

for example, only the original structural data for chromous acetate is given and the comment made (page 32) that there may be a significant metal-metal interaction present. There are a few grammatical and typographical errors and Figures 127 and 128 appear to be upside down! However, these do not detract from the general usefulness of this volume to research workers in the area of the 'classical' chemistry of these groups of elements and to others who wish to expand their knowledge of these compounds and their chemistry from that given in the standard inorganic texts.

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Organometallic Compounds of the Group IV Elements (Ed. A.D. MacDiarmid), Vol. 2 (in two parts); *The Bond to Halogens and Halogenoids*, Dekker, New York 1972; *Part I*, xiv + 374 pages, U.S. \$34.50; *Part II*, xii + 234 pages, U.S. \$19.75.

This volume represents a further instalment of a series intended to provide a comprehensive account of organometallic compounds of silicon, germanium, tin and lead, and is concerned with compounds containing bonds to halogens or halogenoids. The separate chapters devoted to each of the elements, M, include sections on (a) the synthesis of the M-X bond, (b) cleavage of the M-X bond, and (c) the spectroscopic properties of the halides and halogenoids. Except for the chapter on silicon compounds, there is also in each case an account of complex formation by the halides and halogenoids. For the tin and lead compounds there are also important, if brief, accounts of toxicological properties.

Part I, by Charles H. Van Dyke, deals with derivatives of silicon. It appears to be an impressively thorough account, and in over 1250 numbered references some 1300 publications are cited. However, for a book appearing in the second half of 1972 there are fewer 1969 and 1970 references than one might have hoped; thus, for example, the account of the β -elimination reactions of β -chloroalkylsilicon compounds does not go beyond that given in 1968 in Vol. 1 Part 1, and so contains no reference to the revealing work on this interesting reaction which appeared in 1969 and 1970.

In Part II, J.J. Zuckermann deals with the germanium compounds in 71 pages with 538 references, H.C. Clark and R.J. Puddephatt with tin compounds in 76 pages with 493 references, and S.E. Cook, F.W. Frey and H. Shapiro with lead compounds in 49 pages with 287 references. (It is interesting that the account of the germanium compounds involves more references than that of the tin compounds.) The chapter on the tin compounds overlaps seriously with an account of organotin halides which also appeared during 1972 in another series from the same publishing house.

In the main the chapters offer direct presentations of reported results, with little in the way of analysis or comment; probably this is what most readers would wish, since

the books will mainly be consulted for simple factual information. A more analytical approach might have led to avoidance of at least one error; on page 24 of Part 2 it is stated that organogermanium halides have been converted into hydrides rapidly and quantitatively by, amongst other reducing agents, 5*N* caustic soda, but examination of the one paper cited has revealed no mention of this surprising reaction.

The difficult problem of overlap with the material of the other volumes in the series has not been solved and, indeed, its effects will become even more evident as further volumes appear. Apart from the cost of the additional pages resulting from duplication of material, this overlap will be to the advantage of readers who wish to find a factual survey of specific reactions in one place.

In spite of the high price of these books, all organizations concerned directly or indirectly with the organic derivatives of Group IV elements will wish to have them available.

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Sulphur in Organic and Inorganic Chemistry. Volume 3; edited by A. Senning, Dekker, New York 1972, xiv + 462 pages. U.S. \$33.00 (\$27.00 by subscription to the series)

This is the last volume in a three volume treatise. (The earlier parts have been reviewed previously in this Journal.) Its chapters are: (a) Reactions of Elemental Sulphur with Inorganic, Organic and Metal Organic Compounds (H. Schumann); (b) Inorganic and Organic Polysulphides (T.L. Pickering and A.V. Tobolsky); (c) The Quantum Chemistry of Sulphur Compounds (J. Fabian); (d) Steric Aspects of Sulphur Chemistry (P.H. Laur); (e) NMR Spectra of Sulphur Compounds (C. Brown); (f) Labelled Sulphur Compounds (E. Blasius, W. Neumann and H. Wagner); (g) Thione–Enethiol Tautomerism (R. Mayer); (h) The Nomenclature of Sulphur Compounds and their Selenium and Tellurium Analogues (K.L. Loening); and (i) Nucleophilicity of Organic Sulphur Compounds (M.J. Janssen). The indexes refer only to this book, and not to the earlier volumes in the series.

The reactions of some organometallic compounds with elemental sulphur are described in the chapter by H. Schumann, and the NMR spectra of some organometallic sulphides are briefly considered in the chapter by C. Brown, but otherwise organometallic compounds receive scant attention in this volume.

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