

Book reviews

Organometallic Chemistry, Volume 17, (Specialist Periodical Report), Senior Reporters, E.W. Abel and F.G.A. Stone, Royal Society of Chemistry, 1989, £120, US\$253, xvi + 475 pages, ISBN 0-85186-651-4.

This volume of the series of Specialist periodical reports follows the well-established pattern of reviewing the literature published in one calendar year, 1987. The first two chapters, both by Dr. J.L. Wardell, deal respectively with the alkali and coinage metals, and the alkaline earths and zinc and its congeners. Whilst this grouping has some merits, I wonder if it might not now be time to consider a rearrangement, with a chapter on Groups 1 and 2, and another on Groups 11 and 12? At the least, it is time to consider using the terminology of the modern periodic table. Chapter 3, by J.W. Wilson considers boron derivatives, and Chapter 4, by T.R. Spalding, carbaboranes, including metallacarboranes. The other metals of Group 3 are reviewed by P.G. Harrison, and the silicon group by D.A. Armitage. Arsenic, Antimony and Bismuth are briefly discussed by J.L. Wardell.

With Chapter 8, by B.J. Brisdon, on metal carbonyls, we move on to transition metals. The emphasis is on synthesis and structure, rather than catalysis or surface immobilised chemistry. Although space limitations are obviously serious, I would have liked to see at least one or two figures squeezed in. The same comment applies to Chapter 9, by M.J. Went, dealing with organometallic compounds containing metal–metal bonds. Chapter 10 considers ligand substitution reactions of metal and organometal carbonyls by Group 5 and Group 6 donor ligands.

In Chapter 11, Mark J. Winter reviews complexes containing metal–carbon σ -bonds of the groups scandium to manganese, including a discussion of carbene and carbyne chemistry, and this is continued for the iron, cobalt and nickel triads by D.L. Davies. Metal π -complexes are considered by M.W. Whitely, and cyclopentadienyl and π -arene complexes by A.H. Wright. The chapter, by M. Bochmann, on homogeneous catalysis by transition metal complexes is, of necessity, extremely selective. The *Journal of Organometallic Chemistry Series on Transition Metals in Organic Synthesis* provides a much more comprehensive coverage, if from a slightly different perspective.

In Chapter 16, by D.R. Russell, a frightening 1991 structures of organometallic compounds determined by diffraction methods are listed. This is beyond doubt one of the most useful sections of the volume.

The mass of the literature to be reviewed in a volume of this type increases from year to year at an alarming rate. Since space is limited, the treatment must therefore become more compacted. Looking back at my early volumes in the series, they seem quite readable. One could not say the same of many chapters here. There is an inevitable drift towards simple records of the literature for the year, which is sad, but I fear, necessary, if the size of the books is not to get out of hand.

The volume is produced from the authors' camera ready manuscript. The quality is inevitably rather variable. I have few quarrels with the legibility of the text, though some authors could be reminded to use new ribbons. However, a number of the diagrams are very poorly reproduced (for example page 56) and some are small to the point of unreadability. A number of authors sidestep this issue by not including any diagrams, which seems a pity, in spite of space limitations.

This is a valuable volume in an excellent series, which in spite of its high price (creditably, however, the same as Volume 16, at least in the UK), libraries should continue to purchase. It represents a formidable achievement in terms of recording and reviewing an ever-increasing literature. As the data to be included increase, however, it is difficult to predict how long such a comprehensive survey can continue in its present form.

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