

## Book Reviews

**Handbook of Enzyme Inhibitors.** By Helmward Zollner. VCH Publishers, Cambridge. 1989. xi + 440 pp. 20 × 27 cm. ISBN 0-89573-860-0. \$126.00.

In this handbook more than 5000 inhibitors for about 1000 enzymes are catalogued. There are four listings. In the Enzyme → Inhibitor List, enzymes are listed alphabetically. For each entry the name and EC number for the enzyme are given. This is followed by the name of the inhibitors, type of inhibition, effective inhibitor concentrations or  $K_i$  values, some comments, and a reference to each inhibitor cited. In the Inhibitor → Enzyme List, inhibitors included in the handbook are listed alphabetically along with the enzyme they affect, the type of inhibition (competitive, noncompetitive, uncompetitive, mixed, partial competitive, irreversible, or suicide substrate) and the effective concentrations or  $K_i$  value. In the Common → Systematic Inhibitors Names List, the common names as used in this handbook are listed alphabetically followed by the longer, more definitive systematic name. Lastly, an EC Numbers List presents the EC number of enzymes catalogued in the handbook in ascending order together with the recommended name of the enzyme.

Among a small sampling of enzymes, e.g., dopamine- $\beta$ -monoxygenase and phenylethanolamine *N*-methyltransferase, many reported inhibitors were not referenced. Nevertheless, this handbook is a useful reference source for inhibitors of a large number of enzymes. Library access may be helpful to medicinal chemists as they pursue new enzyme inhibitors; however, in many instances it will be possible to use the small number of references provided only as a starting point to begin a comprehensive survey of the enzyme inhibitor literature.

Staff

**Fieser and Fieser's Reagents for Organic Synthesis. Volume 32.** Edited by Mary Fieser. Wiley Interscience, New York. 1989. 386 pp. 16 × 23.5 cm. ISBN 0-471-50400-9. \$45.00.

The 14th volume in this well-known series covers the reagent literature published from mid-1986 through mid-1988. The format, so well accepted in the previous volumes, continues with the concise descriptions, structural formulas, and examples of applications, providing references to new reagents as well as to reagents included in previous volumes. An author and subject index are included in this volume. It is interesting to note that from volume 1, which included 1475 pages in 1967, the size of these volumes is gradually decreasing (volume 12 (1986) 643 pp, volume 13 (1988) 472 pp, and the present volume 386 pp). Does this reflect a slowing down of research in organic chemistry? These volumes remain essential reference works for serious organic chemists and should be available in all technical libraries.

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**Name Reactions and Reagents in Organic Synthesis.** By Bradford P. Mundy and Michael G. Eller. Wiley-Interscience, New York. 1988. xii + 546 pp. ISBN 0-471-83625-5. \$42.95.

In this book are collected almost all common named reactions and reagents utilized in organic chemistry. The named reactions are presented in alphabetical order. Following the name of the reaction there are presented a general reference to the page (if available) on which the reaction is described in March's *Advanced Organic Chemistry*, the general scheme of the reaction, its mechanism, notes of importance related to the reaction, a list of references that describe the utilization of the reaction, and examples with conditions and yields that are described in the cited references. Following such a detailed outline of about 115 such

reactions, 46 other reactions are described by only name and a schematic example.

The second section of the book presents information relating to the most commonly used reagents in organic chemistry. The format is very much like that for the named reactions. Again the reagents are listed in alphabetical order. After the reagent name, structure and physical properties of the reagent are given. Following this, references to the reagent in *Fieser's Reagents for Organic Synthesis* or to the location of this reagent in March's *Advanced Organic Chemistry* are presented. Next, the major uses of the reagent, its preparation, precautions to be observed in its use, and important notes and literature references, followed by schematic outlines of the reagent's use in the cited references, are outlined. About 250 reagents are described in this manner.

An adequate subject index is included in this book which should serve as a useful reference source to common named reactions and reagents in organic chemistry, although much of the material covered is available in other commonly used chemistry books.

Staff

**Medicine, Literature & Eponyms. An Encyclopedia of Medical Eponyms Derived from Literary Characters.** By Alvin E. Rodin and Jack D. Key. Robert E. Krieger Publishing Company, Malabar, FL. 1989. xxii + 345 pp. 18.5 × 26 cm. ISBN 0-89464-277-4. \$39.50.

Have you ever wondered where strange medical names, often derived from mythology, came from? The present book tells stories and gives historical facts of 350 such names and thereby offers a synopsis of medical history and medical terminology. The stories are based on traditional tales, ancient accounts of puzzling maladies, surprisingly up-to-date references, and rational explanations. Richly illustrated by pictures of paintings, drawings, and statuary, and by modern photographs of weird anatomical defects and often gruesome conditions, the book makes for absorbing reading and leisurely learning about little-known connections of myth and medicine. Your vocabulary will be enriched, your imagination stimulated, and some of the stories will perhaps make your spine tingle with disgust or with amusement. This is not a book for scientific enrichment but for enhanced cultural appreciation of the medical troubles of the human race.

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Alfred Burger

**Organic Reactions. Volume 37.** Edited by Andrew S. Kende. John Wiley and Sons, New York. 1989. xix + 588 pp. ISBN 0-471-50169-7. \$75.00.

The present volume of this classic series presents critical discussions of two important reactions, Chiral Synthons By Ester Hydrolysis Catalyzed by Pig Liver Esterase and The Electrophilic Substitution of Allylsilanes and Vinyl Silanes. These chapters live up to the high standard established in earlier volumes. The subjects are expertly presented from a preparative viewpoint with particular attention to limitations, interfering influences, effects of structure, and the selection of experimental techniques. Each chapter includes several detailed procedures illustrating significant modifications of the method as well as tables that list all known reports of the reaction. These examples and tables enable a chemistry researcher employing the reaction to proceed without further search of the literature. The material covered is very thoroughly referenced. The chapters are organized in a manner that enables facile location of the subject matter. Thus, a subject index is not needed. Cumulative chapter titles by volume are presented for the entire *Organic Reactions* series. In addition,

an author index plus a chapter and topic index for Volumes 1-37 are included.

This volume, along with its predecessors, is a must for all chemistry libraries.

Staff

**ACS Symposium Series. 413. Probing Bioactive Mechanisms.** Edited by Philip S. Magee, Douglas R. Henry, and John H. Block. American Chemistry Society, Washington, D.C. 1989. x + 414 pp. 16 × 23.5 cm. ISBN 0-8412-1702-5. \$59.95.

This book was developed from a symposium sponsored by the Division of Agrochemicals at the 196th National Meeting of the American Chemistry Society, Los Angeles, CA, September 25-30, 1988. It focuses on two major theses. The first of these is that medical, agrochemical, and toxicological problems have common molecular mechanisms. The other is that computational chemistry combined with structure-activity relationship studies (SAR and QSAR) can be utilized to draw mechanistic references in these fields.

The volume consists of 24 chapters divided into five sections, namely, Views of the Field, which overviews the design of bioactive materials; Ways and Means, which describes new tools for the investigation of bioactive mechanisms; and three sections (Agrochemical, Drug, and Toxicity Mechanisms) that provide specific examples of new techniques useful in elucidating the mode of action of agrochemicals, drugs, and toxic substances.

All chemists interested in drug design will find subjects of interest in this book, especially in the section on drug mechanisms. Here excellent chapters address, principally from a QSAR standpoint, adenosine, serotonin, and  $\gamma$ -aminobutyric acid receptor subtype actions, parathyroid hormone antagonists, cytotoxic mustards, and antibacterials based on nalidixic acid. The book will be of value to many medicinal chemists, especially those concerned with modern methods of drug design.

Staff

**Antiepileptic Drugs. Third Edition.** Edited by R. H. Levy, F. E. Driefuss, R. H. Mattson, B. S. Meldrum, and J. K. Penry. Raven, New York. 1989. xxvii + 1025 pp. 18.5 × 26 cm. ISBN 0-88167-539-3. \$125.00.

Seventy-two chapters by 79 experts in the area of anticonvulsant drug therapy are assembled in this handsome and relatively modestly priced volume.

A highly useful introductory "General Principles" section has chapters on drug absorption, distribution and elimination (ADME), biotransformation, and toxicology. The principles of anticonvulsant action, aspects of clinical testing, selection and application of therapy as well as criteria for discontinuation comprise the remainder of this section.

In the remaining sections, 18 antiepileptic drugs or drug classes currently in use, phenytoin, mephenytoin and ethotoin, phenobarbital, methylphenobarbital and metharbital, primidone, carbamazepine, valproate, ethosuximide, methsuximide, trimethadione, the various benzodiazepines (diazepam, clonazepam, nitrazepam, clorazepate, clobazam and lorazepam), sulfonamides, bromides, paraldehyde, progabide, and ACTH are discussed in systematic detail. Of these, phenytoin, phenobarbital, primidone, carbamazepine, valproate, and ethosuximide each have a full section including chemistry and methods of determination, ADME, biotransformation, interactions with other drugs, clinical use, and toxicity. This layout gives a useful overview of the various aspects of the drug development process, and from the various issues related to the compounds cited it can be used to develop a generic appreciation of taking a drug from the bench to the clinic.

The book finishes with seven chapters on "potential" antiepileptic drugs (oxcarbazepine, gabapentin, vigabatrin, lamotrigine, stiripentol, flunarizine, and felbamate) and a highly useful appendix with the structures of the drugs mentioned.

While three of the newer mechanistic areas of anticonvulsant drug research, *N*-methyl-D-aspartate receptor complex modulators, adenosine agonists and GABA uptake inhibitors, are unfortunately covered in a very superficial manner or not at all, this volume

represents an indispensable compendium to researchers in this area.

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**Neuropeptide Y.** Edited by V. Mutt, K. Fuxe, T. Hokfelt, and J. M. Lundberg. Raven, New York. 1989. xix + 353 pp. 16 × 24 cm. ISBN 0-88167-556-3. \$125.00.

At first glance, the present volume, containing 31 chapters resulting from a meeting held under the auspices of the Karolinska Institute in August 1988, may appear to be yet another in an ever increasing number of ephemeral camera ready monographs. The latter are characterized by being hastily thrown together following a conference and are usually singularly lacking in useful informational content, cohesion, and originality. Fortunately for the reader interested in neuropeptide tyrosine (NPY), the only thing in common with such publications is appearance.

While there is an inevitable repetition in the introductory statements for each chapter, this volume is a comprehensive and substantial overview of NPY for both the novice and active researcher in the area. Discovered in the early 1980s in pig brain, NPY, a member of the pancreatic polypeptide-fold proteins has been extensively studied in the last 8 years. The structure, expression, and distribution and cotransmitter role of NPY are well-documented in this volume as is the characterization of NPY receptors and the functional role of the peptide both in terms of second messenger systems and physiological/pharmacological actions.

Evidence is presented for the existence of  $Y_1$  and  $Y_2$  receptors and their structure-activity relationships in vitro. The role of NPY in feeding, drinking, blood pressure regulation, anxiety, depression, and memory is discussed in relation to animal studies. Studies in postmortem human brains raise the inevitable potential of a role for NPY in central nervous system neurodegenerative disorders including Alzheimer's Disease and Huntington's Disease. One chapter of especial interest is that by Goldstein and Deutch, who discuss NPY in relation to a "hierarchy of neuronal coexistence" theory.

Inevitably the cost of this volume will preclude its ownership by the majority of interested readers. Nonetheless, it is to be recommended as a balanced and informative source on all things NPY-related.

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**Chiral Separations by HPLC. Applications to Pharmaceutical Compounds.** Edited by A. M. Krstulovic. Ellis Horwood, Chichester. 1989. 548 pp. 17 × 24.5 cm. ISBN 0-470-21299-3. \$119.00.

Several books addressed to the chromatographic resolution of enantiomers are currently available. The present volume is, however, a useful addition to this rapidly growing library, for a number of reasons. Not least of these is the list of contributing authors, each chapter being written by a worker well-recognized in the particular area under discussion. This certainly lends an air of authority to many of the chapters. The book also benefits by the decision to limit subject matter to one of the most important areas of application of chiral HPLC, viz. to compounds of pharmaceutical interest. Confusing and irrelevant extraneous material is thankfully minimal.

The book is organized into three sections, these covering "Principles" (comprised of four chapters), "Chiral Mobile Phase Additives" (three chapters), and "Chiral Stationary Phases" (a further ten chapters). Section one ("Principles") is primarily devoted to a basic exposition of the possible consequences of drug chirality in biological systems, although a rather incongruous chapter on optical resolutions by crystallization techniques is also included here. This first section (although undoubtedly interesting) is the weakest of the book and will be of limited use to most workers. Happily, the remaining two sections, devoted to

specific examinations of analytical methods or approaches, are far stronger.

Section two is concerned with the use of chiral mobile phase additives, an important, and often ignored, alternative to the use of chiral stationary phases. Chiral ternary complexation, ion-pairing, and the use of cyclodextrins as mobile phase additives are examined in depth and with authority. The third and final section of the book, which forms the bulk of the work is devoted to the use of HPLC chiral stationary phases, particularly in the resolution of drug enantiomers. Chapters are included on most of the important types of chiral stationary phase available, along with useful chapters of a more general nature on the principles of chiral recognition, column selection, and possible future trends in this area. An omission in this section, particularly with the book's pharmaceutical bent in mind, is the lack of a discussion of the second generation  $\alpha_1$ -acid glycoprotein column, which is currently gaining increasing favor in bioanalytical applications.

In summary, this book provides a concise and comprehensive reference to the HPLC chiral resolution of bioactive species. It is cleverly pitched, so that it would be useful to workers both experienced in the resolution of enantiomers by HPLC and those approaching the problems associated with this area for the first time. Each chapter is well referenced, and the literature cited often timely, with respect to the date of publication.

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#### Books of Interest

**Carbon Disulphide in Organic Chemistry.** A. D. Dunn and W.-D. Rudolf. John Wiley & Sons, Inc., NY. 1989. x + 389 pp. 17 × 24.5 cm. ISBN 0-470-21441-4. \$89.95.

**Organic Synthesis. Volume 67 1989.** Bruce E. Smart. John Wiley & Sons, Inc., NY. 1989. xix + 289 pp. 16 × 23.5 cm. ISBN 0-471-51379-2. \$34.95.

**Epstein-Barr Virus and Human Disease. 1988, The State of the Art in EDV Research.** D. V. Ablashi, A. Faggioni, G. R. F. Krueger, J. S. Pagano, and G. R. Pearson. The Humana Press, Inc., NJ. 1989. xxvii + 522 pp. 16 × 24 cm. ISBN 0-89603-165-9. \$84.50.

**Organic Chemical Nomenclature. Introduction to the Basic Principles.** Philipp Fresenius. John Wiley & Sons, Inc., NY. 1989. 294 pp. 17.5 × 24.5 cm. ISBN 0-470-21098-2. \$69.95.

**Neuromethods 16. Molecular Neurobiological Techniques.** Alan A. Boulton, Glen B. Baker, and Anthony T. Campagnoni. The Humana Press, NJ. 1989. xviii + 295 pp. 16 × 23.5 cm. ISBN 0-89603-140-3. \$59.50.

**Hepatic Encephalopathy. Pathophysiology and Treatment.** Roger F. Butterworth and Gilles Pomier Layrargues. The Humana Press, NJ. 1989. xix + 621 pp. 16 × 23.5 cm. ISBN 0-89603-164-0. \$89.50.

**Molecular Mechanisms of Alcohol Neurobiology and Metabolism.** Grace Y. Sun, P. Kevin Rudeen, W. Gibson Wood, Yau Huei Wei, and Albert Y. Sun. The Humana Press, NJ. 1989. xiv + 397 pp. 16 × 24 cm. ISBN 0-89603-170-5. \$74.50.

**Elementary Polarization Spectroscopy.** Erick W. Thulstrup and Joseph Michl. VCH Publishers, NY. 1989. 167 pp. 16 × 24 cm. ISBN 0-89573-755-8. \$35.00.

**Organic Reactions. Volume 27.** William G. Dauben. Robert E. Krieger Publishing Co., Inc., FL. 1982. v + 405 pp. 15.5 × 23.5 cm. ISBN 0-89874-887-9. \$53.50.

**Organic Reactions. Volume 28.** William G. Dauben. Robert E. Krieger Publishing Co., Inc., FL. 1982. v + 343 pp. 15.5 × 23.5 cm. ISBN 0-89874-888-7. \$53.50.

**Organic Reactions. Volume 31.** William G. Dauben. Robert E. Krieger Publishing Co., Inc., FL. 1984. v + 376 pp. 15.5

× 23.5 cm. ISBN 0-89464-387-8. \$53.50.

**Molecular Spectra and Molecular Structure. Vol. 1. Spectra of Diatomic Molecules.** Robert E. Krieger Publishing Co., Inc., FL. 1950. xv + 660 pp. 16 × 23.5 cm. ISBN 0-89464-268-5. \$54.50.

**Telegen Reporter Annual 1988.** R. R. Bowker, R. R. Bowker. NY. 1989. xvii + 709 pp. 22 × 28.5 cm. ISBN 0-8352-2646-8. \$395.00.

**Statistical Methodology in the Pharmaceutical Sciences. Vol. 104, Statistics: Textbooks and Monographs.** Donald A. Berry. Marcel Dekker, Inc., NY. 1990. viii + 578 pp. 16 × 23.5 cm. ISBN 0-8247-8117-1. \$125.00.

**Safety Requirements for Contraceptive Steroids.** F. Michal. Cambridge University Press, NY. 1989. xv + 467 pp. 18 × 25.5 cm. ISBN 0-521-35459-5. \$110.00.

**Rodd's Chemistry of Carbon Compounds. 2nd Edition. Vol. IV, Heterocyclic Compounds. Part IJ: Six-Membered Heterocyclic Compounds with Two Hetero-Atoms from Group V of the Periodic Table: the Pyridazine and Pyrimidine Groups, the Pyrazine Group, Phenoxazine, Phenothiazine, Phenazine, and Sulphur Dyes, Six-Membered Heterocyclic Compounds with Three or More Atoms.** M. F. Ansell. Elsevier Science Publishers, The Netherlands. 1989. xxii + 552 pp. 16 × 23 cm. ISBN 0-444-87322-8. \$289.50.

**Supplements to the 2nd Edition of Rodd's Chemistry of Carbon Compounds. Vol. IV, Heterocyclic Compounds. Part K: Heterocyclic Compounds: Six-Membered Heterocyclic Compounds with Two or More Hetero-Atoms One or More of Which Are from Groups II, III, IV or VII of the Periodic Table. Heterocyclic Compounds with Seven or More Atoms in the Ring.** M. F. Ansell. Elsevier Science Publishers, The Netherlands. 1989. xxii + 626 pp. 16 × 23 cm. ISBN 0-444-87399-6. \$294.75.

**The Physiology and Biochemistry of Cestodes.** J. D. Smith and D. P. McManus. Cambridge University Press, NY. 1989. xi + 398 pp. 15.5 × 23.5 cm. ISBN 0-521-35557-5.

**Math/Chem/Comp 1988 - 63. Proceedings of an International Course and Conference on the Interface between Mathematics, Chemistry and Computer Science.** Dubrovnik, Yugoslavia, 20-25 June 1988. A. Graovac. Elsevier Science Publishers, The Netherlands. 1989. xvi + 572 pp. 17 × 24.5 cm. ISBN 0-444-88009-7. \$223.75.

**Human Physiology. Second, Completely Revised Edition.** Robert F. Schmidt and Gerhard Thews. Springer-Verlag New York, Inc., NJ. 1989. xviii + 825 pp. 20 × 27.5 cm. ISBN 0-387-19432-0. \$79.00.

**Handbook of the Hemopoietic Microenvironment.** Mehdi Tavassoli. The Humana Press, NJ. 1989. xxii + 453 pp. 16 × 23.5 cm. ISBN 0-89603-147-0. \$79.50.

**Carbon-13 NMR of Flavonoids.** P. K. Agrawal. Elsevier Publishers, The Netherlands. 1989. xvi + 564 pp. 17 × 24.5 cm. ISBN 0-444-87449-6. \$184.25.

**Journal of Bioluminescence and Chemiluminescence. Studies and Applications in Biology. Proceedings of Vth International Symposium on Bioluminescence and Chemiluminescence, September 1988.** M. Pazzagli, E. Cadenas, L. J. Kricka, A. Roda, and P. E. Stanley. John Wiley & Sons, NJ. 1989. vi + 646 pp. 20.5 × 26.5 cm. ISBN 0-471-92264-1. \$154.00.

**Methods for Investigating Nucleo-Cytoplasmic Transport of RNA.** Heinz C. Schroder, Michael Bachmann, and Werner E. G. Miller. VCH Publishers, NY. 1989. 156 pp. 17.5 × 24.5 cm. ISBN 0-89574-296-9. \$45.00.

- The Chemist's Ready Reference Handbook.** Gershon J. Shugar and John A. Dean. McGraw-Hill Publishing Company, NY. 1989. xiv + 640 pp. 16 × 23.5 cm. ISBN 0-07-057178-3. \$76.50.
- Mycotoxins, Taxonomy and Pathogenicity (Topics in Secondary Metabolism 2).** J. Chelkowski. Elsevier Science Publishers, The Netherlands. 1989. xii + 492 pp. 17 × 24.5 cm. ISBN 0-444-87468-2. \$171.00.
- General and Synthesis Methods. Volume 11. A Specialist Report. A Review of the Literature Published in 1986.** G. Pattenden. Royal Society of Chemistry, U.K. 1989. xiii + 700 pp. 15 × 22.5 cm. ISBN 0-85186-924-6. \$260.00.
- Animal Cell Culture. Methods in Molecular Biology. Volume 5.** Jeffrey W. Pollard and John M. Walker. The Human Press Inc., N.J. 1989. xiv + 713 pp. 18.5 × 26.5 cm. ISBN 0-89603-150-0. \$69.50.
- Physical Methods of Chemistry. Second Edition, Volume IIIB. Determination of Chemical Composition and Molecular Structure Part B.** Bryant W. Rossiter and John F. Hamilton. John Wiley & Sons Inc., NJ. 1989. xi + 971 pp. 16 × 24 cm. ISBN 0-471-85051-9 (V.3B). \$150.00.
- Immunosuppression and Human Malignancy.** David Naor, Benjamin Y. Klein, Nora Tarcic, and Jonathan S. Duke-Cohan. The Human Press Inc., NJ. 1989. xi + 271 pp. 16 × 24 cm. ISBN 0-89603-149-7. \$59.50.
- Analytical Profiles of Drug Substances. Volume 18.** Klaus Florey. Academic Press, CA. 1989. viii + 646 pp. 16 × 23.5 cm. ISBN 0-12-260818-6. \$69.95.
- Grant and Hackh's Chemical Dictionary.** Roger Grant and Claire Grant. McGraw Hill Book Company, NY. 1987. xiii + 641 pp. 19.5 × 24.5 cm. ISBN 0-07-024067. \$79.00.
- Biocatalysis in Agriculture Biotechnology. ACS Symposium Series 389.** John R. Whitaker and Philip E. Sonnet. American Chemical Society, Washington, D.C. 1989. x + 397 pp. 15.5 × 23.5 cm. ISBN 0-8412-1571-5. \$84.95.
- Quality Factors of Fruits and Vegetables Chemistry and Technology.** Joseph J. Jen. American Chemical Society, Washington, D.C. 1989. xii + 410 pp. 15.5 × 23.5 cm. ISBN 0-8412-1663-0. \$89.95.
- Biologically Active Natural Products. Potential Use in Agriculture. ACS Symposium Series 380.** Horace G. Cutler. American Chemical Society, Washington, D.C. 1988. xi + 483 pp. 15.5 × 23.5 cm. ISBN 0-8412-1556-1. \$89.95.
- Sodium-Calcium Exchange.** T. Jeff, A. Allen, Denis Noble, and Harald Reuter. Oxford University Press, NY. 1989. ix + 332 pp. 16 × 24 cm. ISBN 0-19-854735-8. \$36.95.
- Macromolecular Synthesis. Volume 10.** J. K. Stille. Robert E. Krieger Publishing Company, Inc., FL. 1990. ix + 110 pp. 16 × 23.5 cm. ISBN 0-89464-303-7. \$27.50.