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Book review

Organometallic compounds; (G.E. Coates, B.J. Aylett, M.L.H. Green, D.M.P. Mingos, K. Wade). Volume one: The Main Group Elements. Part two: Groups IV and V. By B.J. Aylett, Chapman and Hall, London 1979, 521 pages; £ 32.50

Readers of this Journal will be well aware that earlier versions of this book had a profound influence on the development of our subject. In successive editions there have been significant enlargements. The original publication by G.E. Coates appeared in 1956 and he revised the text in 1960. Collaborators appeared in the two volumes which formed the third edition in 1967–8. The publishers state that Volume I, Part 1 (by G.E. Coates and K. Wade) is scheduled for publication in 1980 and Volume II (by M.L.H. Green and D.M.P. Mingos) is expected in 1982.

The book under review covers the organometallic chemistry of the Main Group IV and V elements. The incorporation of organosilicon chemistry is a new venture for this series. The division of subject matter is as follows: Si 125 pages, Ge 45 pages, Sn 99 pages, Pb 35 pages, As 56 pages, Sb 31 pages, and Bi 10 pages. Additionally there are almost 1800 references for the Group IV section and 571 for the Group V compounds. The 13 page Subject Index concentrates primarily on specific compounds.

The emphasis, in keeping with the series title, is on 'compounds' rather than 'chemistry'; e.g. in the organosilicon section there is scant mention of the use of many such compounds in organic synthesis and throughout there is little mechanistic discussion. The emphasis is on ground state properties, especially structural data.

As was the case with earlier editions, the subject matter is not restricted to that of compounds having metal–carbon bonds, e.g., metal amides and alkoxides are also considered. Additionally, an attractive continuing feature is the listing of specific compounds in the text with m.p. and/or b.p. The coverage appears to be thorough, but perhaps a little more complete for the Group IV section than the Group V. References to post-1975 work is patchy, especially for the Group V metals: one 1977 paper is cited, five for 1976, twelve for 1975, and nineteen for 1974.

This is an excellent book which will prove to be very useful. No doubt its influence will be less than that of earlier editions but that is mainly due to the fact that the subject of organometallic chemistry is almost uniquely served by excellent secondary and tertiary literature and this was certainly not true in the late 1950's or even 1960's. A fourth edition of 'Coates' is a major event for organometallic chemistry, and Professor Aylett is to be congratulated on his contribution.

School of Molecular Sciences
University of Sussex
Brighton BN1 9QJ (Great Britain)

MICHAEL F. LAPPERT