Book Reviews

Aldehyde Adducts in Alcoholism. Progress in Clinical and Biological Research, Vol. 183. Edited by Michael A. Collins. Alan R. Liss, Inc., New York. 1985. xiv + 230 pp. 16 × 24 cm. ISBN 0-8451-5033-2. $46.00.

This monograph on the biological effects of acetaldehyde and other aldehyde adducts as possible etiological factors in alcoholism is a compendium resulting from a Roundtable Meeting of investigators at the Second Congress of the International Society for Biomedical Research on Alcoholism and the Annual Meeting of the Society on Alcoholism held in Santa Fe, NM, June 1984. It is a timely, if controversial, subject which has not been treated systematically in the past, possibly because the scientific community is divided in their assessment of the role of acetaldehyde, the first metabolic product of ethanol metabolism, in alcoholism. To be sure, there is evidence, although sometimes only from model systems in vitro, that acetaldehyde does in fact bind covalently to a number of biological macromolecules such as proteins (D. J. Tuma and M. F. Sorrell), brain membranes (O. Tottmar), and hemoglobin (C. M. Peterson and L. B. Nguyen; Y. Israel et al.), or to other low molecular weight substances of biological origin such as dopamine (G. A. Smythe and M. W. Duncan; M. Hirst et al.; A. Clow et al.; B. Sjoquist; N. Ung-Chhun et al.), tryptophan metabolites (R. Susilo and H. Rommelspacher; O. Beck et al.; J. V. Johnson et al.; T. R. Bosin), enkephalins (M. C. Summers), and tetrahydrofolic acid (L. B. LaBaume and R. W. Guynn). The salsolinol and other tetrahydroisoquinolnes (TIQ's), tetrahydro-β-carbolines (TBC's), imidazolidinones and 5,10-ethylidenetetrahydrofolic acid formed from the latter reactions all require structure proof as well as quantitative measurements with demanding sensitivity to ascertain their presence in biological systems. Accordingly, about half of the book is devoted to these methodological problems.

The aldehyde binding reactions are all depicted as simple ionic mechanisms and no mention is made of free radical participation in, e.g., protein binding during ethanol oxidation. Also absent is any discussion of the therapeutic possibilities of exogenously administered acetaldehyde sequestering agents, and Editor Collins apologizes for such unintended omissions. The chapter by Pietrusko et al. on aldehyde dehydrogenase inhibition by propionaldehyde (a toxic byproduct of xenobiotic metabolism) deviates from the main theme of this book, particularly when the comparison is attempted with 2,4-dihydroxyphenylacetaldehyde (DOPAL), the endogenous substance of interest.

The highlights of each individual chapter findings have been succinctly summarized by Editor Collins, giving the reader a preview of what portends and allowing a prioritized preselection of topics to be read. Perhaps the most intriguing chapter—which should be read *first* even though it occupies the last few pages of the book—is the one by R. D. Meyers, who is noted for the initial discovery (with Melchoir) subsequently conditionally confirmed by others, that under carefully defined conditions, repeated ICV instillation of TIQ's or TBC's to rats that normally avert alcohol will increase their volitional alcohol consumption up to 10-fold even after withdrawal of the drugs. The concept of "alcogenes" (patterned after the "toncogenes"), a presumed heritable genetic factor that can be activated by enzymes that metabolize ethanol or acetaldehyde, is presented for the first time to explain such phenomenon. Although highly speculative, this hypothesis offers a challenge to molecular and biochemical geneticists to prove or disprove, thereby serving as an important base for future research.

Although this book will not convince the skeptics, it is recommended to the general reader who may be interested in this subject, with the caveat that some highly speculative views of specialists make up the monograph and their work is not necessarily representative of the broad interdisciplinary nature of alcoholism research. That this area of research is still in an infant stage is indicated by the almost universal disclaimer at the end of each chapter that "more work needs to be done before definitive conclusions can be reached".

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Inositol and Phosphoinositides. Metabolism and Regulation. Edited by John E. Bleasdale, Joseph Eichberg, and George Hauser. The Humana Press, Inc. Clifton, New Jersey. 1985. xxii + 698 pp. 15.5 cm × 23.5 cm. ISBN 0-89603-074-1. $69.60, U.S.; $79.50, Export.

The content of this book is divided into five parts, and it includes also 48 abstracts of posters that have been presented during the meeting. Each section contains seven presentations and one discussion by most prestigious and currently active scientists. The discussion at the end of each section is most useful. The subject matter is timely and is of general interest to many scientists. Currently, this field is being studied in numerous laboratories.

The first two parts deal with myoinositol metabolism and homeostasis and phosphoinositide biosynthesis and degradation. They cover some of the important aspects in this area and summarize our current knowledge in this field.

The third and fourth sections deal with receptor-mediated alterations in phosphoinositide metabolism and phosphoinositides, calcium, and protein phosphorylation. Although this area of research has progressed rapidly and far beyond the content of this book, most of the data contained in this book are still very useful. Since many cell types and stimuli have been discussed, this volume provides a good reference.

The fifth part deals with phosphoinositides and arachidonic acid mobilization. Again, this field of research has advanced significantly since the meeting was held. In spite of this, the information available is still useful.

The sixth part deals with phosphoinositide metabolism in the nervous system. In this section a useful attempt was made to investigate a possible relationship between phosphoinositide metabolism and experimental diabetes.

In summary, this book continues to uphold the high standards set by its predecessors and will be an invaluable addition to the shelves of every library. In addition, it is an excellent reference book for established and other investigators, teachers, and students. The index is complete and most helpful. The printing quality is excellent and the price is reasonable.

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General and Synthetic Methods. Volume 7. Specialist Periodical Reports. G. Pattenden, Senior Reporter. The Royal Society of Chemistry, Burlington House, London. 1985. xii + 469 pp. 14.5 × 22 cm. ISBN 0-85186-884-3. $115.00.

This report, similar in scope and format to the previous volumes in this series, covers the literature published during 1982. The subject matter is classified according to chapters entitled "Saturated and Unsaturated Hydrocarbons", "Aldehydes and Ketones", "Carboxylic Acids and Derivatives", "Alcohols, Halogenocompounds, and Ethers", "Amines, Nitriles, and Other Nitrogen-containing Functional Groups", "Organometallics in Synthesis", "Saturated Carbocyclic Ring Systems", "Saturated

Heterocyclic Ring Systems", and "Highlights in Total Synthesis of Natural Products". There is an additional section listing "Reviews on General and Synthetic Methods". In all, over 2100 references are covered in this volume.

As has been the case with previous volumes, the organization of the various chapters is somewhat inconsistent. Part I of the chapter on "Organometallics in Synthesis", subtitled "The Transition Elements", is arranged by reaction type whereas Part II, "Main Group Elements", is subdivided according to the periodic group of the specific element. Chapter titles are misleading, since, for example, "Hydrocarbons" does not deal with hydrocarbons per se, but rather with formations and transformations of the hydrocarbon components of functionalized derivatives. Since a volume of this nature cannot provide a subject index, it is not possible to survey any particular functionality without a page-by-page perusal of much of the entire volume. There is an author index and a detailed table of contents. The chapter on "Strategy and Design in Synthesis", contained in Volume 5 of this series, the last reviewed for this Journal, has been replaced by one on "Highlight in the Total Synthesis of Natural Products". Although this may be of particular interest to readers of this Journal, in this reviewer's opinion the replaced chapter was one of more general utility to the chemical profession as a whole. Surprisingly, none of the chapters or subheadings deal with the syntheses of aromatic rings.

Despite these minor faults, this series continues to provide an invaluable aid to synthetic chemists hard pressed to keep up with the ever expanding literature. In the past this reviewer has commented on the escalating cost of these volumes. In fairness then it must be observed that in spite of a 7% increase in the number of pages over the volume published 2 years ago, there has actually been a small decrease in the cost of this volume. Possibly this fact results from the current high value of the U.S. dollar. It is time that the publishers of this series consider a less costly printing process, for although this volume continues the high standards of printing and editing which have always been a hallmark of this series, these volumes serve mainly for an "awareness" purpose and as such are unlikely to be perused much after their initial year on a library shelf. Consequently, it is not necessary to bind and print such books as though their useful lives would go on for decades, and a much cheaper price might put this series back where it belongs: on the personal desks of individual chemists involved with any aspect of synthetic chemistry.

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Neurotransmitter Receptor Binding. 2nd Edition. Edited by H. I. Yamamura, S. J. Enna, and M. J. Kuhar. Raven Press, New York. 1985. xiv + 242 pp. 16 × 24 cm. ISBN 0-88167-027-8. $54.00.

The use of high specific radioactivity ligands, either drugs or neurotransmitters, to selectively label neurotransmitter receptors in retrospect, appears to be a very logical method by which to derive structure–activity relationships for new chemical entities. It was not, however, until 1973, when [^{3}H]naloxone was used in Solomon Snyder's laboratories at the Johns Hopkins Medical School to label opiate receptors in rat brain, that the technique became technically feasible. Since this time, many radioligands have been used to label all manner of receptors and the ability to demonstrate binding has become an additional criterion for the identification of a putative neuromodulator.

The present volume, edited by three of Snyder's research associates, appeared in its first edition in 1978 and immediately became a "must" for both practioners and observers of this technique. The second edition, consisting of nine chapers, like the first, wisely ignores the ephemeral and concentrates on seminal issues. The chapters, with authors in parentheses, are: Receptor theory (Hollenberg); Criteria for receptor identification (Burt); Methodology (Bennett and Yamamura); Peptide binding assays (Hanley); Voltage-sensitive sodium channels (Catterall); Biochemistry and cell biology of receptors (Lindstrom); Quantitative autoradiography (Kuhar); Radioreceptor assays (Enna); and Drug Screening (Creese).

The chapters by Catterall and Hanley are somewhat less comprehensive than the others. While Catterall's is an excellent review of sodium channels, it tends to ignore other cation channels that are amenable to labeling by ligand binding techniques. Certainly, voltage-sensitive calcium channel(s) are among the most intensively studied in the cardiovascular area at the present time and do deserve mention. Hanley's chapter is surprisingly slim for such an important area of pharmacology, one of the few to have its own journals. The area is technically complex and while Hanley points out (p 96, paragraph 3) the problems associated with determining nonspecific binding for peptides, the key, magic phrase, "isotope dilution" is absent. The issues related to the kinetics of peptide ligand binding (Pliska, *J. Receptor Res.* **1983**, *3*, 227) are also inadequately covered.

Overall, however, this volume is a worthy successor to its predecessor, and the editors are to be complimented on the clarity and consistency of the contents.

As the technique of receptor binding encompasses more and more biological "catalysts" including enzymes (Captopril labeling of angiotensin converting enzyme) and putative second messengers (phorbol ester labeling of protein kinase C), the usefulness of "Neurotransmitter Receptor Binding" continues to grow and assures the editors, with appropriate coverage, a healthy reception for a third edition of this indispensible volume.

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Determination of Organic Reaction Mechanisms B. K. Carpenter. Wiley, New York. 1984. xi + 247 pp. 16.5 × 24 cm. ISBN 0471-89369-2. $34.95.

The material for this book is derived from a course taught by the author at Cornell University and is chiefly written for first year graduate students in organic chemistry. Although other texts have reviewed the subject of organic reaction mechanisms, this volume uniquely covers all current experimental techniques to indirectly or directly determine likely mechanistic pathways.

Well aware of the experimental constraints inherent in mechanism investigations, Carpenter discusses in his first chapter the philosophy of scientific inquiry and proposes a protocol to minimize such limitations. Following this initial chapter, the book in turn covers isotopic labeling, chirality and stereochemistry, kinetics, isotope effects, acid–base reactions, interpretation of activation parameters, direct reactive intermediate detection, and some detailed case histories of classic mechanistic investigations. Throughout his discussion the author well references the original research literature and provides the reader with criteria and tools to choose among several proposed reaction mechanisms based on indirect evidence. However, chapter 8, which presumes a familiarity with the common techniques of organic spectroscopy, addresses the direct detection of transient intermediates. Such techniques as matrix isolation infrared spectroscopy, NMR, CIDNP, ESR and Laser methods are discussed. Equally valuable is the final chapter which covers some representative case histories in reaction mechanism investigation including the von Richter reaction, the [1,5] hydrogen migration, the thermal rearrangement of 1,5-hexadiene derivatives, the "ene" reaction of singlet oxygen, and vitamin B_{12} reactions. Five appendices listing mathematical procedures and data tables and finally a subject index conclude the book.

The text is well written, employing a style that is both informative and entertaining. Chemical structures and tables are clearly drawn and arranged, and I found no typographical errors. This timely volume should both adequately serve as a text for graduate level organic reaction mechanism courses and a useful resource to research chemists.

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Steroid Converting Enzymes and Diseases. Ed. K. Fotherby, University of London, and S. B. Pal, Universität Ulm. Walter deGruyter, Berlin and New York, 1985. ix + 261 pp. 18 × 24.5 cm. ISBN 3-11-009556-4. $81.80.

The levels of steroid hormones present in human beings of either sex at various ages are determined by their synthesis from cholesterol via well-understood pathways and their metabolism either to other hormones or to substances which are subsequently excreted. Variations in these levels normally arise depending upon the age and sex of subjects and the influence of biological rhythms. This monograph focuses upon the causes and consequences of abnormal levels of steroid hormones, which usually arise from pathological processes which may manifest themselves clinically. The emphasis on clinical data and observations under pathological conditions has naturally led to a focus on organ systems rather than on hormones identified structurally, but this is an emphasis which will be illuminating to those who are accustomed to think in terms of organic chemistry, medicinal chemistry, and biochemistry. Steroid metabolism in the adrenal, the testes, the ovary, and the breast are dealt with in five chapters, while an excellent final chapter discusses sexual differentation in males as influenced by abnormal steroid synthesis, metabolism, and action. This book will be of general and particular interest to all working in the field of steroidal hormones.

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Methods in Pharmacology. Volume 6. Methods Used in Adenosine Research. Edited by D. M. Paton. Plenum Press, New York and London. 1985. xvi + 384 pp. 17 × 25.5 cm. ISBN 0-306-41872-X. $55.00.

Interest in the area of adenosine research has increased dramatically in the past 5 years now that the role of the purine as a physiologically relevant neuromodulatory agent has been firmly established. In addition to an increase in the number of original research articles, several archival volumes documenting research on this purine have been published. Since 1979 there have been four such volumes, the most recent of which, "Regulatory Functions of Adenosine" (Berne, R. M.; et al.; Martinus Nijhoff: Boston, 1983), resulted from the Second International Symposium on Adenosine held in Charlottesville, VA in 1982. The present volume is therefore the fifth in 6 years and being blessed with the uninspiring title "Methods In Pharmacology", may be considered a little excessive even for the most ardent "adenophile".

Thanks, however, to the excellent editorial capabilities of David Paton, this volume is a pleasant surprise. Consisting of 20 chapters divided into five sections: synthesis and measurement of adenosine and adenine nucleotide analogs; adenosine metabolism; adenosine transport; classification and identification of receptors for adenosine and adenine nucleotides; and physiological role of adenosine, this monograph brings together some definitive overviews that address the myriad physiological roles of the purine, focussing on metabolism as well as effects mediated via extracellular receptors. In regard to individual chapters, that by Burnstock and Buckley on receptor classification is an excellent distillation of many years of research from one of the seminal forces in the area. The usefulness of this chapter is exemplified by a two and one-half page table that is a valuable reference source including data from a wide range of tissues and techniques. Kenakin and Leighton's chapter on adenosine receptors in isolated tissues is not only a good introduction to the physiological effects of the purine but also reviews some of the more basic pharmacological techniques in a concise, easy to follow, manner. Schwabe's chapter on radioligand binding is comprehensive and objective while Jager and Hertog's on the criteria for implicating adenosine or its nucleotides in neurotransmission is both definitive and thoughtful. It is difficult to comment further without detracting from the remaining chapters, all of which are of an exceptionally high standard. While one might feel cheated in that the section on adenosine physiology is somewhat brief as is Stone's chapter on CNS receptors, as noted by Paton in his preface, volumes such as that by Berne et al., cited above, more readily fulfill this function than the present volume which is, after all, in a methodology series.

This monograph is, therefore, highly recommended to both the expert wishing to broaden his or her appreciation of the techniques in use in this area of research and to the newcomer interested in gaining a concise, objective overview of the area. David Paton and his contributors are to be commended on their sucess in producing a rarity in the field of academic publishing, a specialized hardcover that is well worth its cover price.

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Annual Review of Pharmacology and Toxicology. Volume 25. Edited by R. George, R. Okun, and A. K. Cho. Annual Reviews, Inc., Palo Alto. 1985. viii + 799 pp. 16 × 23 cm. $27.00. ISBN 0-8243-0425-X.

There is something of interest here for every pharmacologist and others as well. The subjects covered in this volume can be grouped into several convenient, though arbitrary, categories.

1. Current topics that are generating widespread attention because of their scientific or clinical importance.

(a) Phosphatidyl inositol turnover: its role in receptor functions, signal transduction, calcium mobilization and protein phosphorylation. The hydrolysis of inositol phospholipids in membranes produces two internal second messengers: inositol 1,4,5-triphosphate, which mobilizes membrane-bound calcium ions, and diacylglycerol, which activates protein kinase c. Tumor-promoting phorbol esters appear to act as analogues of diacylglycerol.

Phorbol esters are also discussed as promoters in a separate chapter that describes the role of oxygen radicals in tumor promotion. This process is blocked by protease inhibitors, antiinflammatory steroids, and antioxidants.

(b) Angiotensin converting inhibitors, both synthetic and fermentation derived. Some of the natural products are nonpeptides. This group of drugs is unusual in that their discovery and development was initiated and carried through completely within the pharmaceutical industry.

(c) The spinal administration of small doses of opiates is a new way to produce long-lasting analgesia for surgery and terminal cancer pain. Related experiments have increased our understanding of pain processing and autonomic pathways in the spinal cord.

(d) Thrombolytic therapy. There has been a surge of interest in plasminogen activators, particularly those that activate thrombus plasminogen without affecting thesubstrate in the plasma.

(f) Alternatives to animal testing. This subject is attracting much attention, both because of perceived shortcomings in toxicological assays and criticism from animal welfare organizations. This review describes some of the possibilities that are just beginning to be explored.

2. Topics that have matured to a point where a current summary is both useful and interesting.

(a) Antibiotic tolerance. β-Lactam antibiotics can stop the growth of some mutant bacteria without producing lysis. Because there is little change in the minimum inhibitory concentration (MIC), the organisms are not classified as resistant. Some of these mutants are deficient in autolysins, while others produce inhibitors of autolysin activity. Tolerant isolates are being reported with increasing frequency in patients with various infections.

(b) The role of cyclic GMP in the relaxation of vascular smooth muscle. This review ties together the evidence suggesting that organic nitrates and related direct vasodilators, as well as acetylcholine and some autocoids, produce relaxation by stimulating guanylate cyclase. The result is increased protein kinase activity and a decrease in free intracellular calcium.

(c) The chemotherapy of schistosomiasis. Effective, well-toleranted agents such as praziquantel have emerged from screening programs, but their mechanism of action is still unknown. The action of older agents such as hycanthone is gradually being revealed in terms of their metabolism and interaction with DNA.

(d) The pharmacology of eating behavior. This subject is remarkable for the growing list of neurohormones which have now been shown to modulate feeding behavior by acting on the CNS. Most of them suppress feeding, but opioid peptides and neuropeptide Y are potent stimulants.

(e) Steroid hormone action. Steroid–receptor complexes appear to stimulate transcription by binding to promoter regions of DNA. A separate chapter deals with antiinflammatory actions of steroids in allergic diseases. Liposomal stabilization is no longer considered a valid explanation. There is growing evidence for the induction of proteins that inhibit phospholipases, thereby preventing the release of arachidonic acid. In addition, the glucocorticoids increase the sensitivity of beta receptors to adrenergic agonists.

3. Topics that are off the beaten track.

(a) Drugs and exercise. This review deals mainly with effects of cardiovascular drugs, anabolic steroids, and stimulants on stress testing and training capability. A separate but related chapter considers the effects of general anesthetics, hypnotic and narcotic drugs on respiration in man.

(b) Clinically desirable drug interactions. With so much attention being paid to harmful interactions, it is refreshing to be reminded of beneficial ones, such as antibiotic combinations or the use of potassium-sparing and potassium-losing diuretics.

(c) Breast milk/plasma drug ratios. Pitfalls to be avoided in calculating the drug intake of nursing infants are emphasized here. Ratios are not necessarily constant over time and are affected by fat content and the formation of metabolites that can displace bound drug from milk proteins.

(d) Drugs in the lung. In addition to clearing endogenous substances such as polypeptides and vasoactive amines, the lungs can accumulate antihistamines, tricyclic antidepressants, and other drugs that are amphiphilic amines. Many of the reactions of drug metabolism that occur in the liver are also found in the lung.

4. Mysterious and challenging subjects. This category includes a good sampling of toxicological problems.

(a) The chapter on acrylamide axonopathy emphasizes how little is yet known about the mechanism involved.

(b) Formaldehyde toxicity. Here, too, the mechanisms are uncertain, but there is a pressing need to gauge the carcinogenic risk of different exposures. The accuracy of estimates is increased by taking into account the amount of formaldehyde that is actually bound covalently to DNA.

(c) The review of toxin-associated male reproductive dysfunction illustrates the difficulty of defining the possible hazards of environmental chemicals. It also suggests that greater attention to be paid to the presence and possible toxic effects of chemicals in semen.

(d) Aldose reductase inhibitors. One toxic effect of elevated blood glucose concentrations in diabetic patients appears to be the increased conversion of glucose to sorbitol. The osmotic action of accumulated sorbitol produces cataracts and may also contribute to diabetic neuropathy and retinopathy. Inhibitors of aldose reductase may slow the development of these complications in both diabetes and galactosemia.

(e) Regulation of hepatic glutathione. This tripeptide appears to play an important role in the detoxification of both endogenous oxygen radicals and external toxins. The review illustrates the complexities of the metabolic cycling and interorgan transport of glutathione.

(f) Opioids and intestinal propulsion. There are both peripheral and central components in the constipating actions of opiates. The combination of peripherally active antagonists with centrally active analgesics may reduce this undesirable side effect. There is a need for more specific receptor probes.

This need is addressed in a separate review which describes new photoaffinity and electrophilic affinity labels for narcotic receptors.

The prefatory chapters on clinical pharmacology and perspectives in toxicology point up the progress in various forms of drug testing during the past quarter century, as well as the problems. A recurring theme is the growing involvement of both industry and government in influencing the many ways in which drugs and poisons affect our daily lives.

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Cholinesterases. Fundamental and Applied Aspects. Edited by M. Brzin, E. A. Barnard, and D. Sket. DeGreyter, Berlin. 1984. 527 pp. 198 DM.

In about 1958 W. N. Aldridge told me that he was quitting work on cholinesterases because all the basic work had been done. This book is a reminder of how wrong he was; an enormous amount has been discovered in recent decades on this venerable enzyme system, and yet many puzzles remain. Even the basic structure remains known only in outline, and here is a 1984 book, characterized by having an excellent selection of world experts, which tells us that the data on amino acid sequence is still extremely limited, and that the startling morphological differences in the multiple forms of the enzyme which Massoulie showed in 1969 are still being argued about and their implications are unclear.

This book reports on a 1983 conference of 140 experts and reprints 34 of the papers given. The contributors are well chosen, and there is a much fuller representation of East European scientist than in most publications. It is therefore authoritative and representative. An attempt has been made to lessen the inevitable fragmentary character, in part by grouping into functional topics (chemical composition; molecular forms; localization and transport; diseases; anticholinesterases; and neurotoxicity). But as usual with experts, each follows his own drum. Some present new data, some collect data from recent published studies, some provide a sort of "Annual Review" article without data. Brief introductions to each functional topic do little to unify; they average one page each. Several papers are simply misclassified; thus Magazanik's paper on electrophysiological estimates of enzymes excess is placed in a section on multiple molecular forms.

A good feature is that the extraordinary diversity of work on this system is illustrated, and most readers will find something new. The first two sections on composition and structure, including multiple forms, are particularly good in this regard. Consequently researchers active in the field will broaden their knowledge and add to their perspective. The book cannot be recommended for others. A major problem is that the chapters are completely unarticulated, either by preselection of subject matter or by provision of overviews at the meeting or subsequently. It would have been far more satisfying to readers to have substantial chapters which take a whole area and provide a perspective of what we know and do not know, followed by a series of research papers providing the hottest up-to-day findings.

Some topics are omitted. There is nothing about insect acetylcholinesterase or about the variants of the enzyme found in resistant strains of insects. Much more could have been given on the contribution to understanding of acylation reactions provided by new kinetic techniques. There is virtually nothing about developmental aspects and precious little about comparative perspectives.

In summary this book is filled with interesting material. It provides all the pleasures and annoyances of a conference: the discovery of valuable nuggets of understanding, an acquaintance with many authors of whom some are not well published in the U.S., and a sense of the great diversity of approaches and understandings of what at one time seemed a fairly simple enzyme system. But, like any conference in which integration is not strongly imposed, it gives an erratic and scattershot account which experts will enjoy but which will vex the uninitiated.

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Books of Interest

Clinical Experiences with Budipine in Parkinson Therapy. Edited by F. Gerstenbrand, W. Poewe, and G. Stern. Springer-Verlag, New York. 1985. xi + 213 pp. 16.5 × 24 cm. ISBN 0-387-13764-4. $26.50.

Advances in Inorganic Biochemistry, Volume 6. Elsevier, Amsterdam. 1985. xv + 372 pp. 15.5 cm × 23.5 cm. ISBN 0-444-00825-X. $55.00.

Organic Synthesis. Volume 63. Wiley, New York. 1985. xvii + 291 pp. 15.5 cm × 23.5 cm. ISBN 0-47182940-4. $27.50.

Methods of Biochemical Analysis. Volume 31. Wiley, New York. 1985. viii + 541 pp. 16 cm × 23.5 cm. ISBN 0-471-82177-2. $64.95.

Selective Toxicity. The Physico-Chemical Basis of Therapy. 7th Edition. Chapman and Hall (Methuen, Inc.), London, 1985. xii + 750 pp. 15.5 cm × 23 cm. ISBN 0-412-26020-4, $34.95 pbk., $69.96 hdbk.