

**Book review**

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*Magnetism and Transition Metal Complexes*; by F.E. Mabbs and D.J. Machin, Chapman and Hall, London, 1973, 240 pages, £3.60.

This book is a comprehensive treatise on the use of crystal field theory in interpreting the magnetic properties of transition metal complexes. After a brief introduction on the general aspects of magnetism the book develops crystal field theory using a perturbation approach, following an extended section on perturbation theory. This is then used to interpret in detail the magnetic properties of ions in cubic and axially distorted crystal fields, with a chapter devoted to comparison of experiments with calculations. The final chapter is a short introduction to exchange interactions via the magnetic properties of polynuclear transition metal complexes.

This is an authoritative book within the limits the authors set themselves, namely the magnetic properties of transition metal ions and crystals. It should therefore be useful to inorganic chemists who want to interpret magnetic susceptibility data in structural terms. However, the authors take very much a quantum mechanical line in the development and this may not appeal to workers in synthetic fields. The book is lacking somewhat in the ability to set magnetism in transition metal complexes into a broader picture of the phenomenon of magnetism of solids and liquids. Some relationships to the other consequences of splitting of states in a magnetic field might have been drawn. However, these would require a considerable longer and more expensive book than the one produced by Mabbs and Machin. This is an attractive production, which is relatively inexpensive, and which should be valuable to research workers and advanced undergraduates in the field of magnetic properties of metal complexes.

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