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BOOK REVIEW

Characterization of Organometallic Compounds; Edited by M. Tsutsui Part II, x+877 pages, Wiley–Interscience, New York/London/Sydney/Toronto, 1971, £9.50.

The second part of this book has the serious defects of the first (see *J. Organometal. Chem.*, 21 (1970) 264), but it does contain one chapter which shows just how useful the book might have been. This is the chapter by R. G. Kidd on Nuclear Magnetic Resonance Spectroscopy, in which the author does not waste space on detailed exposition of the basic theory or descriptions of instruments, which are readily available elsewhere, but gets down at once to an account of the characteristic features of the NMR spectra organometallic compounds and the information which can be derived from such spectra; proton, ^{19}F, and metal atom resonances are dealt with, and the use of NMR in measuring the rates of organometallic reactions is clearly illustrated. If all, or even a reasonable proportion, of the chapters in the two parts had been of this nature, the book would have achieved the editor's laudable objective of providing graduate students and professional chemists with a "knowledge of the techniques and procedures used to analyze and identify" organometallic compounds.

A 42 page chapter by L. N. Mulay and J. T. Dehn is entitled "Magnetic Susceptibility: Characterization and Elucidation of Bonding in Organometallics"; 28 pages are devoted to a condensed account of the general theory and description of apparatus, and 13 pages to π-cyclopentadienyl and related metal compounds, which is perhaps a fair balance, though the reader may be left with the impression that metallocenes are the only organometallic compounds suitable for magnetic susceptibility studies. In a chapter of 171 pages by F. J. Smentowski entitled "Characterization of Organometallic Compounds by Electron Spin Resonance", on the other hand, 127 pages are devoted to a rigorous theoretical introduction and an account of results on organic radical and anion radicals, such as are available in standard texts and reviews, and only 10 pages to the spectra of organometallic compounds, all metallocenes.

A chapter by W. T. Reichle attempts to cover "Preparation, Physical Properties, and Reactions of Sigma-Bonded Organometallic Compounds" (actually only of main group elements) in 173 pages. The author does, in fact, pick out interesting features for the metals he covers, but in view of the several good introductory and comprehensive review texts on organometallic chemistry it is difficult to see exactly what gap this highly condensed account is meant to fill. For example, "graduate students or professional chemists" wishing to "analyze and identify" an organogermanium compound cannot expect to get much help from a $4\frac{1}{2}$ page account of organogermanium chemistry.

Although there are some good things in it, neither part of this book can, as a whole, be recommended to either beginning or experienced organometallic chemists. The editor had a good idea for a really useful publication, but seems not to have communicated his objectives to his authors.

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