faces normal to the vein walls, and in places are encrusted with other vein minerals. Beyond the margin are parallel growths of doubly terminated rectangular tablets of bavenite from 0·1 to 0·5 mm. in width and up to 1 mm. in length.

The faces observed (fig. 1) have been indexed using the unit-cell dimensions of Claringbull[1] and the orientation of Ksanda and Merwin.[2] As in the Swiss occurrences described by Claringbull[1] the mineral is elongated parallel to [001] with a perfect cleavage parallel to (100), the largest faces (010) modified by (120) are striated in the direction of the c-axis from repetition of the two forms. Crystals are terminated by bright faces of the form (041). The refractive indices α 1·584, β close to α, γ 1·590, optic plane (010), $\alpha = c$ [001], $2V\gamma = 48°$, and D_4^{19} 2·73 agree closely with published data.

The identity of the mineral was suggested by preliminary optical examination and confirmed by an X-ray powder photograph. A qualitative spectrographic examination showed calcium, germanium, aluminium, and silicon. Germanium was previously detected in bavenite from the type locality but not in Swiss specimens.[1]

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1 G. F. Claringbull, Min. Mag., 1940, vol. 25, p. 495.
2 C. J Ksanda and H. E. Merwin, Amer. Min., 1933, vol. 18, p. 341 [M.A. 5–474].

Relation between square net and Weissenberg net: a visual aid.

A very simple, easily constructed device enables one to demonstrate the relationship between the orthodox plane net with rectangular coordinate axes and straight grid-lines and the Weissenberg net with straight, mutually parallel coordinate axes and curved grid-lines. The apparatus consists of a card, on which is drawn a square net, and a cylindrical mirror (fig. 1). The dimensions of the various parts as used in this department are as follows: card 20″ × 20″, net 3 cms. square, mirror 5″ high × $1\frac{1}{2}$″

diameter. The dimensions are of course not critical and anything approximating to these values will give the desired result. The grid lines in the two axial directions should by preference be coloured or ruled differently. The mirror is easily constructed by nickel- or chrome-plating a polished brass tube.

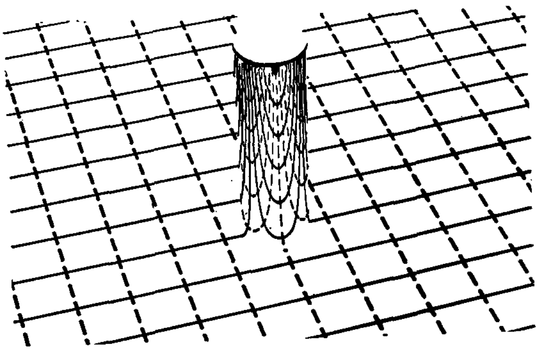

FIG. 1

The cylindrical mirror, when placed at the intersection of the coordinate axes with its axis perpendicular to the plane of the card, presents to the unaided eye an image of the plane square net in which the coordinate axes OX, OY, $O\bar{X}$, $O\bar{Y}$ appear as regularly spaced parallel straight lines, and the grid-lines $x = \pm 1, \pm 2, \ldots, \pm n$, $y = \pm 1, \pm 2, \ldots, \pm n$ are represented by families of curved lines in the fields limited by the parallel axes OY, $O\bar{Y}$ and OX, $O\bar{X}$ respectively. These are the characteristics of the Weissenberg net. The image presented here and the normal Weissenberg net differ only in the attitude of the coordinate axes: in this visual aid they are perpendicular to the base of the image; in the Weissenberg net they are inclined to the base of the net at an angle depending upon the translation coefficient of the camera used.

Although over most of the mirror field the image is fairly accurate one should, strictly, consider only that part of the image lying in the plane defined by the eye and the mirror-axis: e.g. when the eye: mirror-axis plane does not contain a coordinate axis of the plane net, that axis assumes a slight curvature in the image, especially at the bottom of the mirror and as a consequence does not appear to be parallel to any other axis viewed simultaneously (fig. 1). Thus the ideal complete picture of the Weissenberg-type image should be built up of a continuous series of such partial images viewed from all directions around the mirror. This may of course be achieved either by the observer moving round the stationary net and mirror or by the net with mirror being rotated about a vertical axis by the stationary observer. Further, the eye should be at such a height above the plane of the card that the image of the card edge is at or above the top of the mirror: the mirror will then be filled by the image.

Small dark disks may be placed on the square net in positions corresponding to those occupied by nodes of any layer of any reciprocal lattice: their corresponding positions on the Weissenberg-type net may then be observed in the mirror.

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BOOK REVIEWS

Stasiw (O.). *Elektronen- und Ionenprozesse in Ionenkristallen. Mit Berücksichtigung Photochemischer Prozesse.* Berlin (Springer), 1959. viii+307 pp., 107 text-figs. Price (bound) DM 66.

Volume xxii of the well-known series *Struktur und Eigenschaften der Materie* is written and produced according to the standard expected. There are many books on electronic and ionic conduction and diffusion processes in solid bodies. Professor Stasiw gives a complementary picture concerning photochemical reactions in ionic solids. The aim is to fit photochemical processes into the general picture of defect reactions.

The mathematical treatment adopted is comparatively simple; it deals with statistics of defects in ionic crystals, energy of the lattice and of its defects, diffusion, and ionic conductivity. A simplified picture of the band model for ionic crystals is presented, and the absorption spectra of the real ionic lattice and of the ideal lattice with stoicheiometric defects or with added foreign ions are considered. The semi-conduction process is treated in relation to structure, and there are sections on photoelectric conduction. Photochemical processes in pure ionic lattices, in lattices with impurities, and in mechanically deformed crystals are all considered. The subjects treated include photochemical changes in alkali halides irradiated with X-rays and photochemistry of silver halides. A special chapter deals with the relationship between defects and nuclear resonance.