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BOOK REVIEW

Hydrides of the Elements of Main Groups I–IV; by E. Wiberg and E. Amberger, Elsevier, Amsterdam/London/New York, 1971, XVI+785; $80.75, £33.85, Dfl. 290.00.

This impressive book presents a very thorough account of the chemistry of the hydrides of the elements of Main Groups I–IV, and will be of great value not only to specialists in the field but also to inorganic and organic chemists who increasingly use many of these hydrides as reagents in synthesis. The first chapter is a rather brief introduction to general aspects of the chemistry of these hydrides, while the remaining chapters present very comprehensive surveys of the synthesis, reactions, and physical properties (including references to spectra) of the hydrides of specific elements or groups of elements. Thus 30 pages are devoted to alkali metal hydrides, 38 to alkaline-earth metal hydrides, 300 to boron hydrides, 62 to aluminium hydrides, 19 to gallium, indium and thallium hydrides, 177 to silicon hydrides, 80 to germanium hydrides, 38 to tin hydrides, and 8 to lead hydrides. Where reaction mechanisms have been studied the results are clearly and concisely stated. Some 3800 references are cited, and there is a satisfactory subject index, but no author index.

It is stated on the cover of the book that particular emphasis has been given to the most recent literature ("up to early 1970"), and, indeed, there is a brief appendix dealing with 1970 literature. But, at least in the sections with which I am most familiar, the literature coverage after about 1965–1967 appears to be markedly less complete than that for earlier years. For example, outdated mechanisms are assigned to the very important reactions of silicon hydrides with olefins and acetylenes in presence of chloroplatinic acid and other metal complexes, although the currently accepted mechanism was published as long ago as 1965 and the topic was thoroughly reviewed in a book which appeared in 1968. But up-to-date coverage could hardly be expected in every part of the book, and provided readers treat the claim to such coverage with caution they will find this a most valuable reference work. It will be very frequently cited for many years to come, and the authors are to be congratulated on their achievement.

C. Eaborn