Book Reviews

Platelet Activating Factor Receptor: Signal Mechanisms and Molecular Biology. Edited by Shivendra D. Shukla. CRC Press, Boca Raton, FL. 1993. 184 pp. 18 × 25 cm. ISBN 0-8493-7299-2. $99.95.

The physiologic and pathologic role of platelet activating factor (PAF) and possible clinical uses of its analogs and antagonists have been of keen interest to medicinal chemists and pharmacologists since the elucidation of PAF's structure in 1979. Over the years, there has been a wealth of research on the biology and biochemistry of this unique phospholipid. Although there have been numerous published reports on pharmacologic modulation of PAF binding to its receptor, the nature and identity of the receptor has been elusive, and efforts to isolate and solubilize it have not been very fruitful. Recently, the PAF receptor was cloned, and the molecular architecture of the receptor has begun to be defined. The network of signal transducing molecules coupled to the receptor (G proteins, phospholipase C, phosphoinositides, and protein kinases) is rapidly becoming apparent.

The editor and authors, all internationally known investigators in PAF research, are to be commended on this compact and interesting array of chapters on PAF receptors, transduction mechanisms, and responses in different cells and tissues. The individual chapters are enlightening and give a good perspective on developing issues and findings in this burgeoning field. Particularly informative are the chapters which discuss characterization of PAF receptors using radioligand binding assays, molecular cloning of the receptor, involvement of phosphoinositide hydrolysis and tyrosine kinases in conveying the signal, and induction of early response genes such as c-fos and c-jun. Several authors raise critical issues such as receptor heterogeneity, intracellular PAF receptors, multiple pathways for signal transduction, and involvement of different or multiple G proteins depending on tissue type or response. Most of our knowledge about the PAF receptor is derived from inflammatory cells; despite the known cardiovascular and neuronal effects of PAF, we still do not have a clear understanding of the nature of this receptor in vascular or cardiac smooth muscle or brain tissue.

This book whets the reader's appetite for additional chapters. Although drug effects on signal transduction pathways are mentioned in several chapters, a separate chapter focusing on pharmacologic manipulation of the components of these multiple pathways would be of value. Other chapters on priming and desensitization of the receptor, cross talk between the PAF receptor and other receptors, and differences in receptors and signal transduction mechanisms according to cell or tissue type, or the physiologic and pathologic role of PAF, would add to the merit of this book. Discrete chapters on tools and techniques beyond radioligand binding methods to study the receptor, such as the development and use of monoclonal antibodies to the receptor or PAF itself, or the use of mutant clones to dissect structure activity relationships, would be useful for readers doing benchwork on the molecular biology of PAF and transduction mechanisms.

This book is readable and well indexed. Through apparently strict editing, the chapters are succinct and well referenced. The chapters are, however, uneven in their emphasis on signal transduction and molecular biology. Only a few of the 14 chapters discuss signal transduction and only two specifically address PAF and gene expression, perhaps reflecting the newness of the field. On rare occasions, usage and grammar could have benefited from tighter editing. Some figures are quite useful, while others need larger type to be readable.

Platelet Activating Factor Receptor: Signal Mechanisms and Molecular Biology is an introductory resource for anyone working in, or interested in, the blossoming field of the molecular biology of PAF receptor signal transduction. The reader is offered a perspective on the scope and critical issues of PAF receptor research, and the motivated investigator can find numerous references to follow up. Understanding which molecules are involved in signal transduction will provide new targets for the medicinal chemist to focus on in designing new agents to modulate PAF function.

Constance A. Kohler

Immunology and Oncology Section
Medical Research Division, American Cyanamid Co.
Pearl River, New York 10965

Disulfiram and its Metabolite, Diethyldithiocarbamate. By Peter K. Gessner and Teresa Gessner. Chapman and Hall, 2-6 Boundary Row, London SE1 8HN. 1992. xix + 452 pp, 16 × 24 cm. ISBN 0-410-36010-1. $120.00.

This is a scholarly treatise on the biochemistry and pharmacology of an old but still emerging drug known as disulfiram (DSSD) and its principal metabolic reduction product, diethyl dithiocarbamate (DSH). The publication of this book at this time by these authors is remarkable for several reasons. The first is that the alcoholism *treatment* community of clinicians in the medical and behavioral sciences, as opposed to biomedical scientists engaged in basic research on alcoholism, no longer consider deterrent therapy with drugs a viable option for the treatment of alcoholism because of a perception of limited successes in the past. The second is that the authors, a husband and wife team, are known for their work on chloral and paraldehyde metabolism and xenobiotic conjugation reactions, but have not themselves made extensive scientific contributions in the disulfiram area. Indeed, only five papers to their own work are cited in the bibliography, which also serves as a citation index listing the page numbers (and therefore the number of citations) where a particular paper has been referenced in the book. However, this first comprehensive review on DSSD and DSH, which will likely serve as the ultimate reference source for some time to come, more than compensates for the authors' modest contributions to the primary disulfiram literature. Thirdly, in this era where technical specialty books are often compilations of individual chapters written by selected experts in a given field, the degree of scholarship exhibited in writing this book (there are 58 pages of

0022-2623/93/1836-2424$04.00/0

references alone with a total of 1107 references by actual count!) is truly admirable.

After perusal of the Preface and the introductory chapter, the reader should immediately skip to the last chapter (inappropriately designated as "Appendix") where Professor Eric Jacobsen, one of the codiscoverers of disulfiram (Antabuse) with assistant Jens Hald, gives us a first-hand account of how this drug's human pharmacology was initially discovered—*by taking the drug themselves*! It turned out that they could not enjoy their lunch with the traditional beer or wine without experiencing an adverse reaction to the ingested spirits, an account reminiscent of the hallucinogenic experience with LSD by the Swiss chemist A. Hofmann.

The subtitle of this book summarizes its contents, viz., "Pharmacology and status in the treatment of alcoholism, HIV infections, AIDS (sic) and heavy metal toxicity" by DSSD and/or DSH. Accordingly, Chapter 7 discusses the value of DSH for the treatment of heavy metal toxicities elicited by such metals as Tl, Zn, Cd, Pb, Ni, Cu, Hg, and Pt; while evidence is presented in Chapters 14 and 15 that DSH offers chemoprotection to normal cells against Pt antitumor agents and radioprotection against the necrotizing effects of therapeutic radiation. In Chapters 12 and 13, the immunomodulating and immunostimulant properties of DSH are evaluated with focus on the effects on HIV infections. The remaining chapters offer biochemical/pharmacological rationale for the use of DSSD in alcoholism treatment and insights on the therapeutic outcomes of such disulfiram therapy. The authors not only show a credible grasp of the chemistry and biochemical pharmacology of DSSD and DSH, but also display considerable knowledge of the diverse controversies surrounding the clinical efficacy of DSSD.

In reviewing the extensive metabolic pathways for DSSD and DSH (Chapters 5 and 9 and the scheme on p 34), I was initially disappointed in not seeing any description of the ultimate metabolite of DSSD recently discovered by Hart and Faiman, which is the putative *in vivo* inhibitor of the low K_m mitochondrial aldehyde dehydrogenase and which requires four different metabolic steps for its biotransformation from DSSD. However, I was gratified to see a "Note Added in Press" on p 42 describing this work in detail, a reflection of the thoroughness on the part of the authors in keeping the book up to date. With the existence of genetic polymorphism in the drug metabolizing enzymes now firmly established, it is little wonder that DSSD is reported to elicit such a wide array of pharmacological responses in humans.

It is hoped that clinicians and behavioral scientists alike read this book for their own education and also to appreciate the advances made in the biochemical pharmacology of DSSD and DSH. This book should capture the interest of medicinal chemists and pharmacologists who are engaged in research in cancer, immunomodulation, HIV, and heavy metal toxicity. Selected chapters are "must" reading for biomedical scientists pursuing alcoholism research.

Herbert T. Nagasawa
Department of Medicinal Chemistry
University of Minnesota, and
VA Medical Center
Minneapolis, Minnesota 55455

The Pill, Pygmy Chimps, and Degas' Horse. The Autobiography of Carl Djerassi. Basic Books, A Division of Harper Collins, Publishers, New York. 1992. viii + 319 pp. 16 × 23.5 cm. ISBN 0-465-05759-4. $25.00.

He has published 1100 papers in organic and medicinal chemistry, in the fields of steroids of every description, and has elucidated the structures of numerous complex natural products, chemicals from cacti, Mexican yams, marine organisms, and insects. He has authored the leading books on the application of optical rotatory dispersion and mass spectroscopy to organic chemistry and has amassed almost every possible award and honor for his incredible scientific achievements. He has revolutionized the teaching of undergraduate and graduate chemistry courses at Stanford University where, at 70 years of age, he is one of the most revered professors. Late in his career he shifted from organic chemistry to ecology, reorienting the control of damaging insects and other pests. And he invented, developed, and led the production of the contraceptive pill which initiated population control and the sexual revolution of women all over the globe.

As if it had not been enough to pile several high-powered scientific careers into one life time, Carl Djerassi founded, directed, and headed several corporations; he came in on the ground floor of Syntex, which has taken its place among the great pharmaceutical research companies. Throughout all these activities, he has remained a multifaceted though sometimes controversial renaissance man who collects art, designs his homes, writes, lectures, travels, and speaks with authority on many subjects that have shaped our civilization.

Born in Vienna, Austria, he fled from the Nazis as a boy to his Bulgarian father in Sofia, and from there via England to the United States. He skipped years in college and graduate school, received his PhD degree in record time from the University of Wisconsin, and after a short stay at Ciba where he synthesized tripelennamine, he joined a budding group of steroid chemists in Mexico, soon becoming their leader. From Mexico where he invented the Pill, he returned to Academia but never abandoned his industrial activities. His domestic life suffered from his unending 16-h working day, seven days a week. He tells us of sickness and personal tragedy in this exciting book.

The fluent text explains to the chemist, physician, and lay-person the intricate interconnection of steroid hormones, their organic chemistry, synthesis, and biomedical mode of action.

This is a book that once one has begun to read it, one cannot put down. It belongs on the bookshelf of every educated person who wants to learn about the methods of biomedical research and its effects on such societal problems as birth control, abortion policies, ecology, and other areas that have been affected by chemical advances.

0022-2623/93/1836-2425$04.00/0

For the scientific readers the shining example of an admired man will renew their rededication to the motives that made them embark on a career in science: unending curiosity and means to satisfy this fundamental human drive.

Alfred Burger
Department of Chemistry
University of Virginia
Charlottesville, Virginia 22901

Molecular Biology and Atherosclerosis. Edited by M. J. Halpern. John Libbey & Co., London. 1992. xv + 662 pp. 17 × 24.5 cm. ISBN 0-86196-354-7. £45.00.

This book represents edited proceedings of the 57th European Atherosclerosis Society Meeting held in Lisbon, Portugal, May 22–25, 1991. The book is organized into 12 chapters, each representing a major theme at the conference, covering a total of 150 separate papers. Chapter titles and number of papers per chapter (in parentheses) are as follows: Molecular Biology (25), Genetics (5), Nutrition and Atherosclerosis (19), Obesity and Diabetes (8), Physical Activity Factors (4), Regression, Epidemiology and Risk Factors (16), Clinics (10), Clinical Chemistry (9), LP(a) and Atherosclerosis (9), Pediatic Aspects of Atherosclerosis (7), Ions and Atherosclerosis (11), and Therapeutics (27).

The emphasis of this book and the conference was on the molecular biology of atherosclerosis. For example, in the chapter on molecular biology the topics included a discussion of the progression of atherosclerosis, the molecular mechanisms of probucol, the effects of LDL on nucleotide levels in blood and endothelial cells, and a number of other papers focusing on the molecular biological aspects of atherosclerosis. The majority of papers in this book focused on the role of fats, lipids, and cholesterol in the initiation and maturation of the atherosclerotic lesion. Despite the vast amount of research in this area, the stimulant responsible for the acute progression of the fatty streak and mature plaque into a highly thrombogenic lesion remains to be determined. Interestingly, in the chapter titled "Immunological markers of atherosclerotic disease in circulating blood" the author demonstrated that IgA, C3, and C4 levels were increased in the plasma of patients with peripheral atherosclerosis. Crystalline cholesterol, which is present in advanced atherosclerotic plaques and is highly immunogenic, may be a causal factor in the acute progression of an atherosclerotic lesion. Other useful topics covered in the book include the application of molecular biological techniques to atherosclerosis research and methods of quantification of lipids.

Since the conference was held in 1991, the majority of the most recent references were from 1991. The average number of references per paper is about 10, with a range of as few as 3 to as many as 50. The book contains an index of authors. It lacks a subject index which is more than compensated for by the detailed table of contents. This book is a reflection of the atherosclerosis research primarily conducted in European laboratories, but does include research from Canadian and Russian laboratories. For those investigators focusing on atherosclerosis, this book is recommended as an addition to one's institutional or departmental library.

Lawrence de Garavilla
Department of Vascular and Biochemical Pharmacology
Sterling Winthrop Pharmaceutical Research Division
Sterling Drug, Inc.
81 Columbia Turnpike
Rensselear, New York 12144

Marijuana/Cannabinoids Neurobiology and Neurophysiology. CRC Series in Physiology of Drug Abuse. Edited by Laura L. Murphy and Andrezej Bartke; series edited by Ronald R. Watson. CRC Press, Inc., Boca Raton, FL. 1992. 591 pp. 16 × 24 cm. ISBN 0-8493-7931-8. $139.95.

This volume is composed of 14 chapters covering the latest advances in the field of cannabinoid research. As indicated in the Preface, the number of advances that have taken place in this research field makes this effort a timely one. As testament to this statement, since the publication of this volume a putative endogenous cannabinoid (designated anandamide) has been described. Nevertheless, this review volume is a worthy addition to its research field and is generally very current as indicated by the presence of 1990 and 1991 references, with occasional 1992 references in areas where recent work has been published.

The initial chapter by Mechoulam and collaborators does a good job in providing a simple overview linking chemical structure to *in vivo* and *in vitro* activity and includes references from 1992. A more thorough job of describing the cannabinoid receptor *per se* and its involvement in altering the cAMP second messenger system is provided by Howlett and collaborators. The interactions of cannabinoids with other biological systems (prostaglandins, glucocorticoids, and two chapters related to various endogenous transmitter systems) are covered in subsequent portions of the text, with the review by Pertwee being particularly well done. Other chapters include the effects of cannabinoids on dopamine neuronal development, the role of dopamine in the reward system as related to abuse, on cerebral blood flow, as well as effects upon pregnancy, puberty, and neuroendocrine function. The remaining chapters cover topics including the rat discriminative stimulus model of cannabinoid activity, the effects on human performance, and the therapeutic potential of cannabinoids in neurological disorders (also a nicely done chapter by Consroe and collaborator which includes references from the late 1800s, a nice rarity, to 1991). The remaining chapter by Slikker and collaborators is one of the few (along with Howlett's and Chait's) which introduces significant amounts of new data, and this portion of the text concerns the effects of chronic cannabinoid exposure on behavioral, neurochemical, and

0022-2623/93/1836-2426$04.00/0

histological results on nonhuman primates. This volume will prove to be a most useful resource.

David R. Compton
Department of Pharmacology and Toxicology
Medical College of Virginia
Virginia Commonwealth University
Richmond, Virginia 23298-0613

Molecular Structure and Biological Activity of Steroids. Edited by Martin Bohl and William L. Duax. CRC Press, Inc., Boca Raton, FL. 1992. 471 pp. 15.5 × 24 cm. ISBN 0-8493-6955-x. $169.95.

This volume contains 12 chapters dealing with various aspects of the relationship of the chemical constitution of steroids to their biological activity. Some of the discussions are very good, including those written by the two editors, other are less successful, and some important topics are altogether absent. Chapter 1, by W. L. Duax, is a concise and authoritative treatment of SAR in steroids as revealed by their X-ray crystal structure. Chapter 3, by M. Bohl is an excellent review of the steroid QSAR literature. An ambitious attempt (Chapter 4) to rationalize steroid structure activity relationships in terms of the details of their binding to the as yet uncrystallized steroid receptors is perhaps too complex to be of immediate help in drug design and is marred by questionable thermodynamic statements (e.g. "Van der Waals interactions act over longer distances than H-bonds").

Only four chapters are focused on the SAR of specific classes of steroid hormones. In Chapter 5, K. S. Korach ably considers the structural requirements for estrogen receptor binding and hormone responsiveness, in one of the few discussions in the book that takes the activity of bioactive metabolites into account. A similar treatment is given for glucocorticoids in Chapter 7. The classical SAR evaluation of vitamin D derivatives is undertaken in Chapter 8, whereas the review of androgens (Chapter 10) is more of a QSAR analysis.

A diverse group of topics comprises the subject matter of the remaining chapters. An excellent discussion of cardiotonic steroids is undertaken by R. E. Thomas in a chapter which contains the highlights of his comprehensive 1990 review in *Advances in Drug Research*. Of less general interest are the chapters on brassinosteroids and steroidal neuromuscular blocking agents. The methods of NMR analysis of steroid structures and conformations are well described in Chapter 2, but without regard to biological activities. The strangest inclusion is Chapter 6, a reprint of a 1990 *J. Med. Chem.* review article on aromatase inhibitors. One wonders what the criteria are for reprinting a review article in a book, rather than simply citing it. By contrast to the redundance of information on aromatase inhibitors, there is no chapter dealing with 5-α reductase antagonists or other steroid biosynthesis blockers, even though finasteride and other such compounds are in clinical use.

This book has an adequate index, and in most chapters the titles of cited references are given, making it easier to judge their content. It contains some excellent discussions that will be useful to workers in specific areas, but its expense and lack of focus make it more appropriate for acquisition by large regional libraries than by small institutions and individuals.

Manfred E. Wolff
ImmunoPharmaceutics, Inc.
11011 Via Frontera
San Diego, California 92127

Trends in Medicinal Chemistry '90. Edited by Shalom Sarel, Raphael Mechoulam, and Israel Agranat. Blackwell Scientific Publications, Oxford, Great Britain. 1992. x + 429 pp. 19 × 27.5 cm. ISBN 0-632-03364-9. $119.95.

This book was prompted by the International Union of Pure and Applied Chemistry in association with the European Federation for Medicinal Chemistry, to serve as proceedings of the XIth International Symposium on Medicinal Chemistry, held in Jerusalem, Israel, 2–7 September, 1990. As a collection of long abstracts for the plenary and main lectures that were delivered during the symposium, the book's 54 articles in 12 sections fully achieve this purpose. However, it is unfortunate that it has taken so long to produce this work since many of these articles, written and delivered as cutting-edge technology, are now either historical for the expert or background for the newcomer. Furthermore, while direct-printing of the manuscripts hasn't helped the timeliness of the book, it has perpetuated numerous editorial-type errors that might have, otherwise, been eliminated. Nevertheless, the overall quality of this book is quite good and it does contain several bright spots, as well as being filled with historical glimpses of a wide range of medicinal chemistry and therapeutic topics. For example, the intensive medicinal chemistry research in the CNS arena, which focused on the NMDA receptor, is highlighted as a significant endeavor of the mid to late 1980s by a total of seven articles on this topic. I also enjoyed one of the authors' warnings about both molecular modeling and intuitive thinking during the process of drug design. Plenary lecture topics include histaminergic drugs, hydroxylation of vitamin D_3, NMDA drugs, tyrphostins, drug targeting, and mycotoxins. Main lectures, which emphasized new aspects of drug development in each case, are divided into the following sections: rational drug design; CNS; adenylate cyclase and inositol triphosphate-diacylglycerol systems; eicosanoids; bradykinin and platelet activating factor; cardiovascular; bone formation and metabolism; infectious diseases and cancer; Chinese medicinal plants; drug delivery systems, biotransformations, and pharmacodynamics; and transmembrane transport. A final, special topics section includes articles on drug chirality, satietins, and retinoids for the treatment of disorders of epidermal differentiation. Certainly, in the end, the editors' desire to have this book represent " . . a modest contribution towards promoting medicinal chemistry to the level of the science of drugs, incorporating chemical thought into pharmacological events [such that] chemistry . . becomes

0022-2623/93/1836-2427$04.00/0

a most powerful ally of medicine," is, indeed, accomplished rather well through this recording of these proceedings.

Paul W. Erhardt

Berlex Laboratories
300 Fairfield Road
Wayne, NJ 07927-7358

Advances in Drug Research. Volume 23. Editor, Bernard Testa. Academic Press, Inc., San Diego, CA. 1992. x + 233 pp. 15 × 23 cm. ISBN 0-12-013323-7. $86.00.

The editor states in his invariably witty and incisive preface (a pleasurable and fondly anticipated part of every volume of the series) that the present offering focuses on two main themes: the brain as a drug target, and medicinal peptides. Accordingly, chapters include Brain Uptake of Drugs: The Influence of Chemical and Biological Factors by R. D. Borchardt and colleagues; Monoamine Oxidase: From Physiology and Pathophysiology to the Design and Clinical Application of Reversible Inhibitors by M. S. Benedetti and P. Dostert; Evaluation of the Stability of Peptides and Pseudopeptides as a Tool in Peptide Drug Design by J.-L. Fauchère and C. Thurieu; and The Design and Biological Profile of ACE Inhibitors by G. Lawton, P. M. Paciorek, and J. F. Waterfall.

This reviewer found the volume to be outstanding. All topics are of high contemporary interest. The chapters are well-written, and literature references are comprehensive and current. Proofreading is excellent, and chemical structures are well-drawn and -reproduced. The subjects of the first two chapters should be of almost universal interest to medicinal chemists. Special note is made of the monograph on the blood–brain barrier (Brain Uptake of Drugs). Many medicinal chemists (including this reviewer) glibly invoke the mysteries of the blood–brain barrier with little genuine understanding of the complex and subtle nature of this physiological phenomenon. The present excellent review of the topic provides anatomic, physiological, and biochemical bases for improved understanding of the blood–brain barrier. The discussion (written by chemists) is comprehensible to the chemist; it provides "state of the art" information and much additional material for contemplation as to utility and application to future drug design.

Similarly, the chapter on monoamine oxidase outlines contemporary knowledge of this complex and difficult-to-understand metabolizing enzyme whose biochemical role(s) impinge upon a remarkably large number and variety of therapeutic categories and pathological conditions.

The final two chapters, which are aimed at a more selected readership, are equally well-done. With increased contemporary emphasis on peptide and protein therapeutic agents, the review of peptide stability assumes great import in drug design. The chapter on ACE inhibitors provides a broadly based update on this important area.

This splendid volume is highly recommended for chemists and other drug researchers.

Joseph G. Cannon

Division of Medicinal and Natural Products Chemistry
College of Pharmacy
The University of Iowa
Iowa City, Iowa 52242

Advances in Drug Research. Volume 22. Editor, Bernard Testa. Academic Press, Inc., San Diego, CA. 1992. x + 205 pp. 15 × 23 cm. ISBN 0-12-013322-9. $69.95.

Following Professor Testa's amusing and enjoyable Preface, chapters include Atom Description in QSAR Models: Development and Use of an Atom Level Index by L. B. Kier and L. H. Hall; Pharmacokinetics of Peptides and Proteins: Opportunities and Challenges by C. McMartin; Towards Genomic Pharmacology: From Membranal to Nuclear Receptors by P. M. Laduron; and Medicinal Chemistry of Steroids: Recent Developments by F. J. Zeelen.

In the first chapter, Kier and Hall outline a recently proposed *de novo* approach to QSAR-based drug design which may provide intellectual stimulus for those in the field. McMartin's chapter on pharmacokinetics of proteins and peptides provides an amazing amount of information having applicability to many aspects of medicinal chemistry and which should be of interest and value to all protein/peptide drug researchers. The chapter on "genomic pharmacology" by P. M. Laduron introduces what is for many medicinal chemists an unfamiliar topic: *nuclear* drug receptors. The author has communicated a sense of excitement and of the great potential therapeutic significance of these poorly understood and somewhat neglected receptors. F. J. Zeelen's highly readable discussion of recent developments in medicinal chemistry of steroids is likely to be of interest to a broad medicinal chemistry constituency, not only to steroid chemists.

Chapters are well-written and proofreading has been carefully done. Literature references are up-to-date and are comprehensive. Chemical structures are carefully drawn, and this reviewer noted no errors. This volume, like its predecessors, is a success and is recommended for use by chemists, pharmacologists, pharmaceutics researchers, and others in drug research.

Joseph G. Cannon

Division of Medicinal and Natural Products Chemistry
College of Pharmacy
The University of Iowa
Iowa City, Iowa 52242

Books of Interest

Photoprocesses in Transition Metal Complexes, Biosystems, and Other Molecules. Experiment and Theory. Series C. Mathematical and Physical Sciences. Volume 376. Edited by Elise Kochanski. Kluwer Academic Publishers Group, The Netherlands. 1992. x + 449 pp. 16.5 × 24 cm. ISBN 0-7923-1936-2. $177.00.

0022-2623/93/1836-2428$04.00/0

Organic Syntheses. Collective Volume 8. A Revised Edition of Annual Volumes 65–69. Editor-in-Chief Jeremiah P. Freeman. John Wiley & Sons, Inc., New York. 1993. xvii + 696 pp. 15.5 × 23 cm. ISBN 0-471-58565-3. $59.95.

Second Supplement to the 2nd Edition of Rodd's Chemistry of Carbon Compounds. Volume I. Aliphatic Compounds. Part C. Edited by M. Sainsbury. Elsevier Science Publishers B.V., Amsterdam. 1992. xiv + 387 pp. 15.5 × 22.5 cm. ISBN 0-444-89758-5. $228.00.

Second Supplement to the 2nd Edition of Rodd's Chemistry of Carbon Compounds. Volume II. A&B (Partial) Alicyclic Compounds. M. Sainsbury. Elsevier Science Publishers B.V., Amsterdam. 1992. xviii + 522 pp. 15.5 × 22.5 cm. ISBN 0-444-89844-1. $322.00.

Chemistry Concepts and Models. By W. Robinson, J. Odom, and H. Holtzclaw. D.C. Health & Company, Lexington, MA. 1992. xxi + 753 pp. 21 × 26 cm. ISBN 0-669-32800-6. $36.00.

Chemical Principles. By Steven Zumdahl. D.C. Health & Company, Lexington, MA. 1992. xix + 993 pp. 21 × 26 cm. ISBN 0-669-27871-8. $49.00.

Glossary of Biotechnology Terms. By Manfred H. Fleschar and Kimball R. Nill. Technomic Publishing Company, Inc., Lancaster, PA. 1993. vi + 153 pp. 15.5 × 23 cm. ISBN 0-87762-991-9. $49.00.

Surfactants in Lipid Chemistry: Recent Synthetic, Physical, and Biodegradative Studies. Edited by J. H. P. Tyman. Royal Society of Chemistry, Cambridge, U.K. 1992. x + 182 pp. 16 × 23.5 cm. ISBN 0-85186-395-7. £39.50.

Methods in Carbohydrate Chemistry. Volume IX. Edited by James N. BeMiller and Roy L. Whistler. John Wiley & Sons, Inc., New York. 1993. xi + 197 pp. 15.5 × 23 cm. ISBN 0-471-52941-9 (v.9). $55.95.

Secondary Metabolites: Their Function and Evolution. Ciba Foundation Symposium 171. Edited by Derek J. Chadwick and Julie Whelan. John Wiley & Sons, Inc., New York. 1992. ix + 318 pp. 15.5 × 23 cm. ISBN 0-471-93447-X. $75.00.

Polymeric Delivery Systems. Properties and Applications. ACS Symposium Series 520. Edited by M. El-Nokaly, D. Piatt and B. Charpentier. American Chemical Society, Washington, D.C. 1993. xii + 411 pp. 15.5 × 23 cm. ISBN 0-8412-2624-5. $99.95.

Immunopharmacology in Autoimmune Diseases and Transplantation. Edited by Hans Rugstad, Liv Endresen and Oystein Forre. Plenum Publishing Corporation, New York. 1992. xxv + 420 pp. 16.5 × 25 cm. ISBN 0-306-43994-8. $95.00.

Biocatalyst Design for Stability and Specificity. ACS Symposium Series 516. Edited by Michael Himmel and George Georgiou. American Chemical Society, Washington, D.C. 1993. xiii + 335 pp. 15.5 × 23 cm. ISBN 0-8412-2518-4. $89.95.

Carbohydrate Antigens. ACS Symposium Series 519. Edited by Per J. Garegg and Alf A. Lindberg. American Chemical Society, Washington, D.C. 1993. xii + 184 pp. 15.5 × 23 cm. ISBN 0-8412-2531-1. $49.95.

Second Supplements to the 2nd Edition of Rodd's Chemistry of Carbon Compounds. Volume I. Aliphatic Compounds. Part E, Part F and Part G. Edited by M. Sainbury. Elsevier Science Publishers B.V., The Netherlands. 1993. xvi + 550 pp. 15.5 × 22.5 cm. ISBN 0-444-89873-5. $306.25.

0022-2623/93/1836-2429$04.00/0