Article IX.—NOTE ON AN INTERESTING SPECIMEN OF CALCITE FROM JOPLIN, MISSOURI.

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An interesting specimen of Calcite was recently added to the mineral cabinet of the Museum, which from one apparently novel feature, observed in it, merits description. The specimen is from Joplin, Missouri, and presents an irregular surface covered with pale-colored, quite indiscriminately related crystals, amongst which a few larger and darker-colored individuals are conspicuous. The calcite is associated with Marcasite and has apparently crystallized along the walls of a crevice in pyritous calcareous clay. Its formation is secondary to the iron sulphide which it covers. The carbonate of lime is pure, a scarcely perceptible residue being observed upon solution, so that the angles in the forms are normal. No orientation in the disposition of the crystals occurs, and the augmentation in color, a light straw tint, is proportional to the increase in the size of the crystals.

The crystals are combinations of two rhombohedrons—obtuse and acute—modified in the larger individuals by the incipient development of scalenohedral faces. Also in the large crystals the alternate faces of the acute rhombohedrons are unequally de-
veloped, and in two instances an interpenetration of two individuals occurs, producing a twinning, by the revolution, through 60°, of one. Blistered, roughened, and curved surfaces appear conspicuously in the large crystals. The outlines of the smaller crystals seem deceptively sharper, from the diminution of these irregularities in actual development.

The apparent crystallographic novelty in this specimen lies in the relation of the two rhombohedrons. The negative low rhombohedron—e (01i2, −1 2 R)—is superimposed upon the negative acute rhombohedron—Φ (0.14, 14.1, −14 R)—whereby the wider ends of the faces of Φ intersect e in a straight edge, and the narrower the same low rhombohedron in a V-shaped outline. The usual association, and that generally figured, is the negative rhombohedron e (01i2, −1 2 R) with the positive rhombohedron
\( \rho (16.0.16.1, + \bar{1}6 \text{ R}) \) whereby a precisely reversed position of the faces obtains. Fig. 1 represents the relation in the Joplin specimen, and Fig. 2 that commonly recognized. In other words, the ordinal positions of the rhombohedrons are unified, the acute rhombohedron, usually of a different order from the terminal low rhombohedron, itself negative, has become also negative by revolution, and is now coordinate with the apical termination of the crystal.

The identity of the acute rhombohedron is doubtful, as the angles cannot be measured with accuracy either by hand or reflecting goniometers. The negative form of \( \Phi \) is figured by Hally in his Traité de Mineralogie (Atlas, Pl. VII, fig. 34), 1823. The negative form of \( \rho \) has not, as far as I know, been observed, and in the necessarily doubtful measurements of these roughened surfaces, an error of observation of \( \gamma' \) (being the angular difference between \( \rho \rho' \) and \( \Phi \Phi' \)) is negligible.

The negative order of the low rhombohedron is demonstrated by the cleavage lines parallel to \( \frac{1}{4} \text{ R} \). A drawing of the natural size and proportions of one of the interpenetration twins is given in fig. 3, and in fig. 4 its ideal form. The blistered, creased, wrinkled, and pustulate surfaces seem to arise from repeated interferences in the growth of the crystal, and in places seem also referable to partial solution. Plate VI shows the entire group, two thirds its natural size.

The recent interest in Joplin forms, awakened by Dr. Farrington's treatise on these attractive crystals, excuses this slight contribution to their discussion.

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