

(19 pp.) deals with silicon carbide in similar detail. Diamond and boron nitride are included together in Chapter 10 (27 pp.), though apart from some similarities in their synthesis, properties, and uses, they might well have been given a chapter each. The recovery of natural diamond is described in detail, but more information on the production of synthetic diamond would have been useful, and the chapter gives less data on the properties of diamond than Chapter 8 does on the properties of alumina, despite the greater scientific and technological interest of diamond. Chapter 11 (8 pp.) deals briefly with miscellaneous synthetic abrasives, including carbides, borides, and oxides. The final three chapters cover the theory of grinding (19 pp.), evaluation of abrasive products (13 pp.), and the chemistry of grinding (10 pp.). There is a good reference list (though only one reference later than 1968) and author and subject indexes.

No doubt a few errors or misprints are almost inevitable in a technical treatise but some of the errors in this book are distracting—incorrect refractive indices of quartz (which incidentally is described as a shexagonal-hemihedral-trigonal-trapezohedral!) on p. 34, incorrect thermal expansion of silicon carbide on pp. 74 and 86, incorrect heat of formation of Al_2O_3 on p. 57. Hardnesses are variously quoted as Knoop values, kg/mm^2 , and Mohs' values. From its context the list of silicates on p. 120 refers to minerals with Mohs' hardness greater than 8, though nearly all of them are less hard. The physical properties of an almandine quoted on p. 36 do not indicate the range of values to be expected of abrasive garnet. The table on p. 54 is badly set out—the lower half is very difficult to read. The mathematical symbol for 'parallel' is variously, and often incorrectly, printed throughout the book. However, these are in the main trivial errors and do not detract from the value of the book in bringing together the literature from a wide range of sources. If the future volumes in the series are as well produced as this one they will be of use to all mineralogists as well as to the specialist technologists for whom they are intended. B. C. M. BUTLER

PHILLIPS (F. C.). *An introduction to crystallography*. Edinburgh (Oliver and Boyd), 4th edition, 1971. ix+351 pp., 537 figs. Price £2.25.

The text has been made more coherent by incorporating three appendices from the previous edition, and a brief, clear introduction to coloured symmetry has been added. There is a distinct improvement in the typography, particularly noticeable in the better presentation of headings in the text and of the general index. The captions of figures also have greater clarity, but, unfortunately, in some cases the negative sign above crystallographic symbols is so thin that it is barely visible (fig. 146); it is omitted in figs. 153, 154, and 490 and misplaced in fig. 152. There is also an error in the formula in the caption of fig. 214. The drawings have been greatly improved; the lines are sharp throughout, some figures have gained by enlargement and others are better displayed by allowing more space, achieved by a slightly larger format and an increase of 11 pages. The very minor criticisms do not deny the enhanced value of this acknowledged lucid textbook. A. F. SEAGER