developments and to update descriptions of some of the methods used for production. Additional cosmetic changes are the indentation of paragraphs, making the text more readable, inclusion of CAS registry numbers in the text, and changing pressures from mbar to kPa.

Chapter 1 briefly discusses the history of the field and mentions such matters as the physiological importance of flavors and fragrances, odor and structure, volatility, and odor threshold. Natural, nature-identical, and artificial materials are defined, as are many of the descriptive terms used in the industry. In the opinion of this reviewer, this chapter is too short. For example, having stated in the preface that this book is not written for experts in the field, the authors do not elaborate on such issues as why the emphasis has shifted from the isolation of the major components to the identification of trace components found in natural oils and extracts. The definitions given for the terms "nature-identical" and "artificial" pertain to the European market (the authors are German). They would both be called "artificial" in the United States. And a brief discussion of the chemical incompatibilities exhibited by typical fragrance and flavor bases would be helpful. A little expansion of this chapter could provide much useful background to newcomers in the field.

Chapter 2 is the heart of this book. It is a catalog of individual flavor and fragrance chemicals, each generally listed with both its IUPAC and common names. Trade names are also given, if available. The listings are arranged by general classes of compounds, and by functional groups within each class. They are not in alphabetical order, but the excellent subject index and formula index can be consulted for the purpose of finding a specific chemical. The CAS registry number, structure, and pertinent physical data are given for each chemical. Each listing also includes a brief description of the organoleptic properties of the chemical. Many also describe sources from which the compounds are isolated or synthetic routes by which they are made. Unfortunately, typical usage levels are rarely included. There are practically no listings for aliphatic amines and sulfur compounds, and the sulfur and nitrogen heterocycles are given only a cursory examination. But the sections on cyclic and acyclic terpenes and other cycloaliphatic compounds are particularly good. Although many of the literature references predate the mid-1970s, this simply reflects the authors' heavy reliance on patents for infor-

mation. New commercial synthetic processes in the flavor and fragrance industry are usually patented or secret. They are rarely published in chemical journals.

Chapter 3 is a very useful survey of natural raw materials. It describes the more common botanical sources and a few animal sources, and identifies the components of interest. Definitions are also given for some of the common types of extracts. Typical physical properties are provided, where applicable, along with the organoleptic properties.

Chapter 4 is a one-page description of the methods used for quality control of flavor and fragrance compounds. Chapter 5 describes a few of the regulatory issues and provides addresses for some of the organizations involved in setting policy for the industry. These chapters logically could have been merged with chapter 1 as means of expanding the background information.

Other, more comprehensive books on flavor and fragrance materials are available. But this book provides a lot of useful information in one place, and it is an especially good resource for somebody just entering flavor and fragrance industry. Reducing the price somewhat would make it an unqualified value for anyone in the field.

Hercules Incorporated, Fragrance &  
Food Ingredients Group  
Middletown, New York 10940

Michael Karras

**Biotransformations. A Survey of the Biotransformations of Drugs and Chemicals in Animals. Volume 3.** Edited by D. R. Hawkins. The Royal Society of Chemistry, Cambridge, U.K. 1991. xviii + 462 pp. 19 × 25 cm. ISBN 0-85186-177-6. £89.50.

This series encompasses biotransformations of pharmaceuticals, agrochemicals, food additives, and environmental and industrial chemicals in animals. Each volume includes material published during a calendar year. In this third volume biotransformations of various drugs and chemicals published during 1989 are described. Following an overview chapter highlighting new biotransformations, mechanisms of toxicity, and unusual species differences, biotransformations published during 1989 are described in abstract form. The abstracts are arranged according to general chemical classes, e.g. hydrocarbons, acyclic functional compounds, substituted aromatics, heterocycles, amino acids and peptides, steroids, etc. Comprehensive compound and reaction type indexes that cover volumes 1-3 facilitate the location of the many biotransformations that are abstracted.

Clearly, this volume is a valuable source of information relative to drug metabolism and other biotransformations in animals. A major limitation is its restriction to a single year. Thus, to effectively utilize this series access to all volumes is necessary; however, the series will serve as a valuable library resource for all concerned with the metabolic fate of drugs and chemicals.

Staff

**The Chemistry of Heterocyclic Compounds. Volume 49 Part 1. Isoxazoles.** By Paolo Grünanger and Paola Vita-Finzi. Edited by Edward C. Taylor. John Wiley and Sons, New York. 1991. xxi + 877 pp. 16.5 × 24 cm. ISBN 0-471-02233-0. \$225.00.

This volume of the *Chemistry of Heterocyclic Compounds* series provides a much needed update to the previous review (Volume 17, part I) of isoxazoles and related compounds published in 1962. The earlier work, by Adolfo Quilico and Giovanni Speroni, reviewed the literature on isoxazoles to 1958. Since that time there has been a great deal of interest in isoxazoles both as synthetic targets and as intermediates. This new volume is a complete review of the literature from the first reports of isoxazole synthesis and structure determination up to the literature reported in *Chemical Abstracts* through 1984, citing ca. 3300 references in chronological order. This volume is divided into three chapters each devoted to a particular degree of saturation of mononuclear isoxazoles: (1) isoxazoles, (2) isoxazolines (dihydroisoxazoles), (3) isoxazolidines (tetrahydroisoxazoles).

Each chapter thoroughly covers the physicochemical properties, synthesis, and chemical properties and reactivities of their respective class of isoxazoles. Noteworthy was the extensive presentation of physical and spectral data in tabular form: IR, UV,  $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{14}\text{N}$ , and  $^{15}\text{N}$  NMR, MS,  $\text{p}K_a$ 's, dipole moments, bond lengths, etc., which compilation workers in this area will find especially useful (such information was not contained in the earlier review). The synthesis and chemical reactivity sections are equally extensive, containing a wealth of data on virtually every structural modification possible in isoxazole chemistry. There is an appropriate large focus on the regiochemical course of the synthetic methods for isoxazole synthesis. The only thing lacking in the volume is that there is only minimal mention of the pharmacological activity of these compounds. The authors note however, that in part 2 of this volume the pharmacologically important isoxazole derivatives; such as sulfa drugs, modified penicillins, and antibiotics will be discussed.

Overall this volume is an outstanding review and a much needed update on isoxazole chemistry. This series definitely belongs in all institutional libraries. This reviewer highly recommends this volume as a first resource for investigators in this area.

Bristol-Myers Squibb Company      Robert E. Waltermire  
New Brunswick, New Jersey 08903

### The Enzymes. Volume XIX. Mechanisms of Catalysis.

Third Edition. Edited by David S. Sigman and Paul D. Boyer. Academic Press, Inc., San Diego, CA. 1990. ix + 459 pp. 15.5 × 23.5 cm. ISBN 0-12-122719-7. \$99.00.

The most recent volume of the third edition of *The Enzymes*, which presents in-depth coverage of selected topics in enzymology, represents a continuation of this highly regarded treatise. In keeping with the purpose of the series, the seven chapters cover areas of research in which significant progress has been made since publication of the first two volumes over 20 years ago.

The reviews include a diverse set of topics representing important technologies currently used by many enzymologists and biochemists. The titles of the individual chapters are self-descriptive: (1) Binding Energy and Catalysis (D. D. Hackney), (2) Biological Electron Transfer (D. C. Rees and D. Farrelly), (3) Steady-State Kinetics (W. W. Cleland), (4) Analysis of Protein Function by Mutagenesis (K. A. Johnson and S. J. Benkovic), (5) Mechanism-Based (Suicide) Enzyme Inactivation (M. A. Ator and P. R. Ortiz de Montellano), (6) Site-Specific Modification of Enzyme Sites (R. F. Colman), and (7) Stereochemistry of Enzyme-Catalyzed Reactions at Carbon (D. J. Creighton and N. S. R. K. Murthy). Each chapter is well-organized and presented with theoretical concepts adequately illustrated with examples. In addition, the authors have provided comprehensive references throughout, enabling the reader to easily identify background information or to delve further into a subject of interest.

In general, this volume represents an excellent addition to the titled series. Most scientist working with enzymes will benefit from having access to this book; those specializing in the topic areas may prefer a personal copy for easy access to the many useful examples and references.

Department of Medicinal Chemistry      Mark A. Levy  
SmithKline Beecham Pharmaceuticals  
King of Prussia, Pennsylvania 19406-0939

### Supplements to the 2nd Edition of Rodd's Chemistry of Carbon Compounds. Volume IV—Heterocyclic Compounds. Part E. Edited by M. F. Ansell. Elsevier, Amsterdam. 1990. xvi + 640 pp. 15.5 × 23 cm. ISBN 0-444-88611-7. \$266.75.

This book continues the supplementation of the second edition of *Rodd's Chemistry of Carbon Compounds* and updates chapters 20, 21, and 22 of Volume IVE of the second edition. It is divided into two chapters, 20 and 21, and an index. Chapter 20 coverage is Six-membered Ring Compounds with One Hetero Atom: Oxygen (397 pp). This includes updates on the chemistry of pyran and its derivatives; hydroxyprans; benzo[b]pyrans and their derivatives (flavones, isoflavones, coumarins, chromones, antho-

cyanins, and others); chroman, dihydrochromene, 3,4-dihydro-2H-benzo[b]pyran, and derivatives; 1H-benzopyran and its derivatives; isochroman and isochromanones; xanthene and its derivatives; 6H-dibenzo[b,d]pyran, 3,4-benzochromene, and its derivatives; naphthopyrans, benzochromenes, and derivatives; and benzo- and dibenzoxanthene derivatives. Chapter 21 coverage is Six-membered Ring Compounds with One Hetero Atom: Sulphur, Selenium, Tellurium, Silicon, Germanium, and Tin (193 pp). This includes updates on the chemistry of thiopyran derivatives; benzo[b]thiopyrans, 1-benzothiopyrans, benzo[b]thiins, thichromenes, 5,6-benzothiopyrans, and derivatives; 1H-benzo-[c]thiopyran, 1H-2-benzothiopyran, isothiochromene, 3,4-benzothiopyran, and its derivatives; dibenzothiopyran, thioxanthene, and derivatives; bridged ring sulphur compounds and related compounds; selenopyrans and related compounds; telluropyrans and related compounds; and compounds containing an element from group 4. Both of the chapters were written by Professor R. Livingstone (The Polytechnic, Huddersfield), who also wrote the chapters in the second edition. The 50-page index was compiled by Dr. Malcolm Sainsbury (University of Bath).

The references are embedded in the text so the exact number is not known. While the period of coverage is not stated, the earliest reference I could find is from 1976 and the latest from 1986. The book has been produced by direct reproduction of the author's manuscript. The book appears to be free from typographical errors and I only noticed one error in the drawings. The structure given for 5,6,7,8-tetrahydroflavone on p 160 is actually flavone.

The stated objective of the second edition of "Rodd" is not to provide detailed coverage of areas of chemistry, but rather to outline important aspects of the area and to provide leading references where the researcher can find the detailed information. The book has achieved this objective.

Nova Pharmaceutical Corporation      Ronald H. Erickson  
6200 Freeport Centre  
Baltimore, Maryland 21224

### Advances in Second Messenger and Phosphoprotein Research. Volume 23. Edited by Paul Greengard and G. Alan Robison. Raven Press, New York. 1991. xiv + 286 pp. 16 × 24 cm. ISBN 0-88167-687-X. \$105.00.

Volume 23 of this series is comprised of invited reviews by leading authorities on basic aspects and physiological applications of signal-transduction research. The book includes a comprehensive study of protein phosphatases and in-depth analyses of the structure, function, and regulation of two multipotential serine protein kinases, casein kinase I and II. A review of signalling mechanisms in microorganisms reflects the increasingly sophisticated understanding of how cell regulatory mechanisms have evolved in lower organisms. Other contributors present recent findings on transmembrane signal transduction pathways in *Dictyostelium* and examine the regulation of ciliary motility in *Paramecium* by calcium and cyclic nucleotides.

The timely information presented in this volume of *Advances in Second Messenger and Phosphoprotein Research* will be of major interest to pharmacologists, cell biologists, endocrinologists, biochemists, and physiologists. In keeping with other volumes of the series, this book is well-written, thoroughly referenced, and clearly illustrated.

Staff

### Studies of Narcosis. Charles Ernest Overton. Edited by Robert L. Lipnick. Chapman and Hall. Wood-Library-Museum of Anesthesiology, Park Ridge, IL. 1991. xi + 203 pp. 16 × 24 cm. ISBN 0-412-35240-0. \$65.00.

This is an English translation of Overton's classic German monograph on anesthesiology. The original has been widely cited by scientists studying the correlation of biological activity with partition coefficients and the mechanism of anesthesia. Although the original text was published in 1901, it is still of significant value to modern toxicologists, particularly those involved in the development of quantitative structure-toxicity relationships and

the predictive limitations of such models. An introductory chapter by the editor, Robert L. Lipnick, as well as ones by Leonard L. Firestone, Keith W. Miller, and Peter M. Winer emphasize the importance of *Studies of Narcosis* today.

The book has a few references, mainly from the 1800s. Three appendices, namely "Detoxification by means of dialysis", "List of publications of Charles Ernest Overton", and "Publications about Overton and analyses of his data", as well as an adequate subject index, are included.

#### Staff

**Advances in Biochemical Psychopharmacology. Volume 46. GABA and Benzodiazepine Receptor Subtypes: Molecular Biology, Pharmacology, and Clinical Aspects.** Edited by G. Biggio and E. Costa. Raven Press, New York. 1990. xvi + 239 pp. 16.5 × 24 cm. ISBN 0-88167-697-7. \$85.00.

This volume, which comprises 19 chapters including Concluding Remarks by W. Haefely, contains the proceedings of the 6th Capo Boi Conference on Neuroscience held at Villasimius, Italy, in June 1989. It summarizes the structural and functional heterogeneity of the central GABA/benzodiazepine (BZD) ionophore/receptor complex. The very rapid, almost explosive, progress in this field is the result of effective use of molecular cloning techniques and the availability of a broad range of specific ligands for the GABA<sub>A</sub> as well as the BZD recognition sites.

The first chapter illustrates the multidisciplinary character of modern receptor research. Different chromatographic techniques combined with electrophoresis and photoaffinity labeling allowed purification to apparent homogeneity of a ligand binding protein fragment of the peripheral-type BZD receptor. Partial amino acid sequencing enabled cloning of a cDNA encoding this protein, and ligand binding experiments were used to characterize the pharmacology of the receptors expressed in eukaryotic cells.

In the two subsequent chapters Seeburg and Möhler et al. very clearly outline the different aspects of the integrated approaches to studies of receptor structure and function. It is emphasized that key questions regarding subunit composition, multiplicity, plasticity, and precise physiological mechanisms of genuine receptors remain to be answered. Olsen et al. describe the isolation and pharmacological characterization of GABA<sub>A</sub>/BZD receptor subunits. Using a broad spectrum of radioligands these authors demonstrate dissimilar pharmacological properties of different receptor subunits expressed *in vitro* and, in addition, the existence of pharmacologically distinct receptor subtypes in the brain. In agreement with the conclusions by the authors of previous chapters, the exciting therapeutic prospects of these observations are emphasized. The subsequent chapters describe the isolation and pharmacological characterization of putative endogenous BZD receptor ligands and attempts to subdivide GABA/BZD receptors on the basis of pharmacological characteristics of different classes of BZD ligands. The  $\omega$ -classification of BZD receptors proposed by Langer et al. does not seem to be very useful. Concas et al. describe an interesting "ex vivo" binding assay based on radio-labeled TBPS, which binds to the GABA-operated chloride channel, as a biochemical measure for GABA synaptic activity.

Bowery et al. discuss the apparent heterogeneity of the metabotropic GABA<sub>B</sub> receptors. Until recently, baclofen was the only selective ligand for this class of GABA receptor, which, to some extent, explains the difficulties in establishing the degree of multiplicity of these receptors. The neurochemical and pharmacological consequences of chronic administration of different categories of BZD ligands are reviewed in two chapters. There is accumulating evidence to suggest that increased GABAergic neurotransmission is a factor of key importance in the severe disorder hepatic encephalopathy. These aspects and possible effective therapies are summarized by Baraldi et al. and Basile et al.

In the last two chapters Costa and Haefely discuss the consequences of the multiplicity and heterooligomeric structure of receptors for classical receptor concept and terminology. Whereas the latter author argues that traditional agonist, partial agonist, and antagonist terminology is still viable in future pharmacological receptor research, Costa is of the opinion that terms like partial agonism and spare receptors have to be redefined and perhaps

abolished concurrently with the identification of structurally, functionally, and pharmacologically different subtypes of receptors. Furthermore, he suggests a nomenclature system for ligands at receptor modulatory sites, such as the BZD sites, in substitution for the currently used agonist, partial agonist, and inverse agonist terminology.

This debate is relevant to everybody involved in receptor research. In general, this book is of interest for all neuroscientists in the fields of pharmacology, neurochemistry, and medicinal chemistry. The latter group of scientists is faced with the very exciting challenges of designing ligands with specific affinity not only for different receptor subtypes but also for distinct receptor subunits and showing appropriate agonist efficacies at sites of particular therapeutic relevance.

*The Royal Danish School of Pharmacy*  
DK-2100 Copenhagen,  
Denmark  
Povl Krosgaard-Larsen

**Heterocycles in Bio-Organic Chemistry.** Edited by J. Bergman, H. C. Van der Plas, and M. Simonyl. The Royal Society of Chemistry, Cambridge, England. 1991. viii + 239 pp. 16 × 24 cm. ISBN 0-85186-877-0. £42.50.

This volume contains the lectures presented by invited speakers at the 6th FEChem Conference on Heterocycles in Bio-Organic Chemistry, held at Solbacka, Sweden, in May 1990, as well as some updated versions of selected lectures from the 5th Conference at Bechyně, Czechoslovakia, in May 1988.

The book contains 14 papers and a brief subject index. A wide array of topics are covered and, as is often the case with publications of collected papers, not all papers will interest all readers. Some (if not all) of the papers appear to be reproduced directly from the individual author's manuscript and from this point of view the printing and writing style has no consistency. All of the papers contain at least a modest (and in some cases extensive) list of references. The writing is generally good.

The papers present recent information on synthesis, stereochemistry, pharmacological properties, and physical properties of a wide variety of heterocyclic compounds. Included are tetrahydropyrans, indole alkaloids, benzodiazepines, indenopyridines, isoquinoline alkaloids, naphar alkaloids, pyridopyrimidines, and a variety of other systems of biological or medicinal interest.

Obviously not all of the important fields are covered, but the book does give a good coverage of modern work on a number of currently important topics. It should be read by those desiring an overview of some of the important topics being studied in bioorganic chemistry.

*Department of Chemistry*  
*University of Missouri-Kansas City*  
*Kansas City, Missouri 64110*

Frank D. Popp

#### Books of Interest

**Biodegradable Polymers as Drug Delivery Systems. Drugs and the Pharmaceutical Sciences.** Volume 45. Edited by Mark Chasin and Robert Langer. Marcel Dekker, Inc., New York. 1990. viii + 347 pp. 16 × 23.5 cm. ISBN 0-8247-8344-1. \$99.75.

**Thin-Layer Chromatography. Reagents and Detection Methods Physical and Chemical Detection Methods: Fundamentals, Reagents I.** Volume 1a. By Helmut Jork, Werner Funk, Walter Fischer, and Hans Wimmer. VCH Publishers, Inc., New York. 1990. xv + 464 pp. 16 × 21.5 cm. ISBN 0-89573-876-7. \$110.00.

**Countercurrent Chromatography. Apparatus, Theory and Applications.** By Walter D. Conway. VCH Publishers, Inc., New York. 1990. xiv + 475 pp. 16.5 × 24 cm. ISBN 0-89573-331-5. \$75.00.

**Amino Acids and Peptides. Volume 22. A Specialist Periodical Report.** Senior Reporter J. H. Jones. Royal Society of Chemistry, Cambridge, England. 1991. xi + 374 pp. 14.5

× 22.5 cm. ISBN 0-85186-204-7. £92.50.

**Annual Review of Pharmacology and Toxicology. Volume 31.** 1991. Edited by Arthur K. Cho. Annual Reviews Inc., Palo Alto, CA. 1991. vi + 667 pp. 16 × 23 cm. ISBN 0-8243-0431-4. \$40.00.

**Organic Synthesis at High Pressures.** Edited by Kiyoshi Matsumoto and R. Morrin Acheson. John Wiley & Sons, Inc., New York. 1991. x + 456 pp. 16.5 × 24 cm. ISBN 0-471-62761-5. \$75.00.

**Liquid Chromatography in Biomedical Analysis. Journal of Chromatography Library. Volume 50.** Edited by T. Hanai. Elsevier Science Publishers B.V., The Netherlands. 1991. xii + 296 pp. 17 × 24.5 cm. ISBN 0-444-87451-8. \$154.50.

**G Proteins and Calcium Signaling.** Edited by Paul H. Naccache. CRC Press, Inc., Boca Raton, FL. 1990. 160 pp. 18 × 26 cm. ISBN 0-8493-4572-3. \$97.50.

**Lipid Biochemistry. An Introduction. Fourth Edition.** By M. I. Gurr and J. L. Harwood. Chapman & Hall, New York.

1991. vii + 406 pp. 15.5 × 23 cm. ISBN 0-412-26620-2. \$39.95 (pbk).

**Cyclophanes.** By Francois Diederich. Royal Society of Chemistry, Cambridge, England. 1991. xvi + 314 pp. 16.5 × 24 cm. ISBN 0-85186-966-1. £55.00.

**Enzymes in Biomass Conversion. ACS Symposium Series 460.** Edited by Gary F. Leatbam and Michael E. Himmel. American Chemical Society, Washington, DC. 1991. xv + 520 pp. 16 × 23.5 cm. ISBN 0-8412-1995-8. \$99.95.

**Carers, Professionals and Alzheimer's Disease.** Edited by Desmond O'Neill. John Libbey & Company Ltd., London, England. 1991. viii + 327 pp. 17 × 24 cm. ISBN 0-86196-298-2. \$41.00 (pbk).

**Physical Methods of Chemistry. Second Edition. Volume VII Determination of Elastic and Mechanical Properties.** Edited by Bryant W. Rossiter and Roger C. Baetzold. John Wiley & Sons, Inc., New York. 1991. xi + 313 pp. 16.5 × 24 cm. ISBN 0-471-53438-2. \$95.00.