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Book reviews

The Mechanisms of Reactions at Transition Metal Sites
R.A. Henderson, Oxford University Press, Oxford 1994. £4.99
ISBN 019 8557469

This book is part of a 21 volume series of Oxford Chemistry Primers. This fact immediately gives rise to difficulties for a reviewer. Is one to review the book as a separate entity or simply as part of a well-integrated series? This point is especially important when considering underlying theoretical concepts such as transition state theory or the theory of electron transfer reactions. Both these theories are described at appropriate places in the text but in very condensed forms, so much so that I consider the average undergraduate, for whom this series has been developed, would find their treatment quite indigestible. Presumably they are covered by other members of the series but it would be helpful if reference were made to the appropriate volume.

With the above general proviso, I found this book to be an excellent and well-targeted review of most of the important areas covered by the title including substitution reactions at four- and six-coordinate sites, catalysed substitution reactions and electron transfer reactions with some nice examples from bioinorganic chemistry. Finally, there is a good section on ligand activation by both electron-poor and electron-rich sites with further well chosen examples. The style and presentation is clear, if at times rather spartan, but this is probably an advantage in such a series although it must be said that the index is far too small to be useful.

In summary, I enjoyed the presentation and selection of material in this book and view it as a useful supplement to existing comprehensive texts such as "Basolo & Pearson".

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Cluster Molecules of the p-Block Elements
C.E. Housecroft, Oxford University Press, Oxford, 1994, 91 pages £4.99 (paperback)
ISBN 019 855699 3 (hardback), 019 855698 5 (paperback)

This book appears as number 14 in the Oxford Chemistry Primers series (sponsored by Zeneca) that aims to provide short, inexpensive texts for use at the undergraduate level. After a brief introductory section the text is split into five further chapters concerned with element clusters, structures, bonding, synthesis, and reactivity. A wide range of clusters is covered, including well known examples such as P_4, Zintl ions, boranes, carboranes and sulfur nitrogen compounds, as well as more recent developments such as C_{60}, 1,2-Me_2-1,2-$Si_2B_{10}H_{10}$ and the germanium prismane $Ge_6\{CH(SiMe_3)_2\}_6$. Unfortunately, although some organosilicon compounds are described silicates are not included. The book is well illustrated with a large number of clear structures, schemes, and equations. Clear MO diagrams and explanations are given in a number of places and these should greatly aid undergraduates' understanding of concepts such as multicentre bonding.

The organisation of the book means that for a particular type of cluster all of the sections will probably need to be consulted, but this is not an onerous task in a book of this size especially as marginal cross-references are often given. The book would make an ideal companion to a short lecture course on p-block clusters but it is a pity that it does not extend to the s-block elements and discuss other species of related interest such as organolithium reagents. This book covers similar ground to *Non-metal Rings, Cages and Clusters* by Woollins but at a fraction of the price. Students will, no doubt, prefer to buy the cheaper book, but those who already own a copy of Greenwood and Earnshaw's *Chemistry of the Elements* may decide that as most of the older material is dealt with there no purchase will be needed. The book should, however, be in every student library, and many teachers of inorganic chemistry will find it useful to have a personal copy in which to find recent examples and clear diagrams of complicated structures.

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