

Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the Executive Secretary of the International Union of Crystallography (J. N. King, International Union of Crystallography, 13 White Friars, Chester CH1 1NZ, England).

International Union of Crystallography Commission on Neutron Diffraction

The Commission on Neutron Diffraction of the International Union of Crystallography announces the establishment of an information service to provide rapid dissemination of magnetic structure data among neutron diffractionists and other scientists in related fields. The service will take the form of magnetic structure data sheets distributed quarterly to subscribers starting in the summer of 1972. The data, supplied by neutron diffractionists working in the field, will be edited to provide uniformity of style and will be recorded in summary form on data sheets suitably classified for insertion into a loose-leaf binder according to a scheme similar to

that used in Wyckoff's *Crystal Structures*. The data sheets are not intended to substitute for normal publication; information will be accepted for distribution at the time a report of the research is submitted either for publication or presentation at a meeting. The service is to be directed by David Cox and will be operated on a non-profit basis; a charge of \$15 for individuals and \$25 for libraries will be made to cover operating expenses. Requests for subscriptions should be sent to MSDS, Neutron Diffraction Commission, Brookhaven National Laboratory, Upton, Long Island, New York 11973, U.S.A. Checks or money orders should be made payable to 'MSDS, Neutron Diffraction Commission'. Local currency will be accepted but payment in dollars will be appreciated for ease of handling.

Book Reviews

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 YO1 5DD, England). As far as practicable books will be reviewed in a country different from that of publication.

Perspectives in structural chemistry. Vol. IV. Edited by J. D. DUNITZ & J. A. IBERS. Pp.v + 425. London: Wiley, 1971. Price: £11.75.

The fourth, the last, and by far the longest, volume of *Perspectives* maintains the high standards of its predecessors. It comprises three articles, with collective Author and Subject indexes. The first, by H. T. Evans Jr, *Heteropoly and isopoly complexes of the transition elements of groups 5 and 6*, is the shortest. Though mentioning other methods of study, it is mainly concerned with X-ray analysis and its results: 9 of the 25 beautiful diagrams are stereoscopic views of the main types of structures. There are 110 references.

The second article, by O. Bastiansen, H. M. Seip and J. E. Boggs, *Conformational equilibria in the gas phase*, runs to over 100 pages, with 435 references. After a sketch of the relevant electron-diffraction and spectroscopic methods, and a section on theoretical calculations of conformational geometry and energies, the bulk of the article covers our knowledge of simple open-chain molecules and of those with small rings.

The third article, by F. H. Herbstein, is entitled *Crystalline π -molecular compounds: chemistry, spectroscopy and crystallography*. This is a monumental review (230 pages, 484 references, 84 diagrams, 91 numbered formulae), brilliantly written. It is mostly concerned with complexes, formed by delocalized interactions, between an acceptor molecule (such as tetracyanoethylene) and a donor (such as naphthalene).

The philosopher will savour the differences of tone in the concluding paragraphs of these splendid essays. Evans writes '... in this area predictions and speculations have had ... little success. For a better understanding ... we

must await (further information), probably ... by crystal-structure analysis'. Bastiansen, Seip and Boggs write '... exciting results already obtained may indicate that ... the future of conformational analysis lies in the hands of the theoreticians'. Herbstein's epilogue, like his prologue, is a quotation from *Alice in Wonderland* containing the words: 'Oh, you're sure to (get *somewhere*) ... if you only walk long enough'.

The price is high, though not – by current standards – unduly high for so lavish a volume. It is a pity this excellent series, which has earned such a high reputation, should now be discontinued for commercial reasons. But the curtain descends upon a glorious last act.

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Crystal chemistry and semiconduction in transition metal binary compounds. By J. P. SUCHET. Pp.xvii + 380. London: Academic Press, 1971. Price: £10.25, \$22.00.

The present tendency to create research fields which are interdisciplinary has resulted in the appearance of many new areas of study which are striving to reach a respectable maturity. Crystal chemistry is one such subject that, unlike many, is now well established, with a reputable literature dominated by research into properties of semiconducting materials, which form the basis of many of the solid state electronic devices which are now commercially so readily available.

Dr Suchet reviews the literature on the structures and physical properties of binary transition metal compounds since 1950 during which period the most active research in this field was carried out. In the first 50 pages he attempts to introduce the subject of crystal chemistry in a way which is hardly attractive to an inorganic chemist who has been through a normal university course. Not only does this section contain a large number of translational idiosyncrasies ('a bachelor electron' for an unpaired electron) but the author seems unconvinced of the value of band theory of solid state structures (p. 33); consequently this section lacks balance. The following 225 pages of the text contain a very tersely written account of various binary phases

(mainly oxides but some chalcogenides and metalloid compounds) but there is a tendency to degenerate into a list of references (which are only up-to-date to June 1969). The last 70 pages of the book contain a detailed discussion of a number of magneto-optical properties of these binary compounds, and is more worthwhile reading for solid-state chemists, in view of their possible interest in solid-state devices.

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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.

Point group character tables and related data. By J. A. SALTHOUSE and M. J. WARE. Pp.v+88, Cambridge Univ. Press, 1972. Price £1.00

This small book is intended for the use of chemical spectroscopists. The contents are 1. Numerical data; 2. Geometrical data; 3. Principles of symmetry; 4. Crystallographic aspects of point symmetry; 5. Some aids to the use of character tables; 6. Point group character tables; 7. Group correlations; 8. Spectroscopic aspects of group theory; 9. Group and molecular properties at equilibrium; 10. Bibliography and references.

The bond to halogens and halogenoids. Part 2 (Organometallic compounds of the group IV elements, Vol. 2). Edited by ALAN G. MACDIARMID. Pp.viii+234. New York: Marcel Dekker, 1972. Price \$ 19.75

The main body of the book is in three sections devoted to: Synthesis and properties of the germanium-halogen and germanium-halogenoid bond; Synthesis and properties of the tin-halogen and tin-halogenoid bond; Synthesis and properties of the lead-halogen and lead-halogenoid bond.