

Article XI. — NOTES ON SOME SPECIMENS OF
MINERALS FROM WASHINGTON HEIGHTS,
NEW YORK CITY.

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Recent excavation at 171st Street and Fort Washington Avenue, New York City, has brought to light mineral specimens of more than local interest on account of their rarity or size or both, and the purpose of this article is to put on record some facts concerning their dimensions and occurrence. The minerals occurred in three pockets close together, aggregating eighty feet (about 24 m.) in length in a vein of coarse pegmatite in mica schist. The strike of the schist is about N. 30° E. (magnetic), and its dip 85° eastward, and the vein is essentially parallel thereto, with a maximum width of about 3 feet (1 m.). The body of the vein is granular gray quartz, feldspar (orthoclase), and flaky muscovite, in which were imbedded the specimens noted in the following lines. To Mr. William Niven is due the credit for discovering and exploiting the deposit.

Xenotime.—During the excavation of the roadbed of the new speedway along the Harlem River Mr. Niven¹ found a great many small xenotimes imbedded in oligoclase, and a few large ones, one of them being the largest ever found on the island up to that time. At the locality at present under discussion the xenotimes were fewer in number but averaged larger in size, and one exceeded the largest found on the speedway. The last mentioned crystal is 8 + mm. square, and its approximate height is 6 mm. It is a simple symmetrical octahedron composed of the unit pyramid. The color is clear yellowish brown, and the crystal is imbedded in granular gray quartz. A second crystal is 5.5 mm. by 6 mm. in horizontal dimensions, and has a semi-altitude of 3 mm. It is composed of the unit pyramid predominating with the unit prism well developed, and a second pyramid τ (311) indicated. It is imbedded in feldspar and mica. The third xenotime to be noted is a very perfectly preserved one imbedded

¹ Vid. On a new locality for Xenotime, Monazite, etc., on Manhattan Island. Am. Jour. Sci. III, 1, 75, 1895.

so as to show only one set of pyramidal faces. It is 7+ mm. long and 5 mm. wide with an apparent semi-altitude of about 3 mm., and is surrounded by the three minerals of the vein. The planes of all these crystals are pitted as if by etching.

Monazite.—This mineral, of good quality, was found in numerous small crystals and parallel growths. The largest crystal is translucent, clove-brown in color, and very perfect in its development. It is imbedded in quartz and feldspar. The portion exposed measures 13.5 mm. long and 6.5 mm. wide; the whole length may be 18 mm. The crystal is strongly columnar in habit and is not flattened on the orthodiagonal axis, as is so commonly the case in monazite. The planes present are a (110), n (120) and r (111) predominating, m (110) narrow and w (101) narrow and interrupted. A detached group of smaller crystals showing in addition to the planes just mentioned, the two clinodomes, e (011) and u (021), is 10 mm. in total height and 6 mm. in diameter. All the planes are more or less pitted.

Tourmaline.—Black tourmaline was abundant in the vein, mostly in small, brilliant crystals, but there were some large ones, of which one is worthy of note. It is 243 mm. long and 96 mm. in greatest diameter, the least diameter being 80 mm. It is a very simple crystal showing one termination consisting of the rhombohedra, r (1011) and e (0112). The body of the crystal is quite round, but on one side it has a small parallel growth, without terminal planes, extending about two-thirds of its length. At 164.5 mm. from the terminated end a seam of granular gray quartz from 5 to 9 mm. thick divides the crystal into two portions, but otherwise it is very compact. The matrix is granular gray quartz.

Miscellaneous.—Other minerals occurring here, in association with those already mentioned, are zircon in small long prismatic crystals, dumortierite, torbernite (?), autunite (?), apatite, muscovite, and garnet (almandite). The apatite is green in color, abundant, and is sometimes seen in small perfect crystals penetrating the tourmaline. As further indications of the large scale upon which the minerals crystallized at this locality, it may be mentioned that there were found several very large aggregates of garnets in parallel position, and crystals of muscovite fifteen centimeters and more in longest diameter. The largest garnet is about half of a single crystal which would measure 23 centimeters in axial diameter if it were complete. It is a trapezohedron with the dodecahedral planes well developed. The dumortierite occurs not only in the feldspar, but also as long filiform inclusions in the muscovite, singly and radiating from centers.