

material according to the ligand type and it seems a pity that some generalised style could not have been agreed, since the variations make the comparisons rather difficult. Some readers will be disappointed with the lack of coverage of the medical applications of platinum(II) complexes and the almost complete absence of discussion of platinum nucleotide complexes, since these areas now represent a very significant proportion of the papers on platinum chemistry which are being published. Whilst I assume that these are dealt with in some detail in Volume 6, some cross-referencing would have been useful. The chapter on palladium is at the end of the volume (since it contains references running into 1986, unlike the other chapters, I deduce that it arrived late!) and is curiously divided, with two pseudo new chapters dealing respectively with palladium complexes of sulphur and phosphine ligands. I could not really see the justification for this. The treatment is relatively brief, and I found it a little disappointing when compared with the comprehensive accounts of nickel and platinum chemistry.

The chapters on copper, silver and gold were rather more successfully organised, with the material in each case classified first according to the oxidation state of the metal and afterwards by the type of ligand. Zinc and cadmium are treated together, with a separate chapter on mercury.

As is inevitable with a multi-author work there is considerable inconsistency in deciding which compounds should be considered to be coordination compounds. Roundhill, in particular, takes a generous view and many compounds which I would have classified as organometallic (including metal alkyls, alkene, alkyne, ylide and carbene complexes) appear in the chapter on platinum. The organometallic chemistry of nickel also rates significant space, but there is little or no mention of organometallic complexes of palladium. The omission of any consideration of cyclometallation reactions from this section is unexpected, even when considered from the standpoint of a purist coordination chemist. Most of the authors regard complexes of carbon monoxide and isonitriles to be within their remit.

Overall this volume is well produced, and the references to each chapter are particularly extensive and useful, though covering material only up to 1984 in most cases. The subject and compound indexes are clear, comprehensive and well presented. Readers might have wished for a firmer editorial hand in determining coverage and organisation of the chapters, and there have clearly been some production problems in relation to the palladium sections. The cost of such sets of volumes has long passed the amount which individuals could consider for personal purchase, but this series will clearly take its place as an indispensable reference book for all serious chemists, whatever their speciality.

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Comprehensive Coordination Chemistry, Volume 6, Applications, xiv + 1102 pages, ISBN 0-08-035949-3.

This volume covers an enormous amount of material. There are fifteen sections, starting with electrochemical applications, proceeding through uses in synthesis and

catalysis and finishing with biological and medical aspects. It is impossible for a single reviewer to do justice to such a vast area of knowledge.

In such circumstances, complaints are few. Reviews on photographic applications and on dyes and pigments bring to attention areas which normally do not receive much notice. A relatively short section (nevertheless copiously referenced) on compounds with unusual electrical properties might have been more informatively called: "The electrical conduction of coordination compounds in the solid state". A section on the stoichiometric reactions of coordinated ligands actually deals with species such as "imine chelates" (sic), phthalocyanines, and β -diketones. It would be churlish to complain of the absence from consideration of dinitrogen. However, this small molecule finds no space even in the extensive section on catalytic activation of small molecules, which deals with processes such as hydrogenation, hydroformylation, and carbonylation. Dinitrogen is, however, mentioned in a magnificent review (214 pages, 1566 references) on coordination compounds in biology. This is really worth a book of itself, and appeals to the reviewer more than any other section in this volume.

Other reviews cover metal complexes in oxidation, Lewis acid catalysis and reactions of coordinated ligands (a pendant thought, what is an uncoordinated ligand?), the decomposition of water into its elements, chemotherapy, extractive metallurgy, geochemistry, and nuclear fuels and radiopharmacy, and there is a final survey of "other uses".

The editors are to be congratulated on this volume, which undoubtedly overlaps with the element-by-element treatment of earlier volumes. However, this allows access and organization in a different and often more useful way, and is of considerable value. The sheer quantity and generally excellent quality of the material presented here mean that the volume will be a standard literature resource for some time to come.

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Comprehensive Coordination Chemistry, Volume 7. Indexes, xxii + 642 pages, ISBN 0-08-035950-7

This volume contains, along with the expected cumulative Subject and Formula Indexes, an Index of Review Articles and Specialist Texts, prepared by R. Davis; this aims to provide a comprehensive listing of reviews dealing with aspects of coordination chemistry that appeared in English in the period 1945 to early 1986 in primary journals, review journals, or periodicals. (Textbooks are not included.) It is a very useful compilation, containing 1707 entries, and will be much consulted. It is, however, not as complete as it should be because a decision seems to have been made to exclude any reviews that appeared in publications having an organometallic label, so that, for example, the references to annual surveys do not include those in the Journal of Organometallic Chemistry or the Journal of Organometallic Chemistry Library Series, even though there must be much material in these publications that would fall within the defined scope of the set of volumes under review.