

Organic Synthesis Highlights III. Edited by J. Mulzer, H. Waldmann, Wiley-VCH, 1998, hardback. DM 138. ISBN 3-527-29500-3.

This third volume in the series of Organic Synthesis Highlights provides an overview of important current developments in the field of organic synthesis, as did the first and second volume published in 1991 and 1995, respectively. The book contains 58 brief reviews, all of them focussed on one subject and written by some 50 different principal authors, most of them working at German universities. According to the preface by the Editors the choice of the subjects is based on a selection of the "Highlights" in *Angewandte Chemie*, volumes 103-107 (1993-1997). The book is divided in two main parts. Part I (40 subjects, 260 pages) is entitled "New Methods and Reagents for Organic Synthesis" and is subdivided into four sections, viz. Asymmetric Synthesis, Organometallic Reagents, Biological and Biomimetic Methods, and General Methods and Reagents. Chapters of great current interest in this first part of the book are the ones on transition metal-promoted enantioselective opening of epoxides by Paterson and Berrisford, on asymmetric autocatalysis by Bolm, on palladium-catalyzed amination of aryl halides by Beller, on artificial replication systems by S. Hoffmann, and the chapter on solid-phase synthesis of unnatural biopolymers by Liskamp. The problem with such highly topical chapters is that the contents are already out of date at the time of publication, because of the enormous research activity and the resulting impressive progress made in these areas. Nevertheless, the information and the reference lists provided offer an excellent introduction for chemists interested in new and modern fields of organic synthesis. Part II (18 subjects, 160 pages) is entitled "Applications in Total Synthesis; Synthesis of Natural and Non-natural Products" and discusses modern target-oriented synthetic research. The most fascinating chapters are the ones on new total syntheses of strychnine by Beifuss, the chapter on the

first total syntheses of taxol by Wessjohann, and the chapter on dendrimers and similar structures by Vögtle. Although this book was published too early to include the first total syntheses of vancomycin by the groups of Evans and Nicolaou, the chapter by Burgess on "Great expectations for a total synthesis of vancomycin" offers an interesting introduction. A few chapters among the last dozen or so in the book contain less synthetic information, but mainly discuss physical, structural or biological properties of special organic systems. Examples are fullerenes, carboranes, boloamphiphiles, cyclodextrines and peptidomimetics. Although one might wonder whether these chapters fit in a book on synthetic highlights, they add a wealth of interesting information, also for the synthetic chemist. This book provides an excellent impression of the state of the art of organic synthesis. It is very useful for the individual organic chemist, either student or professional, to quickly grasp information on the relevant topics of today. In general, the chapters are written in a clear and attractive style and contain very few errors. This volume does not pay attention to the enormous current research activity in the field of olefin metathesis and the coverage of combinatorial chemistry is very limited. Furthermore, novel interesting natural products like the epothilones are not yet discussed. These topics are but a few examples to indicate the great vitality and relevance of the science of organic synthesis. The editors are advised to quickly prepare for the next volume in this series of Organic Synthesis Highlights. In any event, volume III can be warmly recommended to every individual who wants to be informed on modern developments in organic synthesis.

Henk Hiemstra, University of Amsterdam, The Netherlands

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