

It starts with a compressed account of the codification of crystal symmetry and type. A reader not already familiar with the jargon would be well advised to study a more comprehensive text for this part. The 32 point groups with their corresponding stereograms are beautifully illustrated.

Chapter 2 on atomic planes and their indices is a clear account which even a student armed with simple trigonometry should be able to follow.

Chapter 3 called *Space Groups and X-ray Reflections* assumes a working knowledge of the subject matter of chapter 1 and contains a useful table of the conditions limiting possible reflections from crystals of the 230 space groups. A description of powder diffraction photographs is followed by nomograms designed to help in indexing the photographs obtained. The powder diffractometer is also briefly introduced.

The single-crystal X-ray goniometer is adequately introduced in chapter 4 but the reader is then diverted into an involved discussion of various problems encountered in orienting some of the more complicated types of crystal. Optical methods, which would be more readily understood after reading the next chapter (though this is not referred to) are brought in, as is vector manipulation, which is also better introduced in chapter 13 (again without any reference at this point). Atomic-plane mapping is introduced via vector multiplication without mention of the reciprocal-lattice concept. A discussion of interplanar angles is conducted in vectorial terms without reference to stereographic projection methods, although these are introduced towards the end of the chapter. A further three pages of this discussion are relegated to the Appendix. In conjunction with the Laue photographic method the use of Gnomonic projection and the Greninger net are described. The chapter is interspersed with well illustrated mechanical details of useful attachments to X-ray goniometers, for handling various types and shapes of crystals, and methods for examining crystal perfection. It concludes with discussion of some of the sources of error in measure-

ment, of which there is more in the *Miscellaneous* section.

A good account of the transmission of light through crystals and the various optical methods available for orienting them is given. A comprehensive account of materials required in crystal working is presented followed by a very useful compilation of reflecting planes, angles and corresponding reflection intensities for many commonly used single-crystal materials.

The section on sawing techniques is well illustrated but is somewhat out of date. No mention is made of large capacity annular saws, diamond-impregnated wire saws, or electroplating as a method of bonding diamond powder to saw blades.

A well-illustrated account of flat, cylindrical, spherical and doubly curved grinding and polishing is complemented by a good section on methods for checking flatness, squareness, angle and curvature of the resultant surfaces. The sophisticated lens-grinding machines available are not mentioned. Notes on calculating some of the physical properties of X-rays and crystals complete the chapter.

The contents list and index give a satisfactory guide to the book's 342 printed pages. The book is well produced, the only minor criticism of its legibility being the lightness and miniscule size of the sub- and superscripts which frequently are difficult to see compared with the main type. Some of the tables make no apology for being composed on an office typewriter.

It is a pity that some of the spare pages at the end were not used to provide a reference list of other books and papers which give fuller coverage to some of the subjects dealt with rather briefly. A list of suppliers of equipment and materials would also have been useful.

Anyone becoming concerned with the manipulation of crystals would find this a very useful addition to their book shelf.

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Books Received

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

Electron and photon interactions with atoms. Edited by *H. Kleinpoppen* and *M. R. C. McDowell*. Pp. xviii + 682. New York: Plenum, 1977. Price \$66.00.

Synthetic gem materials. By *M. O'Donoghue*. Pp. 215. London: The Worshipful Company of Goldsmiths, 1976. Price £12.00.

This is a somewhat undigested compilation of literature references, with occasional abstracts, giving information on substances, mostly crystalline, used, or usable for artificial gems, such as 'Diagem'. The 1750 entries are alphabetic, from alums to zoisite.

Solid electrolytes (Topics in applied physics, Vol. 21). Edited by *S. Geller*. Pp. xi + 244. Springer-Verlag, 1977. Price DM 72.00, \$33.20.

A review of this book, by A. T. Howe, has been published in the July 1978 issue of *Acta Crystallographica*, Section A, page 640.

Crystallography and its applications. By *L. S. Dent Glasser*. Pp. viii + 224. Wokingham: Van Nostrand: Reinhold, 1977. Price £12.00 (cloth) or £5.95 (paper).

A review of this book, by W. C. Bigelow, has been published in the May 1978 issue of *Acta Crystallographica*, Section B, page 1750.