

Advances in Heterocyclic Chemistry, Volume 39; edited by A.R. Katritzky, Academic Press, 1986, vii + 393 pages US\$ 98.00, ISBN 0-12-020639-0.

To review a volume in the *Advances in Heterocyclic Chemistry* series in this journal might be thought to require some comment and justification. Two chapters, of substantial interest to organometallic chemists, provide ample. The first chapter in the book is a review (by J.G. Keay) of the reduction of nitrogen heterocycles with complex metal hydrides, this discussion being an update of a previous account in Volume 6 of the series in 1966. Since that time the range of available reducing agents has been very considerably expanded. This is not instantly apparent, however, when reading the text since most of the reactions involve old friends, $\text{Na}[\text{BH}_4]$ and $\text{Li}[\text{AlH}_4]$. It is notable, however, that the range of conditions under which these reagents are used today is much greater; a better understanding of the reaction mechanisms has led to considerable improvements in optimisation of reaction conditions. This material is arranged according to substrate, clearly with the heterocyclic rather than the organometallic chemist in mind.

Heterocycles in which a metal plays the part of the heteroatom are reviewed (by E. Lindner) in Chapter 5. Its scope includes compounds having at least one metal-carbon σ -bond and focusses mainly on metallocyclo-alkanes and -alkenes with and without additional heteroatoms. These species are of particular interest because they are intermediates in many transition metal catalysed organic syntheses. The chapter begins with a discussion of the methods for synthesis of metallocycloalkanes and continues with an account of their structures and physical properties. The reactivity of metallocycloalkanes is of course very different either from carbocycles or more conventional heterocycles, and the rôles they may play in both stoichiometric and catalytic reactions are considered. Metallocycloalkenes are then discussed, with accounts of their synthesis, structures, spectroscopic data and reactivity. This is an excellent review of this area, well illustrated and referenced into 1985.

Other chapters in the volume will probably be of less interest to the organometallic chemist, except possibly when he is considering ligand synthesis. They deal with Mass Spectrometry of Nucleic Acids, the Chemistry of 8-Azapurines, the Application of Aziridines to the Synthesis of Natural Products and Tricyclic Compounds with a Central Pyrimidine Ring and one Bridgehead Nitrogen.

The volume is well produced and seems relatively error-free. Whilst the diagrams have been produced by several different artists and differ somewhat in style, they are all clear and readable. There is no index as such for the volume, only a title index for the entire series. This is not a serious problem, since the chapter contents are in all cases very detailed. The price of the book is high enough to deter the individual purchaser but it is a series which a good library should certainly stock, and for organometallic chemists the chapter on metallocycles alone would amply repay a stroll into what is perhaps a less familiar part of the shelves.

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