Book Reviews

International Review of Neurobiology. Volume 30. Edited by J. R. Smythies and Ronald J. Bradley. Academic Press, San Diego. 1988. vi + 363 pp. 16 × 23 cm. ISBN 0-12-366830-1. $75.00.

The present volume contains six reviews, current up until 1987. The topics included are biochemistry of the nicotinic acetylcholine receptor (Schmidt); the neurochemistry of *N*-acetylaspartyl glutamate (Blakely and Coyle); neuropeptide processing in human CSF (Terenius and Nyberg); targeting drugs and toxins to the brain (Simpson); neuron–glia interactions (Vernadakis); and cerebral activity and behavior (Vanderwolf). The reviews vary in length between 20 and 115 pages and are consequently inconsistent in depth of coverage. The highly important topic, at least as manifested by the founding of research boutiques such as Cephalon, Athena, and Alkermes, of drug delivery to the brain is given short shrift in 24 pages while the chapter on neuropeptide processing at 20 pages is somewhat brief.

This series invites inevitable comparison with the *Annual Reviews* series in Neuroscience and Pharmacology and Toxicology. As such, it pales by comparison in terms of the degree of topicality in subject matter and the level of consistency that the *Annual Reviews* offer at less than half the price. This volume is accordingly more appropriate for library browsing than personal acquisition.

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Dictionary of Alkaloids. Compiled by I. W. Southon and J. Buckingham. Chapman and Hall, New York. 1989, 2 Volume Set: Volume 1, 1161 pp. Volume 2, 620 pp. 21.5 × 28.5 cm. ISBN 0-412-24910-3. U.S. $1295.00. Canada $1554.

Alkaloids have played a crucial part in the development of organic and medicinal chemistry. About 10 000 are now known and their isolation, synthesis, and pharmacological properties continue to occupy a central role in science. Of particular significance in recent years has been the use of alkaloids and related semisynthetic compounds in cancer chemotherapy.

This Dictionary is designed as the essential and definitive source of factual information on all known alkaloids. First it documents every alkaloid known up to the end of 1987 and represents its structure, physical properties, and a brief description of its pharmacology. Secondly it presents an extensive bibliography enabling the rapid location of fuller information on each alkaloid. Thirdly comprehensive and reliable indexing allows immediate access to these contents by means of Name, Molecular Formula, CAS Registry Number, Type of Alkaloid, and biological species through the newly developed Species Index.

The presentation of data is uniform with the established Dictionary of Organic Compounds, Fifth Edition, and of particular interest are the clear structure diagrams bringing together the three-dimensional structures of all known alkaloids within one publication. The organization of the Dictionary, with many alkaloids incorporated as derivatives of closely related major alkaloids is such that family relationships between different alkaloids are clearly shown, making an overview of the whole field readily possible.

The Dictionary contains the following indexes:

Name Index. Alphabetical listing of all names given throughout the Dictionary, whether these are entry names or synonyms and including names referring to derivatives.

Molecular Formula Index. A listing, in Hill Convention order, of all molecular formulae of entries and of all alkaloids shown as derivatives.

Chemical Abstracts service Registry Number Index. All CAS Registry Numbers given in the Dictionary, listed in numerical order.

Type of Compound Index. A listing of all alkaloids described throughout the Dictionary, classified under one or more of over 250 alkaloid type headings (e.g. simple pyrrolidine alkaloids; lycopodium alkaloids) and thus allowing the rapid location of all alkaloids of a particular type.

Species Index. Alphabetical listing of all species names (approximately 20 000 citations in all) given in the Dictionary, with reference back to the isolated alkaloids. This extremely valuable feature considerably increases the utility of the Dictionary since it allows approach to the data from the biological as well as the chemical direction.

An error in the structure of Ryanodine (R-00124) which has the stereochemistry at carbon 2 reversed should be noted. Nevertheless, the editors and their advisors, Professors Cordell, Saxton, and Shamma, are to be congratulated for bringing together in this two-volume set such a monumental set of factual information. Just as the other series published in this set, the *Dictionary of Alkaloids* will become an essential part of any self-respecting chemical library.

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Natural Products Chemistry III. Edited by Atta-ur-Rahman and Philip W. LeQuesne. Springer-Verlag New York, Inc., New York. 1988. vi + 374 pp. 17 × 24.5 cm. ISBN 0-387-50227-0. $101.50.

This volume emanates from the proceedings of the Third International Symposium and Pakistan–U.S. Binational Workshop on Natural Product Chemistry, which was held in Karachi, Pakistan, during the period of January 9–14, 1988. The proceedings of the first two meetings were published in 1984 and 1986. Contributions in this third volume are presented in 22 chapters that are authored by a total of 92 individuals (including the editors). Affiliations are listed from the Federal Republic of Germany, Hungary, Japan, the Netherlands, New Zealand, Pakistan, Scotland, Spain, Sweden, and the United States.

In essence, the chapters present concise reviews of some recent experimental work conducted in the laboratories of the respective authors. The areas described include contemporary methods of nuclear magnetic resonance as applied to biosynthetic and structural aspects of natural products (three chapters), applications of circular dichroism in natural products chemistry (one chapter), synthesis of and synthetic strategies for the synthesis of natural products [eight chapters covering a variety of alkaloids (e.g., carbazole, indole, isoquinoline, tropane, etc.), highly oxygenated substances containing several chiral centers (e.g., hervimycin A, macbecin, streptovaricin A, etc.), and other naturally occurring substances (e.g., peptides, oligonucleotides, etc.)], secondary metabolism in plant tissue culture (two chapters), deuteriated cholesterol for use in studying cholesterol oxidation products (one chapter), naturally occurring antitumor agents, peptide sideophores, and vanadium-binding compounds (one chapter each), methods of establishing stereochemistry through synthetic correlation (one chapter), and recent natural product discoveries made by Pakistani scientists (three chapters). These latter three chapters have been truncated, apparently to limit the length of the volume.

The authors of many of these chapters are recognized leaders of their respective fields. Thus, although most of the information that is presented has been previously published in various sources, the chapters do serve to summarize accomplishments spanning relatively long periods of time. They also effectively exemplify the power of contemporary techniques in natural products chemistry and provide a broad perspective of the importance of natural products in medicine and molecular biology. Chapters of particular interest are those that present a specific question and then describe the methods brought to bear for provision of

the answer (nicely exemplified by those of Cordell et al. and Bayer). The largest number of chapters deal with synthetic approaches, and most of these provide a good review of the biological potential of the target molecules, in addition to some superb organic chemistry. The animated literary style adapted in the chapter by Fraser-Reid et al. is particularly worthy of mention.

It may be noted that the volume is somewhat under-edited. The now common technique of directly reproducing the manuscript as supplied by the authors was employed in generating the book. Approximately 10 numbered pages are blank, some of the figures and schemes did not reproduce very well, inter-chapter variation in format is greater than would be desired, and some of the chapters provided by individuals whose first language is not English could have been improved with some editorial modifications. Nontheless, these aspects do not significantly distract from the intellectual contributions provided by this volume, which should be of value to individuals interested in the synthesis, isolation, and characterization of natural products, as well as phytochemical and biological aspects. If equally competent scientists attend future symposia at Karachi and contribute to the proceedings, these volumes should be welcome additions to this valuable series.

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The Serotonin Receptors. Edited by Elaine Sanders-Bush. Humana, Clifton, New Jersey. 1989. xvi + 388 pp. 16 × 24 cm. ISBN 0-89603-142-X. $69.50.

The casual observer may think serotonin receptors have proliferated uncontrollably during the last decade, and this book should help in developing a perspective on this field. The 11 chapters are written by experts who have contributed importantly to the research they are reviewing so the chapters are authoritative, reasonably comprehensive, and as current as the rate of change permits.

Because serotonin receptors occur in many tissues and influence many types of physiologic functions, they represent potential targets for medicinal chemists pursuing drugs for treating diverse disorders. Modifying serotonin receptors in brain may be useful in treating psychiatric diseases including depression, obsessive-compulsive behavior, panic disorder, anxiety, and schizophrenia; neurologic diseases including Alzheimer's disease, Parkinson's disease, and intention myoclonus; obesity and eating disorders such as bulimia or carbohydrate craving; and other conditions such as alcoholism and chronic pain. Modifying serotonin receptors on vascular tissues may be useful in migraine, stroke, thrombosis, and other circulatory disorders. Modifying serotonin receptors in gut may be useful in regulating gut motility or secretion. The medicinal chemist pursuing any of these targets needs to understand the multiplicity of serotonin receptors, their distribution and their characteristics. Such information is not complete but is growing rapidly and this book provides a good base for following the developments in this field.

Two chapters provide detailed information on radioligand binding to $5HT_1$ receptor subtypes and to $5HT_2$ receptors in brain membranes. Already since the volume was prepared, radioligands for the $5HT_3$ receptors in brain membranes have been developed. A third chapter on autoradiographic studies describes the distribution of serotonin receptors in brain, including human brain. Other chapters deal with the coupling of serotonin receptors to second messenger systems—adenylate cyclase or phosphatidylinositol turnover. Chapters aimed at correlating binding sites with function cover autoreceptors that regulate serotonin release (serotonin receptors can also modulate the release of other transmitters), electrophysiology of serotonin receptors in the central nervous system, behavioral consequences of serotonin receptor activation, and serotonin receptors in vascular smooth muscle. A final chapter concerns regulation of serotonin receptor number and function in brain, a topic that has been studied especially in relation to antidepressant modalities that have delayed onset of therapeutic efficacy. Chapter 12 is a very brief look into the future by the editor. An appendix with chemical structures of the most common ligands for serotonin receptors enhances the usefulness of this volume.

The reader is not likely to be disappointed in the quality of this book but would be disappointed if he expected to learn about serotonin receptors in the gut (the major site of serotonin production in the body) or about some functional aspects of serotonin receptors such as regulation of neuroendocrine function, involvement in analgesia, or effects on other nonvascular tissues in the periphery. A minor annoyance was the consistent misspelling of Erspamer, the Italian scientist who isolated serotonin from gut, in the chapter on historical perspectives. In all, however, this book gets a "buy" recommendation from me.

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Studies in Natural Products Chemistry. Volume 3. Stereoselective Synthesis (Part B). Edited by Atta-ur-Rahman. Elsevier, Amsterdam, The Netherlands. 1989. xi + 543 pp. 17 × 24.5 cm. ISBN 0-444-87298-1. $165.75.

Professor Atta-ur-Rahman, as editor of the series Studies in Natural Products Chemistry, has assembled an impressive array of prominent synthetic chemists to describe some of the latest advances in the stereoselective synthesis of natural products. The book consists of 15 chapters covering different aspects of alkaloid, terpene, carbohydrate, and antibiotic preparations.

The chapters are generally well written and the structures clearly drawn. Each discussion has been abundantly supplied with footnotes and references. This book is recommended to chemists interested in the synthesis of natural products.

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Sterol Biosynthesis Inhibitors. Pharmaceutical and Agrochemical Aspects. Edited by D. Berg and M. Plempel. Ellis Horwood Ltd., Chichester, England. 1988. 583 pp. 17 × 24.5 cm. ISBN Q-89573-671-3. $155.00.

This book consists of 22 chapters (contributed by 34 authors) divided into three parts. Part I deals with the chemistry, mode of action, toxicology, and general aspects of sterol biosynthesis inhibitors (SBIs). Part II covers applications in plant protection, and Part III concerns chemotherapy of human and animal mycoses and possible new uses. It is a comprehensive review when covering chemicals which have been developed and not marketed, those under development, and commercialized products, but is less complete when covering most of the vast patent literature on SBIs. References are extensive and up to date, including some in 1988, and represent an excellent and unique compilation of this data. They will serve as a useful resource for the reader desiring more detailed information on specific topics.

As a result of this extensive literature review and the number of contributors there is some repetition, and some chapters, such as "Mode of action of pyridines, pyrimidines and azole antifungals" (H. Vanden Bossche) in Section I, are somewhat wandering and discontinuous. One concern, which should be pointed out to readers uninformed with the area, is the somewhat dubious conclusion presented in the chapter "Mechanistic studies as a tool for the development of new compounds" (D. Berg et al.) that SBIs such as terbuconazole inhibit the 7-dehydratase step in sterol biosynthesis in addition to the 14-α-demethylase. This is concluded by the discovery of surprisingly high levels of $\Delta^{5,24}$-ethylsterols in fungi treated with terbuconazole which has been published in less than carefully reviewed journals. The authors fail to point out that these plant sterols found in *Botrytis* and *Pyricularia* have not been shown to be synthesized by the fungi

and have not ruled out the possibility that the sterols may have been absorbed from a plant-based medium. It was also noted, not unexpectedly, that the volume of discussion on some chemicals (in certain sections) could be correlated with the commercial affiliation of the author.

Section II, dealing with the practical applications of SBIs in plant protection, is nicely divided into sections which reflect some of the most significant uses of these compounds. The control of a variety of cereal diseases has been one of the strengths of these fungicides, and a chapter detailing the various compounds and diseases they control is included. The chapter on the control of fruit diseases gives considerable experimental data on stone fruit and grape diseases, but unfortunately, does not address the control of pome fruit diseases. Additional sections on new uses of SBIs include not only their effect on new diseases but their role as plant growth regulators and as plant protectants. Lastly, this section addresses the continuing problem of fungicide resistance, of which this group of antifungal compounds has not been spared.

Section III, dealing with animal and human mycoses, is oriented around three major classes of inhibitors which have reached clinical trials, azoles, morpholines, and allylamines, and space allocation is appropriate for the relative amounts of clinical and research data available for each class. The explanation of the observed lack of correlation of in vitro and in vivo antifungal activity will be especially worthwhile for all investigators studying imidazole and triazole compounds. The information on the relative interaction of these agents with the P-450 cytochromes provides keen insight into the mode of antifungal action as well as the potential for causing toxicity to mammalian cells. The role of pharmacokinetics in the efficacy of sterol biosynthesis inhibitors adds a key dimension to the monograph and the review of clinical utility of these agents compared to current antifungal therapy against superficial, vaginal, and disseminated fungal infections is encouraging. This book provides further evidence that sterol biosynthesis inhibitors will play an increasingly important role in the therapy of AIDS and other immunocompromised patients. Furthermore, evidence is clearly presented that shows how and why these agents will be beneficial to mankind against an increasingly important problem in human medicine. The organization of this section around mechanism of action, as opposed to therapeutic class, is a good idea and the inclusion of the chapter on aromatase inhibitors is a good extension of the idea.

The book is the best and most detailed collection of information available on the subject and we recommend it as an excellent resource book for those active or interested in the subject. The price ($155), however, may limit its acquisition to scientific libraries.

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Computer Simulation of Biomolecular Systems. Edited by Wilfred W. Gunsteren and Paul K. Weiner. ESCOM Science Publishers, Leiden, The Netherlands. 1989. viii + 224 pp. 17 × 24.5 cm. ISBN 90-72199-03-0. $95.00.

This book is the proceedings of two colloquia organized by Alliant Computer Systems Corp. in Dec 1987 in Priceton, N.J. and in April 1988 in Amsterdam. Fourteen contributions are intended to form a concise introduction to the technique of free energy calculation and to give an account of the state of the art in applications to molecules. The papers were refereed.

In the opening paper, Beveridge and DiCapua present an introduction to the calculations of free energy via molecular simulation. Van Gunsteren follows with a paper on methods of calculation with notes on successes and problems. The next three papers by W. L. Jorgensen, C. L. Brooks, and T. P. Lybrand respectively bring the methodology into the realm of aqueous solution, biological systems, and drug design applications.

Subsequent papers deal with problems and pitfalls in the calculations. These are followed by papers in which specific applications are described. The timeliness of this topic, emerging into the area of drug design, makes it of value as a current status reference. Because of the general quality of the contributions and the experience of the authors, the book takes on the status of a primer in this field. The book is well done, moderately well indexed, with good illustrations. It belongs in general libraries and personal libraries of participants in this emerging area of research.

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Cerebrovascular Diseases. Sixteenth Research (Princeton) Conference. Edited by Myron D. Ginsberg and W. Dalton Dietrich. Raven Press, New York. 1989. xxvii + 453 pp. 16 × 24 cm. ISBN 0-88169-485-0. $125.00.

The study of stroke and cerebrovascular disorders has become one of the premier areas of the clinical and basic neurosciences. This book, edited by Ginsberg and Dietrich, which compiles manuscripts from the Sixteenth Biennial Princeton Conference (Miami, March, 1988), is a tribute to the renewed interest in this important area of research.

Containing 46 chapters (4–10 pages each) the work is divided into 16 major sections. Topics covered are diverse and range from clinical and epidemological aspects of cerebrovascular disease (chapters 1, 20, 21, 22) to detailed analysis of selected pharmacological agents (NMDA antagonists, chapters 7–9, 14–16). Among other subject matter are portions devoted to thrombolytic agents (chapters 2–5) neurotransmitters in general (chapters 6–17), animal models of stroke (chapters 10–13), cell culture as an in vitro model of hypoxic injury (chapters 14, 15), the role of glia in stroke (chapters 18–19), disease-induced dementia (chapters 20–22), the vascular lesion (chapters 23, 24), fatty acids and lipids (chapters 30, 31), oxygen radicals (chapters 38–41), the blood–brain barrier (chapters 43–46), and miscelleneous subjects (acidosis, PET scanning chapters 25–29, 36–37). Because most chapters end with suggestions for additional research, *Cerebrovascular Diseases* is both informative and thought-provoking. As a nonclinical scientist, I found the sections on functional recovery, including brief descriptions of animal models, to be particularly enlightening.

The brevity of the chapters makes the volume easy to pick up on short notice or when unexpected reading opportunities arise. Specific papers covering similar matter (chapters 32, 33; amphetamine-facilitated functional recovery) are grouped together and are followed by entertaining discussions; broader topics (oxygen radicals; chapters 38–41) are likewise followed by concise general discussions. My one reservation concerning the book dealt with references which, since lacking titles, make it difficult for researchers new to the field to cull the most important papers from each manuscript. While recent (through 1988), the number of references for the different papers varied substantially (2–86) with 20–30 citations being average. The index of 18 pages was adequate to find desired topics.

Overall, I would rate this book as an excellent addition to the body of information on the pathophysiology, and potential therapeutic approaches, to cerebrovascular disease. Most importantly, for the novice to the area, the work brings together a broad range of current topics in a straightforward, easily readable format. My fear is that the expense ($125.00) will keep the work from all but departmental or institutional libraries. In this rapidly advancing area of research, delays in information distribution could rapidly outdate the content.

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Modern Drug Research: Paths to Better and Safer Drugs. Edited by Yvonne C. Martin, Eberhard Kutter, and Volkhard Austel. Marcel Dekker, Inc., New York. 1989. xvi + 507 pp. 15.5 × 23.5 cm. ISBN 0-8247-7902-9. $125.00.

This is the 12th monograph in the Medicinal Research Series edited by Gary L. Grunewald. It contrasts sharply with many other books composed of chapters covering a broad range of topics and written by many different authors. The topics selected are appropriate ones for anyone with a serious interest in modern drug research. Individual chapters address receptors and drug

action, molecular pharmacology and biochemistry, pharmacokinetics and metabolism, principles of medicinal chemistry and QSAR, the role of biotechnology, medicinal chemistry approaches, therapeutic evaluation, role of pharmaceutics, and nontechnical factors in drug research.

The clarity of the presentations, the scope of the coverage, and the selection of examples are exceptional. Most importantly, it is a well-edited, coherent book. Each chapter takes cognizance of the other chapters and many cross references are employed. The volume provides a wealth of information, stimuli, and challenges for those aspiring to, or active in, the exciting quest for useful new drugs.

Each chapter includes selected general references to supplement the text. A comprehensive (36 pp) key word index is also included.

A number of minor typographical errors appear throughout the book but have little negative impact on the text.

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Economic and Medical Plant Research. Vol. 3. Edited by H. Wagner, H. Hikino, and N. R. Farnsworth. Academic Press, New York. 1989. ix + 150 pp. 15 × 23 cm. ISBN 0-12-730064-3. $28.00.

The third volume of this series of comprehensive pharmacognostic investigations contains six timely chapters. The first on the economic significance of plants and their constituents as drugs (P. P. Principe) should be required reading for all researchers and drug manufacturers who rely on botanical sources for their drug production. It is frightening to contemplate that 50 000 plants will be extinct by the year 2000. The next chapter on quinghaosu (artemisinin) as an antimalarial drug (P. I. Trigg) presents a beautiful example of multifaceted chemical, medicinal, biochemical, pharmacokinetic, and clinical research on a fascinating drug and its many synthetic analogues. Artemisinin may well become one of the more important unorthodox antimalarials if admitted despite its toxicity and teratogenicity. The other chapters detail plant-derived molluscicides (K. Hostettmann) and insecticides (H. Rembold; J. A. Klocke). Ecologists on the war path against synthetic insecticides should read about about the options plant-derived chemicals offer if the world does not want to starve.

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Neuromethods-12 Drugs as Tools in Neurotransmitter Research. Edited by A. A. Boulton, G. B. Baker, and A. V. Juorio. Humana Press, Clifton, NJ. 1989. 528 pp. 15.5 × 23.5 cm. ISBN 0-89603-122-5. $84.50.

This latest volume in Boulton and Baker's series on Neuromethods focuses on new methods and techniques which have been used for identifying and understanding the action and applications of neurotransmitters in the CNS. This volume contains 11 chapters dealing with pharmacological tools that have been used over the years in the study of various neurotransmitter systems. Some subjects are discussed in more than one chapter; each author, however, treating each system from a different perspective. The first three chapters deal with neurotoxins for the study of catecholamine neurons, 5-hydroxytryptamine, and GABA and their receptor sites, with special emphasis being placed on the conditions required for assay. Thus Chapter 1, Neurotoxins that affect central and peripheral catecholamine neurons (R. W. Kostrzewa), includes discussions on 6-OHDA, DSP-4, MPTP, guanethidine, and anti-DBH. Chapter 2, Neurotoxins that effect central indoleamine neurons (T. A. Reader), discusses *p*-chlorophenylalanine and dihydroxytryptamines and the neurobiology of serotonin. Chapter 3, Toxins affecting cholinergic neurons (V. A. Chiappinelli), reviews snake venoms, α- and β-bungarotoxin, lophotoxin, botulinum toxin, spider venoms, acetylcholinesterase inhibitors (physostigmine and organophosphorous agents), nicotine, *d*-tubocurarine, the classical muscarinic agonists and antagonists (atropine, scopolamine, QNB), and selective muscarinic agents (McN-A343 and pirenzepine). Chapter 4, GABA Antagonists: their use and mechanisms of action (M. Farrant and R. A. Webster), highlights such GABA antagonists as picrotoxin, bicuculline, and related alkaloids, SR95531, pitrazepin, naloxone, strychnine, iso-THAZ, and R5135. The chapter also reviews ionophore antagonists and $GABA_B$ antagonists, such as 5-aminovaleric acid, 3-aminopropanesulfonic acid, phaclofen, β-phenyl-GABA, and 3-aminopropylphosphonic acid. The remaining six chapters examine the effect of drugs that interfere with monoamine storage (S. Garattini and T. Mennini), the various techniques that are available for the estimation of the metabolism of monoamines (M. Hadjiconstantinou and N. H. Neff) and acetylcholine (D. L. Cheney, J. Lehmann, C. Cogi, and P. L. Wood), as well as behavioral and biochemical models of disease, i.e. biochemical models of Parkinson's disease (R. E. Heikkila, P. K. Sonsulla, and R. C. Duvoisin), drug-induced behavioral models of central disorders (D. M. Jackson), and use of 5-HT receptor agonists and antagonists for the characterization of their respective receptor sites (J. E. Leysen). A subject index is also included.

Dr. Juono as a guest editor has assembled an impressive list of contributors who have added their specialized knowledge and competence to make this a well-organized and readable text. The glossy pages and large legible print are easy to read. Medicinal chemists, pharmacologists, and neuroscientists will find this essential reading and a ready source of important information. Several errors in structural formulae (i.e. DSP-4, p 28; 5,6-DHTQ, p 52; and (+) Bicuculline methochloride should be (−) Bicuculline methochloride, p 167) will annoy the medicinal chemists. The book deserves a place on every scientist's shelf involved with neurotransmitter research.

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Books of Interest

Biochemistry of Antimicrobial Action. T. J. Franklin and G. A. Snow. Routledge, Champman & Hall, New York, 1989. viii + 216 pp. 15.5 × 23.5 cm. ISBN 0-412-30260-8. $27.50.

Control of Appetite. Myron Winick. John Wiley & Sons, Inc., New York, 1988. viii + 152 pp. 15.5 × 23 cm. ISN 0-471-63743-2. $51.50.

Antibodies. Volume II. A Practical Approach. D. Catty. Oxford University Press, New York, 1989. xviii + 259 pp. 15.5 × 23 cm. ISBN 0-19-963019-4. $39.00.

About Your Medicines. U.S. Parmacopeial Convention, Inc., MD, 1989. lxxi + 1013 pp. 11 × 18 cm. ISBN 0-913595-42-X. $6.95.

A Guide to General Toxicology. 2nd Revised Edition. Volume 5. Judith K. Marquis. S. Karger, Basel, Switzerland. vii + 293 pp. 17.5 × 24.5 cm. ISBN 0-8055-4924-5. $45.50.

Blood Substitutes. Preparation, Physiology and Medical Applications. K. C. Lowe. VCH Publishers, Inc., New York, 1988. 187 pp. 17 × 24.5 cm. ISBN 0-89573-578-4. $110.00.

Determination and Use of Stability Constants. Arthur E. Martell and Ramunas J. Motekaitis. VCH Publishers, Inc., New York, 1989. x + 216 pp. 16 × 24 cm. ISBN 0-89573-741-8. $34.50.

Spectrometric Titrations. Analysis of Chemical Equilibria. J. Polster and H. Lachmann. VCH Publishers, Inc., New York, 1989. xvi + 433 pp. 18 × 24.5 cm. ISBN 089573-570-9. $128.00.

Excitatory Amino Acids in Health and Disease. Biological Council Symposium on Drug Action. David Lodge. John Wiley & Sons, Inc., New York, 1988. xvi + 402 pp. 15.5 × 23.5 cm. $79.95.

Protein Sequencing. A Practical Approach. J. B. C. Findlay and M. J. Geisow. Oxford University Press, New York, 1989. xii + 199 pp. 16 × 23.5 cm. ISBN 0-19-963012-7. $56.00.

Organometallic Chemistry. Volume 17. A Review of the Literature Published During 1987. E. W. Abel and F. G.

A. Stone. Royal Society of Chemistry, UK, 1989. xvi + 475 pp. 14.5 × 22.5 cm. ISBN 0-85186-651-4. $253.00.

Colours for Food, 2nd Revised Edition. DFG, VCH Publishers, Inc., New York, 1989. 454 pp. 18 × 22 cm. ISBN 0-89573-617-9. $165.00.

Amino Acids and Peptides, Volume 20. A Review of the Literature Published During 1987. J. H. Jones. Royal Society of Chemistry, UK, 1989. xi + 336 pp. 14.5 × 22.5 cm. ISBN 0-85186-184-7. $158.00.

About Your High Blood Pressure Medicines. United States Pharmacopeial Convention, Inc., 1989. xlvii + 302 pp. 10.5 × 18 cm. ISBN 0-913595-41-1. $6.95.

Alpha 1-Acid Glycoprotein: Genetics, Biochemistry, Physiological Functions, and Pharmacology, Series: Progress in Clinical Biological Research, Vol. 300. P. Baumann, C. Eap, W. Muller, and J. P. Tillement. Alan R. Liss, Inc., New York, 1989. xxv + 470 pp. 16 × 23.5 cm. ISBN 0-8451-5150-9. $94.00.

Chemistry and Biology of Naturally-Occurring Acetylenes and Related Compounds (NOARC). J. Lam, H. Breteler, T. Arnason, and L. Hansen. Elsevier Science Publishing Company, Inc., New York, 1988. xvii + 366 pp. 17 × 25 cm. ISBN 0-444-87115-2. $102.75.

Flow Injection Atomic Spectroscopy. Practical Spectroscopy Series, Volume 7. Jose Luis Burguera. Marcel Dekker, Inc.: New York, 1989. xii + 353 pp. 16 × 23.5 cm. ISBN 0-8247-8059-0. $125.00.

Intestinal Metabolism of Xenobiotics. Progress in Pharmacology and Clinical Pharmacology, Volume 7. Part 2. A. Koster, E. Richter, F. Hartmann, and F. Lauterbach. VCH Publishers, Inc., New York, 1989. 340 pp. 17 × 24 cm. ISBN 3-437-11223-6. $96.50.

Iron Porphyrins. Part 3. A. Lever and H. Gray. VCH Publishers, Inc., New York, 1989. xiii + 309 pp. 16 × 24 cm. ISBN 0-89573-718-3. $59.50.

The Maillard Reaction in Aging, Diabetes, and Nutrition. Series: Progress in Clinical and Biological Research. Vol. 304. Alan R. Liss, Inc., New York, 1989. xxii + 410 pp. 15.5 × 23.5 cm. ISBN 0-8451-5154-1. $85.00.

Protein Recognition of Immobilized Ligands. UCLA Symposia on Molecular and Cellular Biology, New Series, Volume 80. T. Hutchens. Alan R. Liss, Inc., New York, 1989. xviii + 344 pp. 16 × 23.5 cm. ISBN 0-8451-2679-2. $75.00.