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Book review

Stereochemistry of Coordination Compounds
A. von Zelewsky
John Wiley, Chichester, 1995
x + 254 pages.
ISBN 0–471–95599–X
UK price: £24.95, paperback

This book generally lives up to the description on the cover as 'essential reading for undergraduates, post-graduate students and lecturers specialising in coordination chemistry in inorganic and bioinorganic chemistry', and chemists at all three of these stages of their careers will find much of use in it. It provides a timely, comprehensive and clear coverage of the (now) broad range of stereochemical topics in inorganic chemistry.

The book comprises a preface, seven chapters, three appendices and an index. After an Introduction giving some of the historical background to the subject, and a survey of methods for the elucidation of the stereochemistry of coordination compounds, there follows a chapter giving some of the theoretical basis for the coordination geometries of both main-group and transition-metal ions. The reader of this chapter would benefit from a familiarity with the basic concepts of ligand field theory and of the angular overlap model. There is then a general chapter coving symmetry, the classification of ligands, isomerism and nomenclature. The next chapter, of nearly 100 pages, is devoted to a systematic description of the topographical stereochemistry of mononuclear complexes, starting with coordination numbers two and three and monodentate ligands and ending with polycyclic ligands and higher coordination numbers. The following, somewhat shorter chapter, deals with polynuclear species and includes a description of molecular helices, chains and knots. The final chapter deals with the stereochemical course of reactions of metal complexes. This is an enormous field and the area would really be best treated as the subject of a separate volume. There are indexes covering point groups and ligands, and a glossary which is particularly useful in this area where there can be a degree of uncertainty and ambiguity about some of the terms used. The book is not a coordination chemistry textbook and covers only classical coordination complexes, omitting both organometallic compounds and clusters.

The use of many stereo-pair diagrams is particularly useful in this field and the Figures are generally very clearly drawn. The figures in the book are all available on the Internet and can be downloaded in the original ChemDraw© or Chem3D© format, or in epsf format for pictures designed in ClarisDraw©. There is also a program available for calculating the number of isomers and their coordination index for octahedral complexes.

The book is well referenced and information from many different areas has been gathered together to give material that would be hard to find elsewhere in a single source. Overall it is well produced with few errors, although the chirality descriptors in Fig. 5.24 are opposite to what they should be, which is confusing. The use of colour would have helped in some places but this would no doubt have increased the cost considerably (colour stereo three-dimensional pictures are available from the Internet site for those with a practised eye). The book will provide much useful insight for the undergraduate chemist for whom, however, a purchase price of about half that shown above would have been more reasonable. Several copies of the book should be a 'must' for any library used by inorganic chemists.

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