intensities. Thus the overall computational accuracy of 5%, which the author recommends, will be required for very precise determinations only.

In the main part of the book the author discusses the different methods for computing one-, two- and three-dimensional syntheses by direct calculation or by Hollerith machines, and other mechanical, electrical and optical devices. This part contains many interesting ideas and may give valuable suggestions to those who are concerned with the development of new equipment for Fourier synthesis, and, indeed, for everybody who has repeatedly to carry out such calculations.

The second volume consists of tables of the function $\cos 2\pi hx \cos 2\pi ky$ in steps of $\frac{2}{48}$ for x and y between 0 and $\frac{1}{2}$. The reviewer regrets to say that this table is only of very limited use. In many cases a step difference of $\frac{1}{24}$ is not sufficient; an efficient use of the table can be made only if $F_{hk}=F_{h\bar{k}}$; and, finally, the usual method of splitting the two-dimensional synthesis into one-dimensional series works faster. (In a special case (with $F_{h\bar{k}}=F_{hk}$) 99 multiplications and additions had to be carried out using the usual method but 144 using the table.) The table will, however, be found convenient for calculating the density at a few points of a projection or for checking a machine calculation at a few spots.

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Krystallometrisches Praktikum. Grundbegriffe und Untersuchungsmethoden. By R. SCHROEDER. Pp. viii+199 with 156 figs. Berlin; Göttingen; Heidelberg: Springer. 1950. Price DM. 15·60.

This book is intended as an introduction to crystal geometry and morphology, and in particular to the geometrical methods and notation of V. Goldschmidt, which the author considers to be of outstanding usefulness. The first half of the book deals with general principles. The approach is not meant to be rigidly theoretical but to lead up to practical application; a good deal of historical matter is included. Space-group theory and the geometry of infinite lattices are not dealt with. The second half of the book gives a very full account of the two-circle goniometer, with details of its use and examples of calculations. Throughout, Goldschmidt's notation and the gnomonic projection are used in preference to Miller indices and the stereographic projection. The Hermann–Mauguin point-group notation is mentioned but not used.

A book like this, advocating geometrical methods which are regarded by most crystallographers as outdated, can hope to be persuasive only if it presents them with elegance and clarity; this it notably fails to do. It is difficult to see for what type of reader its style is really suited. While the first half is not composed as a rigorous argument from clearly stated postulates and definitions, it is yet too formal to make much use of examples from actual or idealized crystals. The beginner is not helped to visualize the shapes which are being discussed, nor is he given adequate definitions to enable him to construct them formally for himself. Symmetry is defined in terms of crystal faces, not face normals, and the difficulty that actual crystals rarely grow with faces of perfectly equal size is not even mentioned till a late stage in the discussion, when it is not adequately dealt with. The Law of Constancy of Angles is never explicitly stated, and the Law of Rational Indices appears rather late in a form which typographical errors have made almost unintelligible. No definition is given of a zone, though the term is used freely. An outline of how axial ratios may be calculated from measured angles is given for the general case of triclinic crystals only, and is expressed in a way which confuses sides and angles of the spherical triangles under discussion. The formulae for solving spherical triangles are nowhere collected together or stated in general terms, but are introduced as required in the examples without explanation of their source, though elsewhere in the book it is thought necessary to give at length the analytical derivation of the equation to a straight line.

When all these faults of presentation are added to the persistent use of the clumsy Goldschmidt notation, it is clear that the book is not to be recommended to the uncritical acceptance of a beginner. It should be useful to the experienced crystallographer who wishes to know something about the other systems of notation which he may meet in the older literature. Some of the discussions may be illuminating to the teacher of crystallography, particularly in their historical aspect, even where he disagrees with the author's conclusions. The detailed treatment of the two-circle goniometer, though somewhat ponderous, might perhaps be of use to anyone embarking on a series of systematic measurements.

The paragraphing throughout the book makes for difficult reading; the practice of making each sentence a separate paragraph destroys altogether the coherence of the arguments. Equations are not numbered, so that cross-reference is impossible. There are a good many slips and printer's errors.

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Books Received

The undermentioned works have been received by the Editors. Mention here does not preclude review at a later date.

Optical Crystallography. By E. E. WAHLSTROM. Pp. 247, with numerous illustrations. New York: Wiley; London: Chapman and Hall. 2nd ed. 1951. Price \$4·50; 36*s*.

Elements of Optical Mineralogy. Part II. Descriptions of Minerals. By A. N. WINCHELL and H. WINCHELL. Pp. xvi+551, with 427 figs. New York: Wiley; London: Chapman and Hall. 4th ed. 1951. Price \$12·50; 100*s*.

The Interpretation of X-ray Diffraction Photographs. By N. F. M. HENRY, H. LIPSON and W. A. WOOSTER. Pp. ix+258, with numerous figs. and tables. London: Macmillan. 1951. Price 42*s*.