

## Book Reviews

*J. Nat. Prod.*, **1993**, 56 (8), 1434-1434 • DOI:  
10.1021/np50098a033 • Publication Date (Web): 01 July 2004

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Journal of Natural Products is published by the American  
Chemical Society, 1155 Sixteenth Street N.W., Washington,  
DC 20036

## BOOK REVIEWS

*Asymmetric Synthesis*. Edited by R.A. AITKEN and S.N. KILENYI. Blackie Academic & Professional, Chapman and Hall, 29 West 35th Street, New York, NY 10001. 1992. xiii+233 pp. 15.5×23 cm. \$159.00. ISBN 0-7514-0059-9.

The monograph *Asymmetric Synthesis* provides a very compact and useful reference source on this topic. The first two chapters define chirality and the general terminology used to describe stereochemical processes. Of particular utility is the authors' effort to emphasize correct nomenclature and terminology while also pointing out the incorrect usage. The third chapter provides a very concise overview of the methods available for determination of enantiomeric purity. This chapter will be useful not only to beginning students in the field but also to established practitioners as a ready reference guide.

The fourth chapter reviews the sources of materials for asymmetric synthesis. The overview of first and second generation methods of asymmetric synthesis is provided in Chapter 5 and gives a good review of strategies that use chiral starting materials either directly or via auxiliary groups. It provides a guide to the major types of reactions used in this context (i.e. chiral enolates, asymmetric aldol and Michael reactions, Diels-Alder reaction, etc.). A short description of resolution methods is also included.

The sixth chapter reviews the reactions governed by reagent and catalyst control, the so-called third and fourth generation methods. Examples are provided for asymmetric catalytic alkylation, oxidation, and reduction, as well as for the asymmetric protonation and deprotonation. The last section briefly reviews enzymatic or biocatalytic methods of synthesis. The authors recognize the growing importance of this particular field, but its coverage is rather limited compared to the emphasis placed on the classical chemical methods.

The last chapter provides examples of each type of method discussed in previous chapters and places the methodology in the context of real applications. The book contains a thorough subject index.

In summary, the text provides an excellent overview of the field and would be ideal as a textbook for beginning graduate students were it not for the price of the book, a rather high \$159 for its 229 pages. Nevertheless it is an excellent source of information and one that provides for enjoyable reading.

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*Studies in Natural Products Chemistry, Volume 11. Stereoselective Synthesis (Part G)*. Edited by ATTA-UR-RAHMAN. Elsevier Science Publishers B. V., PO Box 211, 1000 AE Amsterdam, The Netherlands. 1992. xii+503. 16×24 cm. \$250.00. ISBN 0-444-89744-5.

In the latest volume of *Studies in Natural Products Chemistry*, reviews focusing on nine different classes of natural products are presented. The following topics have been surveyed: "Studies directed toward the total synthesis of the taxanes" written by L.A. Paquette, "Synthetic approaches toward antitumor quassinoids" written by T. Murae and M. Sasaki, "Biomimetic syntheses of aromatic natural products via polyketides" written by M. Yamaguchi, "Conformational control in macrolide synthesis" written by N. Nakajima and O. Yonemitsu, "Stereochemical aspects of natural product biosynthesis" written by K.A. Reynolds and H.G. Floss, "Some chiral approaches to syntheses of bioactive indolizidine alkaloids" written by C. Kibayashi, "Aristolotelia alkaloids: synthetic and biomimetic studies" written by H.-J. Borschberg, "Total synthesis of (+)-mevinolin and (+)-compactin" written by D.L.J. Clive, K.S.K. Murthy, A.G.H. Wee, J.S. Prasad, G.V.J. Da Silva, M. Majewski, and P.C. Anderson, "Synthetic studies of active forms of vitamin D and their analogs" written by T. Tachibana and M. Tsuji, "Synthesis of natural products via  $\alpha$ -halo boronic ester" written by D.S. Matteson, and lastly, "Aspects of modern higher carbon sugar synthesis" written by G. Casiraghi and G. Rassu. Most of the authors have chosen to write about their own research in the stated areas. In contrast, Paquette's and Murae and Sasaki's reviews represent timely, comprehensive efforts.

Finally, it is tempting to state that Stork's brief introductory philosophical remarks alone justify the purchase of this prohibitively priced treatise.

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