

Book Reviews

Inorganic Chemistry of the Main-group Elements. *Specialist Periodical Reports of the Chemical Society, 1976, Volume 3*; Edited by C. C. Addison, price: \$ 79.75.

In general the lay-out of this volume follows closely on earlier volumes in that the main group elements are discussed according to their group of the periodic table. However the authors no longer claim that the treatment of the year's literature is comprehensive, but all "themes of current interest" have been included. Nevertheless this work must be considered as one of the most satisfactory sources of information on the year's literature. A considerable economy in size has been effected by grouping related references in the form of tables and lists. The presentation is uniformly excellent and in particular structural formulae are extremely well produced.

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Electronic Structure and Magnetism of Inorganic Compounds. *Specialist Periodical Reports of the Chemical Society, London, 1976, Volume 4*; edited by P. Day; 277 pages; price: £ 16.50.

The large majority of publications cited in this critical and informative volume are from 1973. The average gestation period of 33 months is the only weak side of an otherwise highly successful series. Whereas photo-electron spectra of gaseous and solid samples took a rapidly increasing share of the three previous volumes, they are not included this time, possibly for health reasons. Hence, the first 65 pages treat the original main subject of the series, electronic spectra. It is possible to agree with the authors that recent emphasis on high resolution at cryogenic temperatures results in a certain discrimination in favour of crystals showing sharp lines. The interpretation of absorption spectra seems strongly consolidated, insofar as theoretical progress in 1973 was quite stagnant, though it is interesting to note that electron transfer (here called charge transfer) bands now are socially acceptable. The short chapter by Denning about magnetic and natural optical activity is highly instructive for chemists working on transition metal complexes. The chapter by Gregson on magnetic susceptibility is (like previous years) mainly devoted to collective effects, but a compound index has been introduced for rapid orientation. A brilliant innovation is A. J. Thomson's chapter on luminescence properties of

inorganic compounds, occupying two fifths of the volume. It is indeed fascinating to see how much information can be obtained from compounds of the *d* groups, and even more so about lanthanides in crystalline and vitreous materials. Energy transfer and multi-phonon processes are thoroughly discussed.

To say a terrible pun, this series is more attractive than the other Specialist Periodical Reports exactly because the authors are not narrow-minded specialists, but produce a coherent and fluent description of recent progress. The competition with the alphabetic lists of computer output is frankly producing an impression of decline in the Annual Reports selecting references in a haphazard way, whereas this series shows critical sense and scientific expertise, and must be highly useful for all readers of *Inorganica Chimica Acta*.

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Gmelin Handbook of Inorganic Chemistry.
8th Edition - Main Series, System No. 11, Tellurium, Supplement Volume, Part B, Section 1: Compounds with Hydrogen, Oxygen, and Nitrogen.
Springer-Verlag, Berlin/Heidelberg/New York, 1976; 153 pages; price DM 337.

The main volume on tellurium published in 1940 is being supplemented now by the Gmelin Institute, *i.e.* part "B" contains data on the compounds. The present volume describes the hydrogen, oxygen and nitrogen compounds of tellurium. A series of physical data on the hydrogen telluride is followed by a chapter about alkali tellurides, which are, as well known, partly interesting as semiconductors and show photoconductivity in certain wavelength ranges. As the main part of the volume the presentation of the compounds of tellurium with oxygen follows. Monomeric and oligomeric oxides of the di- and tetravalent tellurium, oxides of the hexavalent as well as mixed oxides are described and arranged in it thoroughly. Among the telluric acids the orthotelluric acid $\text{Te}(\text{OH})_6$ certainly is the most interesting and accordingly it is described in detail. A short chapter about tellurium and nitrogen concludes the present volume. Only few nitrides, amides and nitrates are known and therefore are to be presented in the "Gmelin". Literature closing date: up to end of 1973; in many instances more recent data have been considered.

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