Book Reviews

How to Write and Publish a Scientific Paper. By Robert A. Day. iSi Press, Philadelphia. 1979. xi + 160 pp. 15 × 23 cm. $15.00.

The book presents the distilled wisdom of a member of the Council of Biology Editors, who for many years has been involved in the editorial processing of 8 journals published by the American Society for Microbiology.

A scientific paper is first defined. There then follow short chapters, written with humor, that describe how to prepare a title; list authors; list addresses; prepare the abstract; write the introduction; write the materials and methods section; write the results; write the discussion; cite the acknowledgments; prepare the literature cited; design effective tables; prepare effective illustrations; type the manuscript; deal with editors; deal with printers; order and use reprints; write a review paper; write a conference report; and write a thesis.

Additional chapters discuss ethics, rights, and permissions; use and misuse of English; avoiding jargon; and how and when to use abbreviations. Six appendices include journal title abbreviations; abbreviations used without definition; common errors in style and spelling; words and expressions to avoid; prefixes and abbreviations for SI units; and accepted abbreviations and symbols. A good index is provided.

A list of 31 references includes many of the better-known texts that describe the writing and publication process. Because the author admittedly has had little experience outside the field of biology, it is not surprising that he has not included reference to the Fieser's "Style Guide for Chemists", the Gensler's "Writing Guide for Chemists", and the American Chemical Society's "Handbook for Authors". The last-named book covers much of the material in Day's book, with considerably more pertinence for readers of this review.

I enjoyed reading Day's book and recommend that it be added to chemistry libraries. I endorse the plea that authors begin to use the active voice, first person, and thus renounce the false modesty of the previous generation. I am discouraged by Day's assertion that scientific papers are not "literature", written by "authors" with individual style and flair. Because of the volume of papers handled and because of rising costs, a uniform system that is concise and readily understandable must be used. Indeed, scientific papers as we now know them may be replaced by entries in a computer storage system. Gone are the days when a Wilder Bancroft could found a journal (now the *Journal of Physical Chemistry*) for the publication of his descriptions of the fall foliage on the Cornell campus, when a Stephen Miall could entertain us each week with his biting commentary in "Blue Bits", and when one could refer to a publication by Marston Taylor Bogert, not just Bogert.

Amherst, Massachusetts **Edward R. Atkinson**

Advances in Neurology. Volume 24. The Extrapyramidal System and Its Disorders. Edited by Louis J. Poirier, Theodore L. Sourkes, and Paul J. Bedard. Raven Press, New York. 1979. xxii + 529 pp. 16 × 24 cm. $39.50.

This volume contains the papers (50 in all) presented at the VIth International Symposium on Parkinson's Disease held in Quebec, Sept 1978. The contributors (120 in all) represent most of the leading laboratories in Europe, America, and the Far East.

The topics covered include neuroanatomical studies (histochemistry and electron microscopy of the basal ganglia), animal experimental studies (lesions and pharmacology), human electrophysiology, neurochemical studies in parkinsonism and related disorders, and therapeutic trials in movement disorders.

The contributions are of a high standard and provide a useful survey for those engaged in experimental studies on basal ganglia function. The interests of medicinal chemists will be largely confined to the last ten chapters on "therapy". These include a valuable review of recent therapeutic developments by Barbeau et al. and a comparative assessment of bromocryptine and lergotrile (by Lieberman et al.).

This is a volume for the neurological library. Selective dipping may help the chemist interested in movement disorders.

Institute of Psychiatry, London **Brian Meldrum**

Transmethylation: Developments in Neuroscience. Volume 5. Edited by E. Usdin, R. T. Borchardt and C. T. Creveling. Elsevier/North Holland, New York. 1979. xxii + 631 pp. 16 × 24 cm. $55.00.

The collection of papers under the inclusive title of "Transmethylation" is the published record of a fourth in a series of conferences in this area of biochemical and biological research, which was held in Bethesda, Md., on Oct 16–19, 1978. Although the proceedings of this conference are published by Elsevier as Volume 5 of their series entitled "Developments in Neurosciences", the scope of papers presented is much broader. In fact, the conference and this volume are divided into four main divisions covering the biochemical and chemical aspects of *S*-adenosylmethionine and *S*-adenosylhomocysteine: small molecule methyltransferases; nucleic acid methyltransferases; and protein methyltransferases.

Specific examples of topics include the methylation of the 5-terminal cap structure of mRNA and its effect on protein synthesis. The role of protein carboxymethylation in bacterial and eukaryotic chemotaxis and excitation–secretion-coupled processes are also discussed. The absolute configuration of the sulfonium center of *S*-adenosyl-L-methionine has now been determined. A large segment of the conference was devoted to neurotransmitters and the role of methylation in their synthesis and function. The remarkable discovery of the role of phospholipid methylation in membrane fluidity and receptor function is also among those topics discussed.

The present volume represents a considerable extension of the methylation story since the publication of the reports of the first conference held at the Argonne National Laboratory in 1964. Most of the articles treat individual specific topics much as one would find in primary journals rather than as a general review of a particular area. Still, one can readily become updated in special areas by reading selected chapters. This reviewer believes that pioneers in the methylation story as Guilio Cantoni and the late Vincent du Vigneand would be pleased with how far their early discoveries have reached in stimulating research in the various facets of interaction of methyl groups with important biological materials.

Massachusetts Institute of Technology **John M. Buchanan**

Neurotransmitter Systems and Their Clinical Disorders. Edited by N. J. Legg. Academic Press, New York. 1979. vii + 240 pp. 16 × 24 cm. $16.00.

This volume is based on a meeting held by the Department of Neurology at the Royal Postgraduate Medical School in 1977. The 24 authors are clinicians, basic researchers, or both and they provide a broad-ranging review of CNS neurotransmitter systems and their disorders. The text should be most useful for clinicians who wish to keep abreast of the recent developments in CNS pharmacology and for medical students as a stimulus for future research. The first chapter by Gray provides a succinct review of synaptic ultrastructure which is written in an easily comprehensive style. Langer details our present concepts of adrenergic transmission, including the classification of the different types

of postsynaptic adrenergic receptors and the more recently identified presynaptic receptors. He provides some novel suggestions of how antidepressants and hypotensive drugs might interact with these different populations of receptors. This chapter serves to underline the complexity of synaptic transmission processes which were once thought to be simply one-to-one relay stations. Other basic studies include a chapter by Costall and Naylor detailing behavioral experiments in rats following central injection of dopamine agonists and antagonists. Their results have led them to suggest that there must be two distinct dopamine receptors, one involved in mediating hyperactivity and the other, dyskinesia, following treatment with dopamine agonists. Marsden details studies of combining monoamine oxidase inhibition with L-tryptophan administration in rats, suggesting a possible therapeutic role of serotonin in the relief of depression when this pharmacological treatment is used in man. Snell provides pointers for the study of the role of endogenous peptides in the brain, focusing mainly on the endorphins.

A number of clinical chapters discuss dopaminergic involvement in Parkinson's disease (Pycock), control of growth hormone and prolactin release (Parkes et al.), Huntington's chorea (Bird), and schizophrenia (Crow and Johnstone). However all these chapters emphasize the importance of other neurotransmitters in these disorders. Additional chapters of note are by Meldrum on epilepsy and antiepileptic agents, Bowen on senile dementia, and Shaw on the role serotonin systems in depression. Chadwick et al. provide a concise review of the possible therapeutic utility of 5-HTP in different forms of myoclonus, while Pinching provides an excellent review of pathophysiological mechanisms in myasthenia gravis and the Eaton–Lambert syndrome. A number of chapters focus on the autonomic nervous system. Bannister details the diagnosis and management of chronic autonomic failure, while Pallis suggests the use of the pupil as an indicator of denervation hypersensitivity in the autonomic nervous system. Sever discusses autonomic control of blood pressure and the possible utility of measuring plasma catecholamines as an index of sympathetic nervous activity.

I can not recommend this text for basic researchers, since a good deal of medical knowledge is assumed in the discussion of many of the clinical syndromes. However basic biochemical and anatomical information is beautifully summarized for clinicians in each chapter. This volume brings together a wide range of current basic research and places it in a clinical context. Neurologists, psychiatrists, and clinical pharmacologists will find this text an excellent addition to their library.

University of California, San Diego **Ian Creese**

GABA-Neurotransmitter. Pharmacochemical, Biochemical, and Pharmacological Aspects. By Povl Krogsgaard-Larsen, Jorgen Scheel-Kruger, and Helmer Kofod. Academic Press, New York. 1979. 552 pp. 16 × 24 cm. $55.00.

This volume describes the proceedings of the 12th Alfred Benzon Symposium held at the premisses of the Royal Danish Academy of Sciences and Letters in Copenhagen in May 1978. This meeting on the GABA system was the third international symposium devoted entirely to the subject since the initial report of the presence of γ-aminobutyric acid (GABA) in mouse brain by Roberts and Frankel in 1950. GABA is now generally considered to be the principal inhibitory brain transmitter in the central nervous system. The present status and knowledge of the role of GABA in normal brain function or various pathological brain diseases is still far from being completely understood. It is known, however, that there is a malfunction of GABA in Huntington's chorea and parkinsonism, possibly also in epilepsy, spasticity, schizophrenia, and drug-induced tardive dyskinesia.

These symposia, which are traditionally limited to include a maximum of 40 active participants, focused on an up-to-date discussion of the clinical conditions appropriate for treatment with GABA-ergic drugs, the design and development of specific GABA receptor agonists, inhibitors of the GABA uptake and metabolizing process, mapping of neuronal pathways and interaction of GABA neurons with other neurotransmitter systems, and development of new animal models relevant for testing GABA-ergic drugs. The meeting emphasized that there are still no reports available on the effects and efficiency of a prolonged pharmacotherapeutic treatment in the human clinic with specific and potent GABA-ergic drugs. It was also the stated intention of this symposium to discuss the significance of GABA in the mechanism of action of a large series of drugs available in the clinic and which among other actions have been shown to facilitate GABA neurotransmission, i.e., the benzodiazepines, barbiturates, diphenylhydantoins, sodium valporate, baclofen, ethanol, and some antipsychotic neuroleptic drugs.

Included in this volume is an index of authors and a very inadequate subject index. However, this book will be necessary reading to those medicinal chemists, biochemists, clinicians, and pharmacologists that are involved with research on GABA, in particular, and neurotransmitters, in general. There is no doubt that this area of research seems now to be at its early stage of development and will dominate the attention of research in psychopharmacology for many years to come. This volume has admirably summarized the state of our knowledge to date.

Staff

Nutrition and the Brain. Volume 4. Edited by R. J. Wurtman and J. J. Wurtman. Raven Press, New York. 1979. x + 222 pp. $23.00. 16.5 × 24 cm.

Volume 4 in this series is concerned with brain dysfunction associated with nutritional causes. The possibility that nonnutrient food additives, e.g., food colors, may cause or exacerbate behavioral disorders, especially in children, is analyzed in a dispassionate manner. Neurotoxic effects of glutamic acid are considered in relation to the sometimes liberal use of the monosodium salt of this amino acid in certain foods. The conclusion is that any risk associated with monosodium glutamate use in foods must be very low. One chapter deals with small peptides formed by partial hydrolysis of dietary proteins. Recently, much attention has been focused on biologically active peptides present in or affecting the brain. Exorphins (exogenous peptides with morphine-like activity) and other peptides derived from dietary proteins may be absorbed into the systemic circulation and influence brain function, according to still preliminary findings. The effects of ingested alcohol directly on brain or the indirect effects due to altered nutrition are discussed. There is no doubt that excessive consumption of alcohol regularly leads to pathologic changes. Finally, there is a chapter on metabolic errors adversely affecting the brain's nutritional state. Several genetic diseases involve defects in amino acid metabolism such that ingestion of normal amounts of an amino acid results in abnormally high concentrations being presented to the brain with pathologic consequences. This volume, like earlier ones, contains well-written and generally thorough reviews of subjects not within the realm of medicinal chemistry but of interest to some medicinal chemists. At least parts of this volume will be of interest to food chemists and toxicologists as well.

Lilly Research Laboratories **Ray W. Fuller**

Analytical Profiles of Drug Substances. Volume 8. Edited by Klaus Florey. Academic Press, New York, San Francisco, London. 1979. x + 558 pp. 16 × 23.5 cm. $28.00.

The eighth in this series of useful volumes contains the detailed descriptions of 17 drugs: aspirin, bromocriptine methanesulfonate, calcitrol, chlorotetracycline hydrochloride, dobutamine hydrochloride, erythromycin, gramicidin, griseofulvin, halcinomide, hydralazine hydrochloride, calcium leucovorin, methimazole, naldixic acid, neomycin, pseudoephedrine hydrochloride, triprolidine hydrochloride, and sodium valproate/valproic acid. In this volume, the table of contents of the individual chapters are typeset and, with one or two exceptions, the authors have used similar typeface for their manuscripts, giving an overall improvement in readability to the volume. A brief but interesting footnote to the discovery of aspirin is included in the chapter on that drug.

Staff

Pharmacological and Biochemical Properties of Drug Substances. Volume 2. Morton E. Goldberg, Editor-in-Chief. American Pharmaceutical Association, Academy of Pharmaceutical Sciences, Washington, D.C. 1979. xv + 557 pp. 15.5 × 23.5 cm. $29.00, $20.00 for APhA members.

The "Physician's Desk Manual" and the "AMA News Letter" provide physicians with critical and practical guidelines for prescribing and using clinically approved drugs. The pharmacologist working in a laboratory or clinical setting will be able to refer to authoritative monographs on selected drugs in the present series. It should be emphasized that these monographs are not designed for the typical physician who wants to rely on virtually foolproof recommendations for the use of drugs. There is too much organic and medicinal chemistry in each of these compilations, too much detailed biochemistry, and too much animal pharmacology for the practitioner, and there are not enough stringent practical directions and warnings to absolve the clinician from independent experimentation. But these very qualities will endear these chapters to experiment-minded biological scientists who want to solve questions that might enhance their skills, update their knowledge about drugs, and stimulate experimentation. Many younger physicians deplore the lack of in-depth pharmacology during their training and an increasing removal from basic biological sciences which clinical practice imposes on them even in a university hospital. On the other hand, the new Doctors of Pharmacy coming off the academic assembly lines are highly motivated toward drug uses and drug metabolism, and to them the present monographs will be of great value.

Volume 2 contains the following chapters: CNS agents (amoxapine, the analgetic butorphanol, and the anticonvulsant valproic acid); cardiovascular agents (the β-blockers atenolol and metropolol and the antiarrhythmic disopyramide); the antihypertensives labetalol and bretylium tosylate and the antithrombotic sulphinpyrazone; chemotherapeutic drugs (cephadrine, doxycycline, miconazole, and tamoxifen); the nonsteroidal antiarthritic agents auranofin, levamisol, and penicillamine, some of which still need introduction in U.S.A.; pulmonary agents (acetylcysteine and ipratropium bromide); a GI tract drug, sincalide; and a resume on endorphins and their potential therapeutic uses.

Each chapter gives the historic background that led medicinal chemists to the logical or serendipitous development of the respective drug. A complete chemical description, sometimes even with synthetic schemes, follows and, in turn, all biochemical and pharmacological data including drug metabolism bearing on the compound are given with copious references. In many cases, structure–activity relationships are tabulated, and the drug's clinical behavior is then discussed where applicable.

The book is attractively furnished and priced moderately.

University of Virginia **Alfred Burger**

Moses Maimonides' Glossary of Drug Names. Edited by Fred Rosner. The American Philosophical Society, Philadelphia. 1979. Produced and distributed by University Microfilms International, Ann Arbor. ii + 364 pp. 17.5 × 25.5 cm. $20.75.

"The resin is clandestinely introduced as a narcotic to be smoked with tobacco or consumed in electuaries. A fierce strife is always in progress between authorities and the contrabanders who carry out the illict commerce in this drug", wrote Moses Maimonides in his "Glossary of Drug Names" for Hemp (*Cannabis sativa* L.), a poignant reminder that neither our attitudes nor our enforcement capabilities have changed over the past 800 years.

The present work represents one of the remaining three Maimonidean medical treatises not yet available to the English reader. The ten authentic medical treatises of Maimonides lay dormant for many centuries. The past quarter century has seen both Hebrew and English editions of such works, including treatises on *Asthma, Regimen of Health, Poisons, Hemorrhoids, the Medical Aphorisms of Maimonides and Discourse on the Explanation of Fits.*

This work was discovered by Max Meyerhof, an opthamologist in Egypt, in the Aga Sofia library in Istanbul as Arabic manuscript no. 3711. Dr. Meyerhof edited the original Arabic and provided a French translation with detailed commentary which he published in 1940 in Cairo. The work is essentially a pharmacopeia and consists of 405 short paragraphs containing names of drugs in Arabic, Greek, Syrien, Persian, Berber, and Spanish. This book is the English translation by Fred Rosner of the French edition by Max Meyerhof.

This book will be of interest to those chemists with a historical and/or a biblical interest and is particularly recommended to those who are under the impression that the process of drug discovery begins in the chemical laboratory. Careful review of the approximately 2000 names may reveal some new leads to old drugs. Browsing through this book could off some welcome relief from Chemical Abstracts.

Staff

The Biochemistry of Atherosclerosis. Volume 7. The Biochemistry of Disease. Edited by A. M. Scanu, R. W. Wissler, and G. S. Getz. Marcel Dekker, New York. 1979. xx + 548 pp. 18 × 26 cm. $49.75.

Written for those with some background in atherosclerosis and lipid metabolism, this book is Volume 7 in a series of monographs on "The Biochemistry of Disease". Workers over the past 2 decades have rejuvenated atherosclerosis research, clearly demonstrating the disease as one which arises from a number of etiologic factors and which affects both large- and medium-sized arteries. It is a credit to their research that the disease can now be partially understood—or at least described—in biochemical terms. This book ambitiously covers a wide range of topics: basic etiological factors are linked to the biochemistry of the disease and its accompanying clinical manifestations, with particular emphasis on plasma lipids. In fact, the book is testimony to the belief of the authors that the formation and metabolism of plasma lipoproteins play a major role in the development of atherosclerosis. Since major emphasis is placed on the role of lipoprotein in the genesis of atherosclerosis, the title "The Biochemistry of Atherosclerosis" is somewhat misleading; it would have been more appropriate to have entitled the book "the role of lipoproteins in the biochemistry of atherosclerosis".

The structure, transport, and metabolism of plasma lipoproteins and their relationship to cardiovascular disease are the principal topics of this monograph. Particular emphasis is placed on the metabolic interaction of serum lipoproteins with cells. This material is reviewed by leading authorities and they very adequately interpret the literature up to and including 1977. The chapters on the structure of plasma lipoproteins demonstrate the increased sophistication and successful use of physical measurement tools to study the static and dynamic properties of these molecules. Techniques such as NMR, small-angle X-ray scattering, and fluorescence and electron-spin resonance spectroscopy are among those discussed.

There is excellent coverage of the lipid enzymes, lipoprotein lipase, lecithin cholesterol acyltransferase, phospholipases, and the various cholesterol esterases and hydrolases. These enzymes are intimately involved in the cellular organization of lipids, lipoprotein interchange and metabolism, and plaque development. Also reviewed very competently are the chapters on the interaction between serum lipoproteins and the cellular constituents of the arterial wall. The authors place emphasis on the structure of the cellular components of the arterial wall and the role that arterial smooth muscle cells play in the overall atherosclerotic process.

The reader should be aware that, although the authors emphasize the role that lipids and lipoproteins play in the atherosclerotic process, they do not rule out other important factors, such as platelets, collagen, elastin, glycosaminoglycans, etc. It was a disappointment that the elegant work of Goldstein and Brown, which delineates the low-density lipoprotein pathway and its relation to atherosclerosis, was not described in greater detail. Their efforts represent the major biochemical advance in understanding the genetic defect of familial hypercholesterolemia.

The attempt of the authors to describe atherosclerosis in biochemical terms is a very ambitious task; they have done an admirable job of fusing current postulates of the effects of lipids and lipoproteins on this complex disease state.

Pfizer Central Research **Gerald F. Holland**