

generally. There is also a chapter on dislocations and crystal growth, which provides a useful background to the discussion of dislocation theories of polytypism.

Rival theories of polytypism are treated very fairly, and the final chapter makes it clear that no existing theory accounts for all the phenomena. The whole treatment is very readable, well illustrated, and maintains the reader's interest, in spite of some slightly annoying and sometimes trivial repetition. There are some curious mis-statements (of which perhaps the most remarkable is the statement that the vapour-pressure curve of sulphur comes to an abrupt end at the boiling point), but some of these are corrected on other pages, and they are mostly confined to the introductory chapters. In so rapidly developing a subject it is commendable that references in general extend to 1963 and references to the authors' own work to 1965. The book can be recommended both for general reading and to anyone interested in polytypism in minerals. Although the methods of structural investigation described are specific to the substances discussed, they may well inspire the development of corresponding systematic approaches in other systems.

E. J. W. W.

SINKANKAS (JOHN). *Mineralogy: A First Course*. London & Princeton (D. Van Nostrand Co., Inc.), 1966. xi+587 pp., 327 figs., 12 coloured pls. Price: 72s.

This book is in two parts of approximately equal length: the first part of 272 pages is devoted to concepts and methods, including consideration of atomic bonding, silicate tetrahedra, solid solution, mineral classification, crystal growth, crystallography, physical and optical properties, identification procedures, and a chapter on mineral associations. This is separated from the second part by twelve coloured plates, many of which are of doubtful use or relevance, for instance mudcracks in sandstone and a fossil fish, whereas those of minerals although generally good occasionally do little for the subject, for example augite. The second half of the book deals with descriptive mineralogy. Nearly 300 species are described: those most likely to be encountered during personal collecting activities or found in collections are given fullest treatment whereas the species that do not ordinarily appear in nature in good cabinet specimens are given brief treatment. This somewhat novel approach is backed up, however, by numerous clear annotated crystal drawings and by an abundance of very good black-and-white photographs of museum-type specimens. The emphasis on the avail-

ability of a mineral in fine specimens leads to the coverage of the plagioclase series in just over two pages while benitoite has almost equal space; zoisite is dismissed as 'a comparatively rare member of the epidote group seldom yielding cabinet specimens of interest', wollastonite is given nine lines without mention of its optical properties, but the more showy species rhodonite is accorded full treatment. The sections on occurrence tend to be geographical rather than petrological, thus marring the attraction of this text for students of geology, but in all fairness the introduction to the descriptive section describes it as being aimed to suit the needs of the amateur.

Although this book could not be unreservedly recommended for student use, it will nevertheless appeal strongly to many mineralogists, with its excellent illustrations of well-crystallized mineral specimens with full details of localities.

R. A. HOWIE

DEER (W. A.), HOWIE (R. A.), and ZUSSMAN (J.). *An Introduction to the Rock-forming Minerals*. London (Longmans), 1966. x+528 pp., 183 figs., 50 tables, 1 pl. Price: 70s. (cloth), 45s. (paper).

This book is a condensed edition of the authors' definitive five-volume work on rock-forming minerals and has been produced specifically as a text-book for students. The treatment of the subject is the same as that in the larger work, each rock-forming mineral being discussed from the point of view of structure, chemistry, optical and physical properties, distinguishing features, and paragenesis. Like the five-volume work, the chief value of the book is in the way in which it links descriptive rock mineralogy with petrogenesis. It could perhaps be described as a text on interpretive as well as determinative rock mineralogy.

The book follows the same structural classification as the larger work. The authors are to be commended for the way in which they have accomplished what must have seemed an impossible task of condensation from some 1800 pages of the five-volume work to the 528 pages of this students' edition. The pyroxene group, for example, which originally comprised some 200 pages of volume two, has been telescoped to 48 pages. This has been accomplished mainly by a reduction in the number of chemical analyses from 241 to 17. Similarly the amphibole group has been condensed from 172 to 44 pages. While the specialist on a particular group of minerals may feel slighted at the necessary reduction of detail, those for whom the book is intended will not be