

the methods for production of tellurium. Where the extraction processes are complicated, they are illustrated by flow sheets. Chapter 6 deals with the purification of the element.

In Part II, Chapter 7 deals in a general way with lattice parameters and semi-conductive properties of the tellurides, whilst Chapter 8 deals with general preparative methods for the tellurides and purification techniques. Methods for producing single crystals and thin films of tellurium and tellurides are discussed in Chapter 9. Chapters 10–17 occupy a large part of the work and are devoted to physicochemical properties of the tellurides. Each chapter is allocated to the particular group in the Periodic Table in which the other component of the telluride lies. Phase equilibria, thermodynamic properties, mineralogy, and magnetic and optical properties of the compounds are discussed. Chapter 18 deals briefly with the toxicity of tellurium and its compounds.

For use in the electronics field, tellurium and tellurides of very high purity are required. This necessitates the use of techniques such as zone refining, and preparation of single crystals by the Czochralski or Bridgman methods. These techniques feature in the work, and apparatus for two-temperature zone purification and high-pressure crystal growing are illustrated. The energy gap, and electron and hole mobilities are perhaps the most important parameters for characterizing semiconductors, and such data for the tellurides are provided where possible.

There are many misprints, and errors are particularly prevalent where thermodynamic quantities are concerned. For example, the high heat of vaporization for liquid tellurium (p. 6) cannot be related to the vapour-pressure equation of Brooks, which is also given; the heat of vaporization of hydrogen telluride (p. 145), which presumably refers to the liquid, appears to relate to the sublimation equation. Thermal data for the formation of antimony telluride (p. 225) are inconsistent. Nevertheless, the authors have produced a comprehensive book containing nearly 1300 references, which is well illustrated and in which the data are presented systematically.

This work will serve as a useful source book for those whose interests lie in mineralogy or solid state chemistry.

E. H. BAKER

STRAKHOV (N. M.). *Principles of lithogenesis*. Vol. 3. Transl. from the Russian by J. P. Fitzsimmons and edited by S. I. Tomkeieff and J. E. Hemingway. Edinburgh (Oliver and Boyd) and New York (Plenum Publ. Corp.), 1970. xii+577 pp., 240 figs. Price £10.50.

The translation of the third volume of Strakhov's work on lithogenesis deals with the products of sedimentary processes in arid regions. It completes a trio that covers the realm of sediments in a way not only of interest to the sedimentologist but also to workers in many other fields of geology.

Strakhov's theme in this volume is that it is the authigenic and diagenetic minerals that are diagnostic of sediments deposited in arid regions, because they reflect the chemistry of the waters from which they were deposited. One's thought turns naturally to the evaporites as being the norm of arid zone sedimentation: but, as Strakhov emphasizes, saline deposits are the record of the extreme condition and there are all

gradations from mild aridity to this extreme. The early chapters therefore deal with the products of sedimentation from weakly 'mineralized' waters. The ball is immediately in the court of the mining geologist because discussion is directed to the genesis of strata-bound deposits of copper, lead, and zinc. The author synthesises the evidence of stratigraphy, palaeogeography, sedimentology, geochemistry, etc. to build up the argument that many of these ore bodies were the products of 'arid lithogenesis'. It is this broad-based approach of a man competent in many diverse fields of geology that characterizes the whole of the work.

Passing on through phosphatic sediments, carbonates, and bituminous sediments, the bulk of the book is concerned with saline deposits. Both recent and ancient evaporites are dealt with in detail and interrelated in a balanced manner. Of especial interest to the reader outside the U.S.S.R. are the valuable summaries of the works of Soviet geologists on their present day saline deposits.

Over the past twenty years sedimentology has been one of the rapidly developing fields of geology, and even within the past ten years many concepts have changed radically. In an era where authoritative books are appearing almost faster than they can be read, a work such as that of Strakhov's *Principles of Lithogenesis*, published nearly a decade ago, might be thought to be already outdated. Certainly many new facts have emerged, but the reader can interpolate these in the course of reading Strakhov, and these new facts take on added significance against the broad-based text. An expensive book perhaps, but a good long-term investment for it will be many years before it is outmoded or excelled.

Tribute must be paid to the translator, J. Paul Fitzsimmons, for the reader is left with the impression that both the style and the spirit of the author have been preserved.

D. J. SHEARMAN

HURLBUT (C. S., Jr). *Dana's Manual of Mineralogy*. 18th edition. John Wiley & Sons Inc., New York & London. 579 pp., 441 figs., 1971. Price £7.00.

The publication of a new edition of Dana's Manual is a welcome event. Already the best and most widely used introductory textbook of mineralogy, this latest edition maintains the high standard of its predecessors. Over the years this book has steadily grown by the addition of new material, and apart from the absence of data on the less common minerals it is now comparable in size and scope with W. E. Ford's 1932 edition of Dana's Textbook, originally a much more comprehensive work. The new material in the latest edition includes a chapter on crystal optics and a section on space groups, and the data given for individual minerals now include optical properties, cell dimensions, and the strongest lines of the X-ray powder pattern. The optical material will be the most useful, enabling the student to dispense with a separate textbook for this branch of the subjects. Together with the more advanced textbook by Deer, Howie, and Zussman, this volume will fill the needs of most geology courses.

The book is well written, well illustrated, and beautifully printed. Every student of geology and mineralogy should have a copy; unfortunately, few will be able to afford the price.

A. HAL