

## Book review

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*Organometallic Chemistry, Volume 12*; edited by E.W. Abel and F.G.A. Stone, The Royal Society of Chemistry, London, 1984, 498 pages, £82.00; \$147.00, ISBN 0-85186-601-8

This Specialist Periodical Report presents a survey of the literature on organometallic chemistry published during the calendar year 1982. The material is organized in the same way as in the earlier volumes in the series, and the chapters are as follows: Group I, The Alkali and Coinage Metals (by J.L. Wardell, 11 pages); Group II, The Alkaline Earths and Zinc and its Congeners (by J.L. Wardell, 10 pages); Boron (by J.H. Morris, 25 pages); The Carboranes, including their Metal Complexes (by J.H. Morris, 12 pages); Group III, Aluminium, Gallium, Indium and Thallium (by P.G. Harrison, 18 pages); Group IV, The Silicon Group (by D.A. Armitage, 48 pages); Group V, Arsenic, Antimony, and Bismuth (by J.L. Wardell, 6 pages); Metal Carbonyls (by B.J. Brisdon, 10 pages); Organometallic Compounds Containing Metal—Metal Bonds (by B.T. Heaton, 34 pages); Substitution Reactions of Metal and Organometal Carbonyls with Group V and VI Ligands (by D.A. Edwards, 21 pages); Sigma-Bonded Organometallic Compounds of Transition Elements of Groups IIIA—VIIA (by D.J. Cardin and R.J. Norton, 26 pages); Complexes Containing Metal—Carbon  $\sigma$ -Bonds of the Groups Iron, Cobalt, and Nickel (by A.K. Smith, 27 pages); Metal-Hydrocarbon  $\pi$ -Complexes (by J.A.S. Howell, 36 pages);  $\pi$ -Cyclopentadienyl,  $\pi$ -Arene, and Related Complexes (by W.E. Watts, 27 pages); Homogeneous Catalysis by Transition-metal Complexes (by M.E. Fakley, 25 pages); Diffraction Studies of Organometallic Compounds (by I.W. Nowell, 110 pages).

Organometallic compounds in biological chemistry are not surveyed this year; both 1982 and 1983 publications in this field will be dealt with in Volume 13.

Given the severe limitations on the space available to them, which means that the choice of papers mentioned must be somewhat arbitrary, the authors have discharged their tasks well. Certainly in the field in which I am best qualified to comment, that of compounds of the Silicon Group, the choice of papers and the amount of space devoted to each seems appropriate.

The chapter on diffraction studies is excellent, and the volume is worth its price for this alone (even though, by a lapse in taste, organosilicon compounds are excluded). I would myself, however, prefer the main list of structures to be ordered under individual metals or groups (even though this would require some extra space to take account of compounds containing more than one metal) rather than as a sequence based primarily on the numbers of carbon and hydrogen atoms. It is very rare that one would want to look up in this volume a compound one knew had been studied, and so could be found under its molecular formula. Someone wishing to see which iron compounds, for example, have been studied, is provided with about 160 numbers, and can then look each of these up in a list of 1120 entries spread over 89 pages. It is, in fact, much easier to look through every entry;

I also dislike the use of a single reference number at the end of a paragraph dealing with several distinct items from, say, four separate publications; to find the detail on one item of interest may involve looking first through three irrelevant papers.

But these are secondary matters. The volume overall is excellent of its kind, and, like its predecessors, will be much welcomed by organometallic chemists.

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*Gmelin Handbook of Inorganic Chemistry. Index. Formula Index. 1st Supplement. Volume 2. B—B<sub>1,9</sub>. Springer-Verlag, Berlin etc., 1984, ix + 229 pages. DM 750. ISBN 3-540-93482-0*

The Gmelin Formula Index published in the period 1975—1980 covered all the volumes of the Main Series of the 8th edition of the Handbook up to the end of 1974, and of the New Supplement Series up to the end of 1973. The first Supplement to the Formula Index extends the coverage to the end of 1979; it will comprise 8 volumes, two or three appearing each year.

In these indexes, as before, substances are listed by their empirical formula with the chemical symbols arranged alphabetically, and a molecular formula then given in each case. The present volume contains about 10 800 entries for boron compounds, and deals with empirical formulae B—B<sub>1,9</sub>. (There are, in fact, only 9 entries between B<sub>1,1</sub> and B<sub>1,9</sub>, inclusive.)

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