Book Reviews

Chromatography and Separation Chemistry. Advances and Developments. Edited by Satinder Ahuja. (ACS Symposium Series 297, series editor M. Joan Comstock). American Chemical Society, Washington, DC. 1986. viii + 304 pp. 15 × 22 cm. ISBN 0-8412-0953-7. $54.95.

The volume has been developed from a symposium by the Division of Analytical Chemistry at the 188th National Meeting of the American Chemical Society in 1984. It is now about 3 years since the Meeting but the material presented in the book is by no means out-of-date. This confirms the observation that there is usually a significant delay between the time when scientific ideas are first presented and the time when regular publications start to appear in literature. Nonetheless, an earlier publication of the book would certainly be welcome.

The volume is composed of 15 chapters covering various general and detailed aspects of chromatography—mostly HPLC. From a theoretical point of view the chapter by R. J. Laub providing a model for description of chromatographic retention based on the Langmuir formalism is especially interesting. Very useful for practising chromatographers will certainly be Chapter 2 by S. D. Fazio, J. B. Crowther, and R. A. Hartwick in which a method is given of the analysis of chemically bonded stationary phase materials for reversed-phase HPLC by capillary gas chromatography. A chapter by V. L. McGuffin and R. N. Zare concerning the laser-induced fluorescence detector for microcolumn liquid chromatography will certainly merit wide interest, the more that it contains detailed discussion of the advantages and limitations of microcolumn LC. Important from technical point of view is the chapter by S. R. Abbott and H. H. Kelderman concerning properties of detectors in HPLC. The chapter by Jinno and Kawasaki is devoted to prediction of retention in reversed-phase HPLC of a set of aromatic solutes chromatographed at different binary mobile phase compositions on different hydrocarbon-bonded stationary phases. Very interesting and scientifically profound is the chapter by S. A. Tomellini et al. presenting a numerical method for the calculation of retention for gradient elution HPLC. Chapter 12 (C. H. Lochmuller and W. B. Hill) and Chapter 13 (L. J. Cline Love and M. Arunyanart) concern modifications of properties of LC stationary and mobile phases. Similarly, Chapter 15 by R. D. Smith, B. W. Wright, and H. R. Udseth on capillary supercritical fluid chromatography in combination with mass spectrometry has practical significance as does Chapter 3 by V. Rehak dealing with the dependence of column performance on the packing structure. Chapter 4 by I. Wouters et al. and Chapter 5 by J. M. Joseph describe specific applications of HPLC in pharmaceutical analysis. Reviews on HPLC detectors by I. S. Krull, on separation of enantiomers by W. H. Prikle, and on gel electrophoresis of proteins by R. P. Tracy complete the volume.

The book is well edited in general but indexing seems to be on the weak side.

Certainly this book will be of a great interest and value to researchers in the area of chromatography and its applications.

Medical Academy **Roman Kaliszan**
80-416 Gdansk
K. Marksa 107, Poland

Organic-Chemical Drugs and Their Synonyms. By Martin Negwer. VCH, New York. 1987. Three-Volume Set. viii + 2470 pp. 17 × 24 cm. ISBN 0-89573-550-4 (Set). $250.00.

This is the sixth edition of this internally recognized compendium. The book has been enlarged from 6664 chemically standardized drugs with more than 60 000 synonyms contained in the fifth edition to more than 9000 organic chemical drugs with about 80 000 synonyms in the present set, which consists of three volumes. A major improvement made in the current set is the inclusion of all "Chemical Abstracts Service Registry Numbers" (CAS Numbers) that are available. As these numbers have become international reference guides, of special value to those carrying out computer on-line searches, they are summarized in a CAS Number Register. Also, chemical names have been revised to conform with "Chemical Abstracts Index Names in the Ninth Collective Period, 1972 to 1976". Further, many additional keywords have been included for better understanding of chemical relationships between different medicines.

Volume I (viii + 816 pp) consists of a list of organic chemicals that have been used as drugs. The compounds are arranged in "Chemical Abstracts" fashion according to the molecular formula. Each compound is numbered consecutively and its structure, synonyms, medical use, and CAS number are presented. Thus, the first volume presents those compounds with molecular formulas CCl_4 to $C_{18}H_{17}NO_3$, a total of 4712 compounds. Volume II (pp 816–1654) continues in the same fashion from $C_{18}H_{17}NO_3$ to $C_{66}H_{86}N_{18}O_{12}$, i.e., compound numbers, 4713 to 9040. In Volume III (pp 1655–2470) is included a group index to facilitate finding of drugs related to each other chemically or pharmacologically. The group index also contains a "reference part" which allows one to locate the broad chemical group(s) in which each of the 9040 compounds have been placed in the group index. This section is followed by a "CAS Number Index" (which presents these numbers in numerical order with reference to the compound number), a "Synonym Index" (in alphabetical order), an "Appendix" that contains new synonyms for drugs presented in the three volumes, and finally a "List of New Drugs" (337) and recent additions to the "CAS Number Index" and "Synonym Index".

Clearly, these three volumes represent a monumental undertaking which should be valuable to all who are concerned with medicines. Most welcome is the fact that this edition, unlike its five predecessors, is written in English. I believe the author has succeeded nobly in his effort to provide an updated, dependable, and comprehensive list of organic chemical medicines and their synonyms to aid all users. I believe this is a very useful set of three volumes. Although it is probably too large and expensive for every desk, I believe that it will be a worthwhile addition to all medical and chemical libraries. Certainly, most medicinal chemists will derive benefit from ready access to these volumes.

Nova Pharmaceutical Corporation **Carl Kaiser**
Division of Medicinal Chemistry
Baltimore, Maryland 21224-2788

The Biochemical Basis of Neuropharmacology. By Jack R. Cooper, Floyd E. Bloom, and Robert H. Roth. Oxford University, New York. 1986. Fifth Edition. xi + 400 pp. 14 × 21 cm. ISBN 0-19-504036-9. $16.95 (paperback).

This is the fifth edition of this book; the previous one was published in 1982. Like its predecessors it is intended as an introductory text for those interested in the application of biochemical approaches to the study of neurotransmitter and drug actions in the CNS. Major differences from the previous edition are the addition of new chapters on molecular neurobiology and modulation of synaptic transmission. Other chapters have been revised and updated with the major aim of presenting overviews of the cellular and molecular basics of neuropharmacology, metabolism in the CNS, receptors, and various neurotransmitters, e.g., excitatory and inhibitory amino acids, acetylcholine, catecholamines, serotonin, and neuroactive peptides. The book is clearly written and very readable. It is recommended for medicinal chemists and other scientists concerned with the biochemical basis of neuronal regulatory systems in the CNS.

Nova Pharmaceutical Corporation **Carl Kaiser**
Division of Medicinal Chemistry
Baltimore, Maryland 21224-2788

Essentials of Nuclear Medicine Science. Edited by William B. Hladik III, Gopal B. Saha, and Kenneth T. Study. Williams & Wilkins, Baltimore. 1987. xix + 439 pp. 16 × 24 cm. ISBN 0-683-04051-0. $49.95.

When a radiopharmaceutical is given to a patient as part of a diagnostic study, an internal signal generator is created that produces an image which the physician uses to determine the existence, localization, and extent of disease. If the biodistribution of the administered radiopharmaceutical differs from what is considered to be the normal pattern observed in healthy individuals, the physician must rule out a number of technical errors, instrumentation problems, and alterations in the biodistribution of the radiopharmaceutical not related to the patient's disease state prior to providing a diagnosis. This book is an excellent source of current, relevant, and "essential" information for those individuals involved in nuclear medicine science who need to progress through this decision-making process. It provides invaluable supplemental knowledge which when added to the basic concepts held by physicians, technologists, nuclear pharmacists, radiochemists, medical physicists, and other scientists can help each individual in the daily consultations concerning nuclear medicine studies.

The list of 46 contributors includes many recognized experts in the fields of medicine, nuclear pharmacy, radiochemistry, health physics, and nuclear medicine technology. The resultant quality of most chapters is excellent with little material repeated from previous published texts. Especially noteworthy is the coverage of iatrogenic alterations of radiopharmaceutical biodistribution from both intentional and unsuspected concomitant drug therapy and nonpharmacologic causes found in Chapters 10, 13–18.

The text is divided into four sections including Considerations for the Clinical Use of Radiopharmaceuticals, Problems and Pitfalls Encountered with the Use of Radiopharmaceuticals, Considerations for the Preclinical and Clinical Investigation of New Radiopharmaceuticals, and Interactions Among Nuclear Medicine Health Care Professionals and Patients. The first section of the book brings together the current knowledge concerning the physical, physiological, pharmacokinetic, biodistribution, and metabolic parameters along with preparation and clinical utility of commonly used radiopharmaceuticals. Some of this information will be review material for most nuclear medicine professionals, but it is worth reading for the additional information discovered and to prepare for the remainder of the text. The remaining sections discuss all types of problems that may arise in the practice of nuclear medicine. These include the many possible causes of altered biodistribution of radiopharmaceuticals to instrumentation and procedural problems and the probable effects on the study. The material proceeds in a scientific manner from a discussion of the selection criteria, preparation, use, and normal patterns of distribution of radioactive agents through descriptions of unexpected results and explanations for their observation followed by possible mechanisms of predicting, explaining, and preventing untoward effects through interaction between health care professionals and the patient.

There are instances of overlap of material in different chapters undoubtedly due to the multiauthor format of the text. Nonetheless, there is a tremendous amount of useful information which should prove invaluable in the daily practices of all nuclear medicine professionals.

The Ohio State University Medical Center
Columbus, OH 43210

George H. Hinkle

Books of Interest

Life-Threatening Arrhythmias During Ischemia and Infarction. Edited by David J. Hearse. Raven, New York. 1987. x + 229 pp. 16 × 24 cm. ISBN 0-88167-266-1. $45.00

Advanced Biochemical Engineering. Edited by Henry R. Bungay. Wiley, New York. 1987. x + 304 pp. 16 × 24 cm. ISBN 0-471-81279-X. $42.95.

Biotechnology, Vol. 8: Microbial Degradations. Edited by W. Schonbaum. VCH, New York. 1986. x + 743 pp. 17 × 24 cm. ISBN 0-89573-048-0. $198.00.

Human Cytogenetics. Edited by D. E. Rooney. IRL, Oxford. 1986. xviii + 241 pp. 16 × 23 cm. ISBN 0-947946-713. $45.00.

Membrane Transport Driven by Ion Gradients. Edited by Giorgio Semeza. New York Academy of Sciences, New York. 1985. xii + 462 pp. 15 × 23 cm. ISBN 0-89766-307-1. $106.00.

Chromosome Structure and Function. Edited by Michael S. Risley. Van Nostrand Reinhold, Princeton. 1986. x + 246 pp. 15 × 23 cm. ISBN 0-442-27638-9. $46.50.

Genes, Proteins, and Cellular Aging. Edited by Robin Holliday. Van Nostrand Reinhold, Princeton. 1986. xiii + 333 pp. 17 × 26 cm. ISBN 0-442-23246-2. $42.50.

Cytochemistry of the Cell Surface and Extracellular Matrix During Early Embryonic Development. Edited by Esmond J. Sanders. VCH, New York. 1986. 57 pp. 16 × 24 cm. ISBN 0-89574-220-9. $33.00.

Topographic Histochemistry of the Cerebellum. Edited by Enrico Marani. VCH, New York. 1986. ix + 169 pp. 17 × 24 cm. ISBN 0-89574-221-7. $58.50.

Synthesis of Macrocycles—The Design of Selective Complexing Agents. Reed M. Izatt. Wiley, Somerset. xi + 447 pp. 16 × 24 cm. ISBN 0-471-82589-1.

Reviews of Physiology, Biochemistry and Pharmacology. P. F. Baker. Springer-Verlag, New York. 1986. 264 pp. 17 × 25 cm. 1986. ISBN 3-540-16874-5. $70.40.

Oklahoma Notes Pharmacology. Joanne I. Moore. Springer-Verlag, New York. 1987. xi + 247 pp. 21 × 28 cm. ISBN 0-387-96332-4. $12.95.

Clinical Neuropharmacology. Vol. 9, Supplement 4. William E. Bunney, Jr. Raven, New York. 1986. xxi + 596 pp. 17 × 25 cm. ISBN 0-88167-293-9. $30.00.

Chlamydial Infections. David Oriel. Cambridge University, New York. 1986. 583 pp. 18 × 25 cm. ISBN 0-521-32453-X. $59.50.

Advances in Enzymology and Related Areas of Molecular Biology. Vol. 59. Alton Meister. Wiley, New York. 1987. 483 pp. 16 × 23 cm. ISBN 0-471-88012-4. $44.95.

Some Modern Methods of Organic Synthesis. W. Carruthers. Cambridge University, New York. 1987. xii + 526 pp. 15 × 23 cm. ISBN 0-521-32234-0. $99.50.

Brain Peptides and Catecholamines in Cardiovascular Regulation. Joseph P. Buckley. Raven, New York. 1987. xviii + 429 pp. 16 × 24 cm. ISBN 0-88167-262-9. $55.00.

Brain Reward Systems and Abuse. Jorgen Engel. Raven, New York. 1987. x + 198 pp. 16 × 24 cm. ISBN 0-88167-263-7. $56.00.

Prostacyclin and Its Stable Analogue Iloprost. R. J. Gryglewski. Springer-Verlag, New York. 1987. xv + 314 pp. 17 × 25 cm. ISBN 0-387-16954-7. $53.90.

Local Anesthetics. G. R. Strichartz. Springer-Verlag, New York. 1987. xii + 292 pp. 17 × 25 cm. ISBN 0-387-16361-1. $159.00.

Metal Ions in Biological Systems. Vol. 22. Helmut Sigel. Marcel Dekker, New York. 1987. xxiii + 290 pp. 15 × 23 cm. ISBN 0-8247-7641-0. $89.75.

Mild Hypertension: From Drug Trials to Practice. T. Strasser. Raven, New York. 1987. xviii + 298 pp. 16 × 24 cm. ISBN 0-88167-247-5. $55.00.

Alzheimer's and Parkinson's Diseases. Abraham Fisher. Plenum, New York. 1986. xvi + 710 pp. 17 × 25 cm. ISBN 0-306-42232-8. $95.00.

Neuromethods. 4. Receptor Binding. Alan A. Boulton. Humana, Clifton, NJ. 1986. xxi + 584 pp. 15 × 23 cm. ISBN 0-89603-078-4. $64.50.

Heterocyclic Chemistry. Volume 4. H. Suschitzky. Royal Society of Chemistry, London. 1985. xx + 466 pp. 14 × 22 cm. ISBN 0-85186-833-9. $138.00.

Asymmetric Synthesis Construction of Chiral Molecules Using Amino Acids. Gary M. Coppola. Wiley, New York. 1987. xiii + 393 pp. 16 × 24 cm. ISBN 0-471-82874-2. $55.00.

The Biochemical Basis of Neuropharmacology. Jack R. Cooper. Oxford University, New York. 1986. xi + 400 pp. 14 × 21 cm. ISBN 0-19-504036-9. $16.95.

Theoretical Chemistry of Biological Systems. G. Naray-Szabo. Elsevier Science Publishers, New York. 1986. xiv + 504 pp. 17 × 24 cm. ISBN 0-444-42597-7. $109.25.

The Basic Science of Oncology. Ian F. Tannock. Pergamon, New York. 1987. viii + 398 pp. 21 × 28 cm. ISBN 0-08-032388-X. $37.50.

Opioid Analgesics. Alan F. Casey. Plenum, New York. 1986. xv + 518 pp. 15 × 23 cm. ISBN 0-306-42130-5. $69.50.

Advanced Biochemical Engineering. Henry R. Bungay. Wiley, New York. 1987. x + 304 pp. 16 × 24 cm. ISBN 0-471-81279-X. $42.95.

Annual Review of Neuroscience. Vol. 10. W. Maxwell Cowan. Annual Reviews Inc. 1987. ix + 716 pp. 15 × 23 cm. ISBN 0-8243-2410-2. $31.00.