

## Book Reviews

**Advances in Neuropsychiatry and Psychopharmacology. Volume 1: Schizophrenia Research.** Edited by Carol A. Tamminga and S. Charles Schulz. Raven Press, New York. 1990. xviii + 373 pp. 18.5 × 26 cm. ISBN 0-88167-675-6. \$120.00.

This book, the first in a new set of the "Advances" series, was truly a delight to read. *Schizophrenia Research* provides a wealth of information on the disorder for basic scientists, students, clinicians, or others having an interest in the subject. Tamminga and Schulz have held closely to their intent in compiling a volume outlining "area(s) of particular interest and new development... (which)... exemplify... the best in scientific direction and discoveries in explicating schizophrenia (reviewer's parentheses)".

With 120 authors contributing 35 chapters, the book is divided into five thematic sections. Part I (five chapters) focuses on the biochemistry of the disease with discussions of the role of dopamine and *N*-methyl-D-aspartate receptors, the genetics of schizophrenia, and the effects of neuroleptics at the genomic level. Part II (six chapters) forms a continuum with the first section expanding upon the neurobiology and physiology of the disorder and contains chapters on neuroplasticity (Fuxe et al.), neuropeptides (Nemeroff), the role of the limbic system (Tamminga et al.), opiates (Frost), autoimmunity (MaAllister et al.), and the merging of molecular and classical neurochemical approaches in schizophrenia research (Uhl et al.). Parts III (five chapters) and IV (six chapters) are of particular value for the nonclinical scientist since these focus on the more global aspects of disease with an emphasis on behavior, current diagnostic practices, definitions of psychosis, and specific deficits observed in patient populations. The final two sections (Part V, four chapters; Part VI, nine chapters) are certain to be of interest to the respective authors since these outline and contrast current psychosocial (part V) and pharmacological (part VI) approaches to therapy.

The content of the chapters range from summaries of specific studies to much more general discussions. Of considerable value, however, the majority of the authors end their papers with suggestions for further study, descriptions of current debate, or speculation on emerging concepts. While one may agree or disagree with the conclusions, presentation in this forum is certain to engender further thought on the subject.

By way of technical merit, the average chapter is 8–10 pages in length and each is appropriately illustrated for the subject matter. Full references are given, these are current (1990) and fairly comprehensive (ca. 40 chapters). The index (10 pp) is adequate in identifying the major contents of the book.

In sum, *Schizophrenia Research* is a useful addition to the current literature. For those wanting an update on the most recent trends, the book would certainly be worthwhile to include in their personal libraries. At the very least, it should be made a part of the departmental collection of texts.

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**Vasopressin. Colloque Inserm. Volume 208.** Edited by Serge Jard and Rex Jamison. John Libbey & Company, Ltd., London. 1991. xxx + 604 pp. 17 × 24 cm. ISBN 0-86196-288-5. \$78.00 (pbk).

This book represents the Proceedings of the Third International Vasopressin Conference held in Le Corum, Montpellier, France, August 5–10, 1990. It is composed of more than 60 review articles by eminent scientists and covers most of the areas in vasopressin and oxytocin research. Substantial progress in this research has resulted from the use of modern methodologies in molecular biology and genetic engineering. Thus, more is now known about

structure and evolution of the genes encoding for vasopressin and oxytocin precursors. Regulation of gene expression as well as expression and purification of key target molecules involved in the action of vasopressin have progressed substantially, although the molecular structure of vasopressin and oxytocin subtypes remains unknown.

Marked advances have been made toward a better understanding of the role of vasopressin and oxytocin in the central nervous system. Potent and selective agonists and antagonists of vasopressin and oxytocin have been identified and radiolabeled to enable identification and characterization of receptor subtypes and their distribution. Progress has also been made toward understanding neuronal pathways involved in the physiological aspects of vasopressin release and its actions on renal and cardiovascular functions. Interspecies differences that raise questions about classical animal models of vasopressin modulation have been clearly demonstrated. Also presented are new insights into the action of vasopressin in tubular transport in the kidney. Abnormal renal  $V_2$  receptor responses to vasopressin despite normal  $V_1$  receptor signalling in humans with congenital x-linked diabetes insipidus have been clearly established.

Finally, a number of clinical studies of the role of vasopressin in fluid and electrolyte disorders such as hypo- and hypernatremic states, congestive heart failure, and cirrhosis are evaluated.

The contents of this book emphasize the multifaceted and multidisciplinary nature of vasopressin–oxytocin research. Overall, this is a highly specialized book that will be a principal interest to researchers directly involved with vasopressin and oxytocin, although those associated in research with other neuropeptides will derive much from the comprehensive research devoted to vasopressin and oxytocin.

Staff

**Treatise on Controlled Drug Delivery. Fundamentals. Optimization. Applications.** Edited by Agis Kydonieus. Marcel Dekker, Inc., New York. 1992. xii + 553 pp. 17.5 × 25 cm. ISBN 0-8247-8519-3. \$195.00.

The development of targeted and self-regulating therapeutic systems represents the attempt of scientists to imitate processes commonly observed in nature. Natural controlled release is exemplified by the oxygenation of blood by diffusion of oxygen through alveolar walls. Newly developed controlled release systems include transdermal nitroglycerin devices which account for 500 million dollars of the angina pectoris market worldwide. New drug delivery systems, e.g. once daily oral tablets based on osmotic pressure and erodible system design, are being introduced into the marketplace at an ever-increasing rate. Clearly, drug delivery is of vital importance in therapeutics.

In this book is presented a concise, readable, and in-depth presentation of the fundamentals, applications, and optimization of controlled release systems. Applications of controlled release are described in detail. Following an introductory chapter on fundamental concepts in controlled release are chapters that treat factors influencing the kinetics of solute release, diffusion-controlled matrix systems, erodible systems, and osmotic drug delivery. The most important routes of drug administration, i.e. oral, parenteral, transdermal, and nasal, are considered in individual chapters. Very importantly, the pharmacokinetics, pharmacodynamics, and biological and biopharmaceutical parameters pertinent to each route of administration are presented for both peptide and non-peptide drugs. The final two chapters deal with drug delivery in veterinary medicine and in pesticide delivery.

Each chapter, written by experts in the area, begins with basics and progresses into the most advanced mathematical concepts. The book is thoroughly referenced so as to present the most recent literature for the expert. At the same time it is written in a

readable, basic, didactic format with solved problems and end-of-chapter problems that permit the book to be used as an educational tool. This is clearly an outstanding contribution to the science of drug delivery; however, it will naturally be of greater value to pharmaceutical chemists than to medicinal chemists.

Staff

**Chemistry of Nucleosides and Nucleotides. Volume 2.** Edited by Leroy B. Townsend. Plenum Press, New York and London. 1991. ix + 468 pp. 17 × 26 cm. ISBN 0-306-43646-9. \$95.00.

This book is the second volume in this series and provides information on recent advances in the chemistry of nucleosides and nucleotides. It is comprised of five chapters beginning with an interesting review of mesoionic nucleosides and nucleotides. This chapter covers mesoionic purine, hypoxanthine, and xanthine derivatives. Chapter 2 discusses the synthesis of disaccharide nucleosides with particular emphasis on the antibiotics. The synthesis of nucleoside mono- and polyphosphate esters is covered in chapter 3. In addition, phosphites, phosphorothioates, and phosphoramidates are included in this chapter. The biosynthetic pathways and chemical properties of each of these classes of compounds are discussed. Chapter 4 is by far the longest chapter (238 pages, 1175 references) and covers the synthesis and chemistry of heterocyclic analogues of purine nucleosides and nucleotides. A variety of five-membered ring fused to six-membered ring heterocyclic analogues are discussed with a thorough introduction presented for each class of compounds. In addition, the biochemical properties of these compounds is discussed. The subject is covered quite extensively. The final chapter deals with substrate binding of adenine nucleosides and nucleotides to various enzymes such as adenosine kinase, adenosine aminohydrolase, and adenylate and pyruvate kinases. The chapter ends with a discussion of some conformational aspects of the binding of these nucleotides to enzymes.

It appears that most of these chapters were completed in 1986. However chapters 2 and 3 contain addendums which cover advances in these areas up to 1989.

The topics in this book are very thoroughly covered and this volume is certainly an excellent addition to volume 1.

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**Methods in Molecular Biology. Volume 9. Protocols in Human Molecular Genetics.** Edited by Christopher G. Mathew. Humana Press, Clifton, NJ. 1991. x + 461 pp. 15 × 23.5 cm. ISBN 0-89603-205-1. \$69.50.

This latest book in the *Methods in Molecular Biology* series highlights the extraordinary advances that have been made in

human molecular genetics during the last 5 years. Consistent with previous volumes in this series, the major portion of the book is devoted to practical procedures covering a wide range of new methodologies in human genetics. This is particularly useful as it is often difficult for a researcher to derive details of specific techniques from the primary literature. The latter part of the book focuses on the application of these new techniques to specific research and diagnostic aims. The 33 chapters cover a broad spectrum of topics, e.g. DNA sequencing, gel electrophoresis, gene cloning and targeting, in situ hybridization of chromosomes, point mutations, molecular diagnostics for cancer, polymerase chain reaction, Southern blot technique, DNA fingerprinting, and finally one dealing with the much neglected question of the ethical implications of modern molecular genetic research.

This practical, thoroughly referenced, and indexed book provides an excellent guide for all scientists involved in the rapidly growing area of human genome studies.

Staff

#### Books of Interest

**Annual Drug Data Report. Volume XII/1990.** Edited by J. R. Prous. Prous Science Publishers, Barcelona, Spain. 1990. xvi + 1050 pp. 21 × 31 cm. ISSN 0379-4121. \$650.00.

**Pain and Central Nervous System Disease: The Central Pain Syndromes (the Bristol-Myers Squibb Symposium on Pain Research).** Edited by Kenneth L. Casey. Raven Press, Inc., New York. 1991. xiii + 290 pp. 18 × 26 cm. ISBN 0-88167-776-0. \$92.00.

**Kirk-Othmer Encyclopedia of Chemical Technology. Fourth Edition. Volume 1. A to Alkaloids.** Edited by Mary Howe-Grant. John Wiley & Sons, Inc., New York. 1991. xxxii + 1087 pp. 18.5 × 26 cm. ISBN 0-471-52669-X (vol. 1). \$250.00.

**Gas Chromatography. A Practical Course.** By Gerhard Schomburg. VCH Publishers, Inc., New York. 1990. xiv + 320 pp. 17 × 24 cm. ISBN 0-89573-889-9. \$55.00.

**Chiral Separations by Liquid Chromatography. ACS Symposium Series 471.** Edited by Satinder Ahuja. American Chemical Society, Washington, D.C. 1991. x + 239 pp. 15.5 × 23.5 cm. ISBN 0-8412-2116-2. \$59.95.

**Protein Refolding. ACS Symposium Series 470.** Edited by George Georgiou and Eliana DeBernardis-Clark. American Chemical Society, Washington, D.C. 1991. ix + 229 pp. 16 × 23.5 cm. ISBN 0-8412-2107-3. \$49.95.