XLVIII.—*On a Crystal of Diamond.*

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THE following description of a South African diamond crystal in possession of Dr. Roscoe, may prove worthy of record as showing clearly by the total absence of tetartohedral edges, its holo- and not hemihedral nature. The holohedrae of the diamond has been pointed out

by Hirschwald (*Zeit. f. Kryst.*, i, 212), and again by Sadebeck (*Zeit. f. Kryst.*, ii, 93), who refers the grooved edges to a laminated growth of the crystal.

The stone in question is perfectly colourless and transparent, has a diameter of 5 mm., and a weight of 0.248 gram. Fig. 1 represents it as truthfully as possible, while Fig. 2 shows the ideal crystal. The whole consists of eight individuals arranged in parallel position about a common centre; and with the exception of the two lying at the back of Fig. 1, are of very nearly equal size. Of each of the individuals, as nearly as possible one-half of the whole crystal is developed, so that the re-entering angles between the individuals, and still more the

FIG. 1.

FIG. 2.

little hollows at each of the octohedral corners, where four individuals meet, are very deep.

The only faces developed sufficiently well to allow of measurements being taken, are those of the octohedron; but these are exceedingly perfect, and allow of exact measurement. The following angles were measured on four faces lying in a zone, viz., A, B, and the two opposite faces (A) and (B) :—

$$\begin{aligned} A : B &= 109^\circ 28.7' \\ (A) : (B) &= 109 \quad 29 \\ A : (B) &= 70 \quad 31.5 \end{aligned}$$

The angles are so near those required theoretically, viz., $109^\circ 28.2'$ and $70^\circ 31.8'$, that the individuals must be considered as perfectly parallel.

All the octohedral edges are roughly rounded off, apparently by a hexakisoctohedron, which is in oscillatory combination with the octohedron. Thus the outer portions, at least, of all the individuals would seem to be built up of numerous laminae. Owing to this replacement of the octohedral edges, the smaller faces lying between the different

individuals are for the most part more or less completely obliterated, but nevertheless several of these small faces, both in the furrows along the octohedral edges and the depressions at the octohedral corners, are developed as perfectly as the large faces lying in the outer octants.

One other point is noticeable, namely, that on most of the larger outlying octohedral faces there are several more or less large triangular-shaped depressions, whose bounding edges are reversed to those of the face in which they lie, *i.e.*, parallel to the bounding edges of the opposite octohedral face. In consequence of this the crystal shows asterism, and a bright flame viewed through two opposite faces of the crystal is seen to be surrounded by six rays cutting each other at 60° .