

Metal Interactions with Boron Clusters, edited by Russell N. Grimes; (*Modern Inorganic Chemistry Series*; edited by John P. Fackler) Plenum Press, New York, 1982, 327 pages, \$42.50.

Such has been the rapid growth of main group and transition metal cluster chemistry in recent years that it is no longer possible to give a comprehensive coverage of the subject in a single book. Therefore, this monograph has sensibly limited its attention to those polyhedral molecules formed between boranes and carboranes and metals. The editor, Prof. Russell Grimes, suggests in his introduction that the topics were chosen to give a general insight into metalloborane chemistry and to provide reviews of aspects of the subject which had previously been neglected. The general bonding aspects are described in an introductory chapter by O'Neill and Wade, and the relevance of the bonding ideas developed in borane chemistry to metal clusters is stressed. Greenwood and Kennedy have given a most useful and up-to-date review of transition metal complexes with *nido*-boranes, and in addition have indicated some of their more recent and as yet unpublished results. These topics have been reviewed previously, and the real strength of the book lies in the reviews of topics which have not been covered elsewhere. For example, Gaines and Hildebrandt review the complexes of $B_3H_8^-$, Geiger provides a timely review of the electrochemical aspects of metalloboranes and Grimes discusses the structures of polyhedral boranes with metal-hydrogen bonds. Metalloborane complexes of the main group elements are described by Todd, and σ -bonded complexes of carboranes and boranes are reviewed by Bresadola.

The standard of presentation and accuracy is uniformly high and some of the chapters contain literature citations up to March 1982. I have found the book most useful as an entry into the literature, and, judging by the frequency with which the book has disappeared from my desk, so will other research workers.

It is fitting that the authors have chosen to dedicate this excellent volume to the memory of Ralph Rudolph, who made so many important contributions to this area of chemistry and by his insights helped unify the subject.

*Inorganic Chemistry Laboratory,
University of Oxford,
South Parks Road,
Oxford OX1 3GR (Great Britain)*

D. MICHAEL P. MINGOS