

the 1995 literature. The succeeding chapters are as follows:

“Formation of Metal-Ligand Multiple Bonds in Redox Reactions: The d^4-d^2 Redox Couple in Tungsten- and Molybdenum-Chlorophosphine Complexes and Related Systems” James M. Mayer (48 pp; 98 refs).

“Electronic Structure of Metal-Oxo Complexes” Vincent M. Miskowski, Harry B. Gray and Michael D. Hopkins (28 pp., 33 refs.).

“Excited-State Proton Transfer Reactions of Multiply-Bonded Ligands” Wentian Liu and H. Holden Thorp (22 pp., 64 refs.).

“Electrochemistry of High-Valent Oxo Complexes of Ruthenium, Osmium, and Rhenium” Chi-Ming Che and Vivian W.W. Yam (22 pp., 72 refs.).

“Conducting Metallic Complexes” Xiao-Zeng You and Yong Zhang (48 pp., 180 refs.).

There is a Subject Index (5 pages).

The book is clearly produced; the expertise of the authors is beyond question and the series is one to be welcomed.

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Perspectives on Bioinorganic Chemistry, R.W. Hay, J.R. Dilworth, and K.B. Nolan eds., Volume 3, ISBN 1-55938-642-8, pp. 304 + xi, JAI Press London, 1996, £69.50, US\$109.50.

The demands upon the chemist wishing to understand biological systems become greater every year. Reviews and review volumes become ever more necessary, and the editors of this series are to be congratulated on producing something both up-to-date enough and sufficiently different to warrant attention. It will probably represent the forefront of research for a relatively short time, but it will be useful as a summary of knowledge for considerably longer.

Chapter 1 by D.C. Weatherburn describes the structure and function of manganese-containing bio-molecules. Manganese is a rather unpopular element amongst inorganic chemists and yet it appears to be the essential metal in a large number of proteins and enzymes. Relatively few have been structurally characterised. This review summarises information on many of the manganese-containing systems, and includes more than one thousand literature references. Chapter 2, by Junhun Suh, is entitled “Repertoires of metal ions as Lewis acid catalysts in organic reactions”. This is a useful review that does not present any great detail on specific

metallo-enzymes, and contains material under some headings such as “Catalysis by binuclear metal ions” that are at first sight somewhat obscure. However, teachers should find this a valuable summary.

Chapter 4, by A. Messerschmidt, describes the copper enzyme ascorbate oxidase, and discusses its structure and function in considerable detail. The last two Chapters review rapidly developing and very important areas. T. Kiss and E. Farkas discuss the bioinorganic chemistry of aluminium, but very much from a classical point of view. For example, they present a lot of stability constant data and review briefly the effects of aluminium on metabolism, but they do not discuss detailed bioinorganic chemistry at the atomic level. Finally, A.R. Butler, F.W. Flitney, and P. Rhodes provide a brief review of nitric oxide in animal physiology. This is currently very useful, but is likely to date quite rapidly, so fast is this field expanding.

In summary, this is a useful book to dip into, and as a first resource in the areas it presents. It contains little organometallic chemistry, but should be available in libraries where many people will find it of value.

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The Molecular Chemistry of the Transition Elements, by F. Mathey and A. Sevin, ISBN 0-471-95687-2 (paperback), pp. 232 + x, John Wiley and Sons, Chichester, 1996, £18.99.

This book is intended as an introductory text in transition-metal organometallic chemistry. The students that the authors teach have a strong background in physics and mathematics and hence the approach differs from some others by its reliance on qualitative descriptions using frontier orbitals. As an introductory text, it is not intended to be comprehensive.

I compared this volume to two other popular texts, those by Elschenbroich and Salzer, and by Crabtree. Certainly the former is almost bereft of the theoretical discussions that occur throughout this book, but in contrast it contains much factual material on both transition and non-transition elements. The Crabtree book begins rather similarly, discussing types of ligand and then presents various classes of reaction. The current volume begins with a long discussion on ligands, orbitals and reaction types, and then presents what are termed the main functional groups in organometallic