Book Reviews

Organometallic Chemistry Reviews Section B—Annual Surveys;
Vol. 4, No. 1. TRANSITION METALS: ANNUAL SURVEYS COVERING YEAR 1967; edited by R. B. KING and D. SEYFERTH. Elsevier Sequoia, Lausanne. 159 pp. Subscription price (4 issues) 80 Sfrs.

This new periodical is Vol. 4 of the previous book series *Annual Surveys of Organometallic Chemistry*, its purpose being to shorten the time lag between writer and reader. In Vol. 4, No. 1, following a short introduction by D. Seyferth, there is a brief general survey of recent developments in transition metal organometallic compounds by R. B. King containing 10 references to other review articles, 27 references to general theoretical and spectroscopic studies, and 30 references to general chemical studies. The next three sections are by F. Calderazzo and cover groups IVA and VA metals (78 references in all), and the Lanthanides and Actinides (6 references). The work surveyed is presented concisely with a reasonable amount of detail, although use of identical numbering for equations and diagrams could have been avoided. The survey includes the preparation of π-cyclopentadienyl derivatives of these metals, together with details of the chemistry of some of the new species.

The next eight sections are by R. B. King and cover groups VIA, VIIA, VIII and IB metals (674 references), with a separate section for ferrocene, ruthenocene and osmocene (87 references). There is a final shorter section devoted to organometallic derivatives containing two different transition metals. The work surveyed represents an extensive coverage of a large area of chemistry and as such cannot be expected to be too detailed. Nevertheless, the author has managed to include some discussion of many of the results presented. The repetition of authors names throughout seems to be unnecessary, although occasionally the reader may find this useful.

Throughout the volume, extensive use is made of diagrams and formulae; the quality of the paper and the reproduction is consistently good. The cost, at U.S. $ 19.80 per year—one volume per year—three or four issues per volume, seems a little high. However, its value to the organometallic researcher renders it a worthwhile investment.

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Organometallic Chemistry Reviews; Section B–Annual Surveys
Vol. 4, No. 2. MAIN GROUP METALS, GROUPS IA, IIA, IIB, IIIB: ANNUAL SURVEYS COVERING YEAR 1967; edited by R. B. KING and D. SEYFERTH. Elsevier Sequoia, Lausanne. 178 pp. Subscription price (4 issues) 80 Sfrs.

This is the first year in which *Annual Surveys* have been incorporated as *Section B* of *Organometallic Chemistry Reviews*. The second issue covering main

group elements contains eleven review articles by eight authors which admirably fulfill the main purpose of the series, in providing a comprehensive survey of organometallic chemistry for 1967. Although reviews of this type rarely make good reading, omissions are few and a good standard of clarity is maintained throughout.

The first article by W. H. Glaze on organolithium chemistry reflects the current interest in the synthesis and reactions of organolithium reagents; approximately three quarters of the 155 references are papers of a synthetic nature. The organic chemist will find the short section devoted to "lithium carbenoids" particularly interesting in view of their potential as divalent carbon transfer agents. A short survey by the same author on sodium and potassium is concerned mainly with metallation reactions involving these metals and the formation of radical anions of various hydrocarbons.

E. C. Ashby gives a concise account of developments in the beryllium field, followed by a well organised review of progress in organomagnesium chemistry. The latter article containing 112 references will appeal largely to the synthetic organic chemist. A notable omission here is the paper by Hull, Reid and Turnbull, (*Inorg. Chem.*, 6 (1967) 805) on the heat of formation and bond energy of bis-(cyclopentadienyl) magnesium.

Short, non-critical, reviews of organozinc and organocadmium chemistry by J. G. Noltes are followed by a longer survey of organomercurials by D. Seyferth. Although quite comprehensive, the latter survey suffers distinctly from a lack of headings and organisation. The casual reader will have great difficulty in finding material of interest without digesting the whole article.

By contrast, D. S. Matteson gives a thoughtful and lucid summary of carborane and "classical" organoboron chemistry. Notable here are the sections on structures and cage reactions of carboranes as well as the sudden upsurge in interest in hydroboration reactions. A few outstanding developments in the chemistry of compounds not having B-C bonds are also reviewed.

The last three surveys by J. J. Eisch are devoted to aluminum, gallium, indium and thallium. Developments in the structural chemistry of organoaluminum compounds are given excellent coverage as are recent advances in the syntbesis of aluminum–carbon bonds.

Perhaps the main criticisms to be levelled at this series concern the format and the noncritical presentation of material. The absence of a list of contents or of sectional headings with surveys of this type are not conducive to the use of tbese volumes as a reference source. Nevertbeless *Annual Surveys* will continue to be a must for organometallic researchers.

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