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QUARTZ CRYSTALS FROM CENTERDALE, RHODE ISLAND

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AT Centerdale, about three miles west of Providence, Rhode Island, there occur quartz crystals showing an unusual number of forms. The rock in which they are found is a green schist, composed principally of bladed hornblende, somewhat altered to chlorite. There is an intrusive granite nearby, and pegmatite stringers and quartz veins from it cut the schist. The quartz crystals occur in small open cavities, and have doubtless been formed by hot solutions emanating from the granite. They are normally clear and colorless, but at times are more or less filled with tiny plates of chlorite, giving them a green color. Their complex form may be the result of the presence of so much chloritic material in the solutions from which they crystallized. All are right-handed, and twinned, as shown by repetition of trigonal pyramid faces on adjacent corners.

One of these crystals was submitted to measurement on the two-circle goniometer at Harvard University, and the writer's thanks are herewith extended to Professor Palache for his kind help in this work. The crystal was centered so that the reflections from the prism faces all fell on the vertical cross-hair, and the position of a possible basal plane was calculated by adding 90° to the angular position read on the horizontal circle for the prism. The values of the phi (φ) angle for each form were measured from one prism face, those of the rho (ρ) angle from this calculated base. The forms whose presence seems definitely established, with a few of their angular measurements, are listed here:

Prism m $(10\bar{1}0)$; usual rhombohedrons r $(10\bar{1}1)$ and z $(01\bar{1}1)$.

Steep rhombohedron f $(40\bar{4}1)$; observed 4 times, rho = 77° 48′ to 79° 19′, calculated 78° 52′.

Steep rhombohedron e $(50\bar{5}1)$; observed twice, rho = 80° 56′ and 81° 20′, calcd. 81° 03′.

Trigonal pyramid s $(11\bar{2}1)$; obs. 4 times definitely, and once as a vicinal face.

Trapezohedrons: F $(21\bar{3}1)$; obs. twice, the best one yielding phi = 74° 02′, calcd. 73° 25′, and rho = 19° 33′, calcd. 19° 06′.

u $(31\bar{4}1)$; obs. twice, the best with phi = 13° 57′, calcd. 13° 54′, and rho = 77° 08′, calcd. 77° 41′.

x $(51\bar{6}1)$; obs. once, phi = 9° 37′, calcd. 8° 57′ and rho = 82° 29′, calcd. 81° 57′.

There are also other forms, but the measurements were not sufficiently accurate to certainly identify them; of these $(21\bar{3}5)$, $(31\bar{4}3)$, and $(32\bar{5}3)$ may be noted as possibilities.

LIMONITE PSEUDOMORPHOUS AFTER PYRITE FROM LANCASTER CO., PA.

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WHILE the Boice farm is known to mineralogists all over the world by reason of the interesting specimens of pyrite found there, the report of a new locality where specimens in some respects similar in character and equalling in beauty and complexity those found at Boice's, will be of more than ordinary interest.

In Manheim township, Lancaster Co., Pa., immediately south of the Neffsville ridge and about three miles northwest of the city of Lancaster, are to be found loose in the soil nearly perfect pyritohedra, twinned pyritohedra showing reëntrant angles and combinations of cube, octahedron, and pyritohedron, of limonite pseudomorphous after pyrite.

The specimens from this locality are notable for their fine condition and size. Several specimens in the museum of Franklin and Marshall College, at Lancaster, measuring 40 x 40 mm. and 32 x 35 mm.; there is also a cube 83 mm. on one edge, but it is imperfect.

The color ranges from chestnut brown to deep purple-black and the crystals frequently show good luster on their faces.