

BOOK REVIEW

Organometallic Compounds, Vol. 1, The Main Group Elements; by G. E. COATES AND K. WADE, Methuen, London, 1967, xiv + 573 pages, £6.

Organometallic Compounds, Vol. 2., The Transition Elements; by M. L. H. GREEN, Methuen, London, 1968, xiii + 376 pages, £5.

There will be a warm welcome for this third edition of *Organometallic Compounds*. The highly-regarded second edition appeared seven years earlier, and the very rapid development of organometallic chemistry in the meantime made a new edition highly desirable. Because of this development the authors have wisely produced two volumes rather than condensing the material too greatly or putting all the material in a single massive and highly inconvenient volume.

In Volume 1, as in the earlier editions, boron is included, but silicon, phosphorus, and arsenic are not. Major developments are included up to 1966, and in some cases later. The classification by Periodic Group is retained, and the sections on alkali metals, beryllium, magnesium, zinc, boron, aluminium, and tin, in particular, have been much modified and enlarged. Readers with specialist interest will inevitably disagree in some particular with the choice of material, and may even detect minor errors. [For example, on p. 375 the generalizations are made that "compounds of the type R_4M where M is Ge, Sn, or Pb are far more reactive than similar compounds... of silicon" and "as the group is descended the M-C bond becomes more easily broken ... chemically", even though on p. 380 it is pointed out that benzyl-germanium bonds are more resistant to alkali cleavage than benzyl-silicon bonds]. Everyone will, however, be grateful to Professor Coates and Dr. Wade for producing such an excellent broad survey with the right amount of detailed information.

In Volume 2 the classification is by type of ligand rather than by Periodic Group, and the success of this treatment leaves no doubt that it is correct in this case. Two-, three-, four-, five-, six-, seven-, and one-electron ligands are considered in separate chapters, then complexes formed from acetylenes. Finally there is concise survey of the role of organotransition metal complexes in some catalytic reactions. Each major topic is first treated in a general manner, with the detailed chemistry given separately later, and because of this form of presentation the volume will be of considerable value even to the undergraduate. It achieves remarkable success in bringing order into a field in which development has been very rapid but highly fragmentary.

This two-volume edition will be received even more enthusiastically than Professor Coates' earlier editions, and that is high praise indeed.

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