

*Organometallics in organic synthesis*, edited by A. de Meijere and H. tom Dieck, Springer Verlag, 1987, vi + 320 pages, DM94, ISBN 3-540-18592-5

This book records the proceedings of a meeting held in Hamburg in February 1987, intended to make organic chemists more aware of the possibilities of the use of organometallics as reagents and catalysts in organic synthesis. This has been a growing area in recent years, and a glance at the synthetic literature certainly reveals much lively research in the field.

The book opens with two rather general reviews, the first by P. Hoffmann on theoretical aspects of C-H activation, and the second by L. Dahlenburg on practical hydrocarbon functionalisation. H. Werner then discusses the synthesis of novel metallaheterocycles by cycloaddition reactions of cyclopentadienyl-cobalt and -rhodium complexes. All these accounts will prove of great interest to the organometallic chemist, but I have some doubts of their appeal to the synthetic organic chemist, since there is little illustration of the practical synthesis of molecules of biological or medicinal significance.

Aumann's article on the use of ketimine complexes as building blocks for heterocyclic and carbocyclic compounds is a contrast in this respect, since he pursues the syntheses beyond the standard model examples, and describes the preparations of useful indoles, oxazolidines and azetidines. The chapters by Dötz on carbene complexes, by Waegell on palladium catalysed oxidations, and by Lehmkuhl on alkene insertion into metal-carbon bonds are similarly successful in demonstrating the practical applications of the reactions described. Also of considerable note are the accounts by Pauson of cyclopentenone formation from alkyne cobalt complexes, that of Kundig and his co-workers on arene chromium tricarbonyl complexes, and the review of zinc mediated preparations of  $\beta$ -lactams by Van Koten. The new hydroformylation catalysts described by Kalck should be of considerable industrial significance.

This book has been produced from the author's camera-ready manuscripts, and the quality of both presentation and diagrams is rather variable. The references to each chapter seem to be extensive, and in general run to the end of 1986. I found the lack of uniformity in presentation and the style used in several of the chapters to be rather irritating. There is no index.

The articles collected in this book are of good quality and lead me to believe that this must have been a really first-rate meeting. All will prove most interesting to organometallic chemists. The level of excitement felt by organic chemists will be more varied; I feel that they will prefer to concentrate on the articles which show real practical applications, rather than those which focus on theory or mechanism. This volume has been produced with commendable speed and at a reasonable price; I can warmly recommend it.