

petroleum, but some for use as reagents in organic synthesis.

About 40% of the book (i.e. 156 pages) is devoted to the compounds $\text{Me}_3\text{PbR}'$, including Me_3PbEt which takes up 50 pages; remarkably, only 4 pages are required to deal with the chemical reactions of the latter compound, the studies of it having been largely focused on its physical properties, toxicity, environmental effects and uses. Much the same distribution of space applies in the case of the compounds $\text{Et}_3\text{PbR}'$, which take up 55 pages, and $\text{Ph}_3\text{PbR}'$, which takes up 124 pages. A great amount of information is clearly and concisely made available, much of it in tables. Coverage of the literature is complete up to the end of 1994, and extends to the more readily available journals up to mid-1995. There is a useful formula index.

Anyone engaged in research on organolead compounds should have access to this excellent series, either to the printed volumes or on-line.

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Multiply Bonded Main Group Metals and Metalloids, R. West and F.G.A. Stone (eds.), Academic Press, San Diego, 1996, 408 pp. + xi, \$65.00, ISBN 0-12-744740-7

This book, timely and of high quality, is a paperback edition of *Advances in Organometallic Chemistry*, Volume 39. Concerned with a field of chemistry in which there is much current activity, it presents an excellent set of authoritative reviews of several of the main topics by authors who are among the leaders in the areas covered.

The reviews are as follows: multiple bonding involving the heavier Main Group 3 elements Al, Ga, In and Tl (69 pages, 152 refs.) by P.J. Brothers and P.P. Power; the chemistry of silenes (88 pages, 223 refs.) by A.G. Brook and M.A. Brook; iminosilanes and related compounds – synthesis and reactions (33 pages, 55 refs.) by I. Hemme and U. Klingebiel; silicon–phosphorus and silicon–arsenic multiple bonds (36 pages, 46 refs.); chemistry of stable disilenes (43 pages, 105 refs.) by R. Okazaki and R. West; stable doubly bonded compounds of germanium and tin (49 pages, 115 refs.) by K.M. Baines and W.G. Stibbs; diheteroferrocenes and related derivatives of the Group V elements arsenic,

antimony and bismuth (28 pages, 57 refs.) by A.J. Ashe III and S. Al-Ahmad; boron–carbon multiple bonds (36 pages, 113 refs.) by J.J. Eisch.

Most of the reviews are concerned with ‘unsaturated’ species that would conventionally be shown as having double bonds to the Main Group elements, e.g. $\text{R}_2\text{Si}=\text{CR}'_2$, $\text{R}_2\text{Si}=\text{SiR}'_2$, $\text{R}_2\text{Si}=\text{NR}'$, $\text{R}_2\text{Ge}=\text{PR}'_2$, or in the case of the diheteroferrocene derivatives of Group 15 elements, aromatic rings incorporating the Main Group element. However the first review, a well-organized survey by P.J. Brothers and P.P. Power, largely deals with the question of what would commonly be thought of as partial double bonding in formally saturated species such as $\text{R}_2\text{MER}'_2$, where M is a Group 3 element and E a Group 5 or Group 6 element (e.g. $\text{R}_2\text{GaPR}'_2$, $\text{R}_2\text{AlOR}'$), but also with anions such as $[\text{R}_2\text{AlAlR}'_2]^-$; for many readers the section dealing with possible π -bonding in compounds having a Main Group element bonded to a transition metal will be of special interest. Likewise, much of the well-informed and interesting survey of boron–carbon multiple bonds is concerned with partial double bond character that in valence-bond terms can be represented in terms of resonance between canonical forms such as (in the simplest case) $\text{R}_2\text{C}=\text{CR}-\text{BR}'_2$ and $\text{R}_2\text{C}^+-\text{CR}=\text{B}^-\text{R}'_2$, but classically unsaturated species, such as Paetzold’s stable $(\text{Me}_3\text{Si})_2\text{C}=\text{BBu}'$, and anions of the type $[\text{RC}=\text{BR}'_2]^-$ are also discussed.

The presentation is good, with high quality print and clear diagrams, and there is a satisfactory subject index. The editors and authors are to be congratulated on this book, which represents very good value by today’s standards. But its content is, of course, already available in libraries that subscribe to the excellent *Advances in Organometallic Chemistry* series.

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Metal-Containing Polymeric Materials, C.U. Pittman Jr., C.E. Carraher Jr., M. Zeldin, J.E. Sheats and B.M. Culbertson (eds.), Plenum Press, New York, 1996, 518 + x pages, US\$125.00, ISBN 0-306-45295-2.

This is the fifth in a series based on lectures given at successive symposia of the American Chemical Society