

Book Reviews

Medicinal Chemistry: A Molecular and Biochemical Approach. Third Edition. By Thomas Nogrady and Donald F. Weaver. Oxford University Press, New York. 2005. xiii + 649 pp. 16.5 × 23 cm. ISBN 978-0-19-510456 (Paperback). \$95.00.

This is the third edition of this book, and it encompasses many of the changes to medicinal chemistry and molecular pharmacology since the second edition was published in 1988. The book provides a broad overview of drug design, which has been divided into two general sections: Part I provides basic concepts of drugs, receptors, and drug–receptor interactions (Chapters 1–3); Part II provides basic concepts of drug–receptor interactions relevant to human disease (Chapters 4–9).

Among the concepts covered in Chapters 1–3 are structures and properties of drug molecules, receptor structure, classical theories of drug–receptor interactions, and drug design. A nice addition to the third edition is the appendix of 100 basic reactions for drug molecule synthesis. However, there are several errors in this section that need to be corrected.

Part II (Chapters 4–9) covers neurotransmitters, hormones, immunomodulators, and their corresponding receptors. In addition, this part covers drugs that target cellular structures, endogenous proteins and lipids, and exogenous pathogens and toxins.

On the whole, the book is well-written, easy to read, and offers a good first step toward understanding drug design and drug action. The book does not present medicinal chemistry as a “telephone book of drugs”. It is more suited for graduate students in medicinal chemistry and organic chemistry who have an interest in drug design. This book would form an excellent introductory graduate course in medicinal chemistry and drug design. Other comprehensive textbooks are likely to be of more utility for teaching medicinal chemistry to Pharm.D. students.

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Advances in Organic Synthesis. Volume 1. Edited by Attar-Rahman and Gerard Jenner. Bentham Science Publishers Ltd., Hilversum, The Netherlands. 2005. vi + 568 pp. 17 × 25 cm. ISBN 90-77527-08. \$130.00.

Advances in Organic Synthesis is a new book series designed to review important topics in the broad field of organic synthesis, and each volume will feature current thematic topics selected by each volume’s guest editor. Volume 1 is devoted to research in areas of chemical activation, and the editor has chosen many experts from Europe and Asia to review a wide range of topics. The diverse topic selection encompasses all areas of modern chemical activation methods, from those of broad interest (pressure, microwave, asymmetric reduction of carbonyls, and biocatalysis) to topics of greater interest to specialists (electro-

chemistry, catalytic antibodies, cyclodextrins, and ultrasound). Each of the 13 chapters is well-written and follows a general format of first explaining the theory and concepts related to each activation method and then reviewing the most significant examples of current advances in each subject. The average chapter length is 41 pages with 212 references; this seems adequate to cover each topic in appropriate depth for the average reader. Many of the chapters cover topics of interest to most medicinal and organic chemists, while other topics are ones many may not find useful except under special circumstances. The appeal of this diverse selection of topics is in discovering new methods for chemical activation that one may not immediately consider. The relatively high cost of the book makes it difficult to justify a personal purchase, but certainly it should be seriously considered for purchase by libraries and research groups interested in exploring new chemical activation methods. The only drawbacks of Volume 1 are its inexplicable lack of a book subtitle, table of contents, and chapter tables of contents. These oversights are especially odd considering the volume has an extensive index, and hopefully these omissions will be corrected with future volumes of this promising new series. Volume 1 is an excellent start to the Advances in Organic Synthesis series, and on the basis of the quality of this book, future titles should be ones to look for.

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Medicinal Chemistry of Bioactive Natural Products. Edited by Xiao-Tian Liang and Wei-Shuo Fang. Wiley-Interscience, Hoboken, NJ. 2006. xix + 460 pp. 16 × 24 cm. ISBN 04710660078. \$89.95.

The editors in an eloquent preface describe their text as “a book to attract graduate students and spur their interests in bioactive natural products research.” Experts in the area will also find the information contained very useful because excellent summaries of synthetic progress are presented for many celebrated compounds.

Compounds covered in the first eight chapters include the following: epothilone B and its analogues (lactams, C9–C11 area, side chain modifications, etc.); vancomycin and other glycopeptides; a comprehensive review of paclitaxel structural modifications; huperzine A (an overview of its biology, pharmacology, and the analogue ZT-1); cembranoids (sarcophytol A and B, cembrene A and C and their analogues); ginkgolide chemistry and biology; the Caulophyllum anti-HIV coumarins.

Of the final two chapters, Chapter 9 deals with plant-derived anti-HIV agents (such as the khellactone derivative suksdorfins, betulinic acid derivatives, and dibenzocyclooctadiene lignan derivatives) and Chapter 10 is a fine review of Annonaceous

acetogenins that covers the literature from 1998 through 2004. Supporting the text are over 1500 references current through 2004, numerous clearly constructed diagrams, figures, and schemes and hundreds of structures. No significant errors were noted by this reviewer. The authors are to be commended on the excellent blending of chemical, biological, and pharmacologic data. The selection of compounds from marine to microbial to mosses, herbaceous plants, and trees should further inspire graduate students seeking understanding of the breadth and importance of natural products in today's drug development

activities. This book is highly recommended to all with an interest in medicinal natural products chemistry.

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