

Book Review

Structure Reports for 1984. Volume 51A: Metals and Inorganic Sections (General Editor, G. Ferguson; Section Editor, J. Trotter), D. Reidel Publishing Company, Dordrecht, Boston, Lancaster, Tokyo, 1987, vi + 384 pages, Dfl 170, \$75, £49. ISBN 90-277-2470-9.

Structure Reports is prepared under the guidance of a Commission of the International Union of Crystallography, and its admirable aim is to present critical accounts of all crystallographic structure determinations. The current volume is split into two sections, labelled metals and inorganic compounds. The former section contains a wide range of binary and ternary structures, including (for example) Na_2S_8 , NbP_2S_8 , $\text{Nd}_6\text{Ni}_7\text{Si}_4$, PPd_6 , $\text{Rh}_3\text{Sn}_5\text{Y}_2$ and CdS . This section (94 pages) is clearly much more relevant to the solid state chemist and physicist than to the coordination chemist, and will not be discussed further.

The section concerning inorganic compounds (270 pages) is absolutely invaluable to the coordination chemist. The compound classes discussed are, in order, elements, hydrides, nitrides, carbonyls, azides, amides, phosphorus-nitrogen compounds, sulfur-nitrogen compounds, halides, oxide halides, cyanides, oxides, double oxides, metallates (e.g. titanates), hydroxides, sulfides, borates, carbonates, nitrates, phosphates, arsenates, sulfates, perchlorates, iodates, silicates, silicate minerals, and electron diffraction studies. Only complete structural analyses are described in detail; incomplete structures and preliminary communications are tabulated.

Each compound is described in some detail, the original reference, crystal data, figure, and key molecular parameters (and, for smaller structures, atomic coordinates) being quoted, and this volume (taken with earlier volumes in the series) clearly represents a definitive source book for all inorganic chemists. However, it is not without its faults. In a volume of this type, accessing the data is of prime importance: it is no use having a comprehensive set of structural data if you cannot find the information that you require. The arrangement within the volume, in terms of compound classes, is very useful if one is interested in a class of compounds (say dihydrogenphosphates, for second harmonic generation). However, if one is interested in specific complexes, only a well organized empirical formula index (cf. *Gmelin Handbook*) gives easy and reliable access to the information. Although an empirical formula index is included for the metals section, there is no such index for the much larger inorganic compounds section (the subject

index is, obviously, of only limited use). I would strongly recommend to the editors that such an index be included in future volumes. Moreover, it would be much more helpful to the reader if details of the volume arrangement, symbols used, etc., were included in the preliminary pages of every volume, rather than refer the reader back to Volume 42A.

The second problem with this volume originates with its reproduction from camera-ready copy. Although the text is quite clear and reasonably well presented, the figures are of a very mixed quality. On p. 103, for example, the lower figure is clear, bold and unambiguous, whereas the upper figure is faint, poorly reproduced and its text is illegible. A book of this type must be clearly illustrated throughout if its value is to be maintained.

Laying these quite important criticisms aside, however, it must be said that this book (and, of course, the whole series) offers an invaluable and irreplaceable source of data to the inorganic chemist. All chemistry libraries should support it, and its cost is very reasonable for a work of this kind. We owe the Commission on Structure Reports of the International Union of Crystallography, and in particular the two editors, a debt of gratitude for producing this series - long may it continue to flourish.

Although published by Reidel, this book is sold and distributed by Kluwer Academic Publishers.

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