

## Book Reviews

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**Fifty Years of Free Radicals.** By Cheves Walling. **In Profiles, Pathways, and Dreams.** Series Editor Jeffrey I. Seeman. American Chemical Society, Washington, D.C. 1995. xxiv + 141 pp. 15.5 × 23.5 cm. ISBN 0-8412-1830-7. \$24.95.

This is the 22nd book in the *Profiles, Pathways, and Dreams* series of autobiographies of eminent chemists edited by Series Editor Jeffrey I. Seeman. In this autobiography Cheves Walling, one of the founding fathers of radical chemistry, in a very personal way, recalls his career in chemistry from his first encounter with a chemistry set at age 9 until his present retirement in New Hampshire. His early attraction to and enthusiasm for chemistry progressed through high school and his undergraduate years at Harvard. His interest in free radical chemistry, which was undergoing major development in 1937 as he did graduate work at the University of Chicago, continued to grow through his industrial career at DuPont (1939–1943), U.S. Rubber Co. (1943–1949), and Lever Brothers (1949–1952). In 1952, he began his long-term goal of university-based basic research at Columbia University where much of his seminal research on free radical chemistry was done in the 1950s and 1960s. In 1969, disillusioned by the student revolts in the 1960s, Walling moved west to the University of Utah where he continued his research in radical chemistry. The years here included brief forays into the nonclassical ion question and cold fusion. Additionally, in 1975, Cheves Walling became Editor-in-Chief of the *Journal of the American Chemical Society*, an enormous responsibility which he continued for 7 years. Walling's involvement in the cold fusion controversy, a "bizarre and frustrating project", occupied his final 2 years at the University of Utah. The book concludes with Walling's overview of 50 years of free radical chemistry, his views regarding ethics in science, and a "final word".

This personal account contains many photographs of the author, his family, and colleagues and highlights of his career. The reader is left with an appreciation of Walling's statesman-like gentlemanly personality, his strength of character, his analytical, detached, and objective manner, and his high standard of excellence. Like other volumes in the *Profiles, Pathways, and Dreams* series, Cheves Walling's autobiography provides inspiration and encouragement for others to follow in both science and life.

Staff

JM960420S

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**Progress in Obesity Research: 7.** Edited by A. Angel, H. Anderson, C. Bouchard, D. Lau, L. Leiter, and R. Mendelson. John Libbey & Co., Ltd., London. 1996. xvi + 768 pp. 17.5 × 24.5 cm. ISBN 0-86196-532-9. £70.00.

This volume represents the proceedings of the International Congress on Obesity that was held in Toronto, Canada, Aug. 20–24, 1994. The focus of the symposium was on the causes, complications, treatment, and prevention of this major disorder of the western world. Research reported spanned a range of topics from cellular biology to population issues. A total of 106 research articles ranging from about 5 to 10 pages each comprise this volume. The articles are grouped into six sections: (I) Adipose cell biology, (II) Metabolism and energy expenditure, (III) Body composition, epidemiology and social biology, (IV) Nutrition, food intake and eating disorders, (V) Health and metabolic implications, and (VI) Prevention, management and treatment. Each article describes a specific research topic, is presented in uniform, high-quality print, and is thoroughly referenced. Complete author and subject indexes conclude the book.

*Progress in Obesity Research: 7* should serve as a source for retrieval of up-to-date information for all involved in obesity research. Institutional library access is recommended.

Staff

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**The chemistry of organophosphorus compounds. Volume 4. Ter- and quinque-valent phosphorus acids and their derivatives.** Edited by Frank P. Hartley. An Interscience Publication, John Wiley & Sons, Ltd., West Sussex, England. 1996. xiv + 945 pp. 16 × 24 cm. ISBN 0-471-95706-2. \$375.00.

Volume 4 of *The chemistry of organophosphorus compounds* completes this subject in the well-established series *The Chemistry of Functional Groups*. It covers phosphinous, phosphonous, phosphinic, and phosphonic acid compounds and their halogen derivatives  $R_2PY$ ,  $RPY_2$ , and  $R_2P(X)Y_2$ , wherein Y is halogen and X is O, S, or Se. Main emphasis is placed on the functional group and the effects it exerts on the chemical and physical properties in the immediate vicinity of the group and secondarily on the behavior of the total molecule. The book is comprised of 10 thoroughly-referenced, well-written chapters that contain a multitude of structural formulas and equations. Chapters 9 and 10, Biological activity of phosphonic and phosphinic acids and The chemistry of organophosphorus chemical warfare agents, are ones which will be of special interest to medicinal chemists.

This large and detailed volume presents a thorough compilation of information about the specified classes of organophosphorus compounds. In general, material reported in primary literature sources is emphasized. Material covered in secondary or tertiary sources, such as *Chemical Reviews* and various "Advances" and "Progress" series as well as generally available textbooks, is not as a rule repeated in detail. Thus, recent

developments are emphasized for readers assumed to be at an advanced postgraduate level. This volume is recommended for specialists in the area and for access via institutional libraries.

**Staff**

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**Adrenoceptors, Structure, Function and Pharmacology.** Edited by Robert R. Ruffolo, Jr. Harwood Academic Publisher GmbH, Distributed by University of Toronto Press, Toronto, Canada. 1995. xi + 279 pp. 18 × 25.5 cm. ISBN 3-7186-5644-2. \$95.00.

This book provides an overview of the state of adrenoceptor research as presented at a 1994 IUPHAR Congress satellite symposium on The Pharmacology of Adrenoceptors organized by Elemer Szabadi, David Bylund, and Robert Ruffolo. The text contains 35 short chapters provided by many of the leading laboratories in adrenoceptor research, organized into  $\alpha$ -1,  $\alpha$ -2, and  $\beta$  adrenoceptor sections. The meeting was especially noteworthy for the consensus it achieved in integrating molecular biology and pharmacology data on these receptors into a cohesive classification and nomenclature scheme of three subtypes within each of the three groupings ( $\alpha$ -1,  $\alpha$ -2, and  $\beta$ ). This scheme aligns the nomenclature with the known receptor genes in each mammalian genome and emphasizes the pharmacology and response data that has for years provided the organizing principles for receptor subtypes. Major themes of these chapters include the pharmacology and function of adrenoceptor subtypes and their diversity of coupling to G protein subtypes. Emphasis was also placed on molecular models of receptor structure and of the ligand/drug-binding site as obtained from site-directed mutagenesis studies, as well as on known and suspected physiological effects and therapeutic potentials of adrenoceptor agents including vascular, prostate, renal, and smooth muscle systems. The cell biology of receptor activation formed a prominent theme with chapters on receptor clustering and diffusion, compartmentalization in subcellular microdomains, and receptor internalization and desensitization upon activation. The  $\beta$ -3 adrenoceptor received special attention, in part due to its association with adipose tissues and colon and possible applications to obesity and bowel disorders. Tissue- and species-related variations in  $\beta$ -3 responses, current pharmacology, and newer selective compounds are covered.

The conference succeeded in capturing an accurate sampling of the molecular, cellular, and pharmacological diversity of current adrenoceptor research. It achieved a significant synthesis of these multiple disciplines in its receptor classification consensus, which should facilitate communication between disciplines and help integrate diverse data on adrenoceptor function. The book provides a good overview of "leading edge" research in adrenoceptors and a view of the many questions still outstanding, such as roles of subtypes, atomic interactions in the ligand site, and the cell biology of receptor cycling, that will continue to drive adrenoceptor research and the search for new therapies. Adrenoceptor research has often advanced the leading edge of our understanding of 7TM receptor structure and function. The data and topical reviews found in this book indicate that this trend is sure to continue.

In pharmacological history it has invariably been observed that a better knowledge of receptors, their subtypes, locations, and functions has led to the development of selective agonists and antagonists resulting in the introduction of novel, clinically relevant compounds. It is long overdue that new drugs based on the selective interaction with subtypes of the  $\alpha$  ( $\beta$ ) adrenoceptor will become available.

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**Books of Interest**

**Microencapsulation. Methods and Industrial Applications. Volume 73. (Drugs and the Pharmaceutical Sciences).** Edited by Simon Benita. Marcel Dekker, Inc., New York. 1996. xvi + 640 pp. 16 × 23.5 cm. ISBN 0-8247-9703-5. \$150.00.

**Hydrogels and Biodegradable Polymers for Bio-applications. ACS Symposium Series 627.** Edited by Raphael M. Ottenbrite, Samuel J. Huang, and Kinam Park. American Chemical Society, Washington, D.C. 1996. x + 268 pp. 15.5 × 23 cm. ISBN 0-8412-3400-0. \$99.95.

**Biochemical and Biotechnological Applications of Electrospray Ionization Mass Spectrometry. ACS Symposium 619.** Edited by A. Peter Snyder. American Chemical Society, Washington, D.C. 1996. xii + 601 pp. 15.5 × 23 cm. ISBN 0-8412-3378-0. \$119.95.

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