

Book review

New Synthetic Methodology and Functionally Interesting Compounds; edited by Z. Yoshida, (Studies in Organic Chemistry, Volume 25), Elsevier, 1986, xiv + 442 pages, ISBN 0-444-98996-x (Vol. 25), 0-444-41737-0 (Series), Dfl 395.-.

This volume derives from the proceedings of the 3rd International Kyoto Conference on New Aspects of Organic Chemistry held in Kyoto in November 1985, giving the texts of the plenary and invited lectures. The conference, and hence the lecture material, was divided into four rather distinct sections.

The first section is devoted to new synthetic methodology with an opening lecture by Barton entitled 'The Invention of New Organic Reactions'. The reactions invented were radical chain processes initiated by tributyltin or thiophenyl radicals and were elegantly applied to a number of synthetic problems. The next lecture from Semmelhack's group considers the use of carbene metal complexes in organic synthesis. This is a useful and lucid account, which will be of considerable interest to organometallic chemists. Subsequent lectures in this section deal with catalytic uses of silica gel, Friedel-Crafts reactions of aniline, stereoselective ketone reduction, uses of amides in synthesis and selective aldol reactions.

The second section of the book is devoted to biologically interesting compounds including topics such as steroid synthesis, tumour promotion, synthesis of latrunculins, vinblastine, and oligosaccharides. Structural studies are discussed by D.M. Williams, and synthetic studies using microbial metabolites, the chemistry of Cyrridina bioluminescence and the design of DNA binding molecules are also detailed. Section 3 takes us to the area of new materials, with most of the papers devoted to the synthesis of organic semiconductors and organic metals. Rather novel and unusual work is reported by Iwamura on the synthesis of polycarbenes having high spin ground states and considerable paramagnetism. The final section is a brief one, consisting of a plenary lecture from Breslow on the template-directed chlorination of steroids in a catalytic process.

Despite being printed from camera-ready manuscripts, this book is attractively produced, with few typographic errors. The index is adequate, but not particularly helpful, and was clearly not prepared by the authors. The conference clearly brought together a considerable number of chemists who may be considered to be world experts in their fields, and this fact is reflected in the quality of their contributions. It might be said that most chemists will find only one or two lectures in the book directly relevant to their own work. However, this is an excellent book for browsing. You should read it for an insight into a number of fascinating and rapidly developing areas.