Book Review

Works intended for notice in this column should be sent direct to the Book-Review Editor (M. M. Woolfson, Physics Department, University of York, Heslington, York, England). As far as practicable books will be reviewed in a country different from that of publication.

Structure and bonding. Vol. 5. Edited by C. K. JØRGENSEN, J. B. NEILANDS, R. S. NYHOLM, D. REINEN and R. J. P. WILLIAMS. Pp. 149 (22 in German). Berlin–Heidelberg–New York: Springer-Verlag, 1968. Price (soft cover) DM 32, U.S. $8.00.

This is the fifth volume in this series dealing with general problems of chemical structure and bonding forces. It consists of five articles. Two articles have biochemical implications ('Biochemical aspects of iron–sulfur linkage in non-heme iron protein', by T. Kimura, pp. 40; 'Reaction of some transition metals with nucleic acids and their constituents' by U. Weser, pp. 27) and one article is purely theoretical ('A perturbation representation of weak covalent bonding' by C. E. Schäffer, pp. 28). There is an article (in German) on homogeneous catalysis by W. Strohmeier (pp. 22) and an article on 'The thermodynamics of complex formation between hard and soft acceptors and donors' by S. Ahrland (pp. 31).

As in previous volumes in this series the spread of interest is wide, and I cannot imagine any one reader being interested equally in all the articles. It would perhaps be unwise for a reviewer to attempt a critical evaluation of the articles and the prudent course of action would seem to be to attempt brief summaries and leave the reader to judge the articles that seem to interest him.

The article by Kimura is primarily a review of the recent work done in his own laboratory on the non-haem iron protein serving as an electron transfer intermediate in steroid hydroxylation in mammalian glands. To some extent it supplements the article of Buchanan which appeared in Vol. 1 of this series.

The article by Weser is a systematic review of what is known about the interactions of transition metals with monomer and polymer units of nucleic acids. Some attempt is made in the article to suggest, tentatively, correlations between metal–polynucleotide interactions and biochemical pathways.

Schäffer presents a formalization and elucidation of a ligand field model for highly heteropolar situations, by means of the representations of the full rotation group carried by the real atomic orbitals. In this way he is able to exhibit clearly the parametrization of the model.

Strohmeier's article on homogeneous catalysis is an attempt to develop a simple model for such catalysis in terms of a suggested mechanism and the structure of the activated complex.

The final article, by Ahrland, collects a great deal of thermodynamic data on complex formation and proposes an elucidation of it in terms of the ideas of hard and soft acceptors and donors, given a theory of the nature of the coordinate bond.

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Books Received

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

Coordination chemistry in non-aqueous solutions. By V. GUTMANN. Vienna, New York: Springer-Verlag. Pp 174. Price Austrian schillings 302, DM 48, U.S. $12·00.

The presentation contains the program of a series of graduate lectures in Advanced Inorganic Chemistry held at the University of Florida, Gainesville, in February 1967. The classification of solvents is based on their coordinating properties; solvents may be considered as either donor solvents or acceptor solvents. The relationships between solvent properties and the coordination chemistry found in their relations are discussed and many examples are given. Because the presentation is not a comprehensive one, but covers the more significant advancements in coordination chemistry in non-aqueous solvents, it may be found useful both for graduate students and for all chemists interested in recent advances in chemistry.

Physical acoustics. Principles and methods. Vol. IV, part B. Applications to quantum and solid state physics. Edited by WARREN P. MASON. New York and London: Academic Press. Pp xix + 490. Price $19.50.

The subject matter of this book is a continuation in part of material presented in Volume IV, part A, namely the applications of physical acoustics to quantum and solid state physics. A review is given of all the interactions that can take place between acoustic waves and electrons when magnetic fields are present.