

NOTES AND NEWS

NEW AND INTERESTING MINERALS FROM CENTRAL NEW JERSEY

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The continued activity of quarries in the basalts of central New Jersey has brought to light a number of interesting occurrences during the last two or three years. In addition to this, old localities also have offered interesting material.

At the Arlington copper mine, north of the city of Newark, the writer has recently discovered covellite. This is in the form of small, bright blue plates characteristic of the mineral, on the surface of a massive gray shale stained with copper compounds. Covellite is new to New Jersey, so far as records of discoveries are concerned.

Barite, somewhat similar to that more recently found at Paterson, was formerly worked in prospect pits at Glenmoore, south of Hopewell, in Mercer County. The locality is marked on the Trenton Folio geological sheet of the United States Geological Survey. It is associated with an intrusion of diabase, and is locally brecciated by the extensive crushing due to the faults in the vicinity. Large fragments of white, cleavable barite have been used to fill up the roadbed and are scattered about in the vicinity. Recently an excellent crystallized specimen from this locality was discovered in the collection of the Rutgers University museum, the specimen having been given by the late Mr. F. A. Canfield. The specimen measures $15 \times 12 \times 7$ cm. and is covered with slightly yellowish tabular crystals which are 2 to 4 cm. across and 2 to 3 mm. thick. The largest face is the base *c*, with narrow brachypinacoid *b*, brachydome *o*, macrodomes *d* and *l*, and small faces of the prism *m*. The crystals are grouped in parallel position.

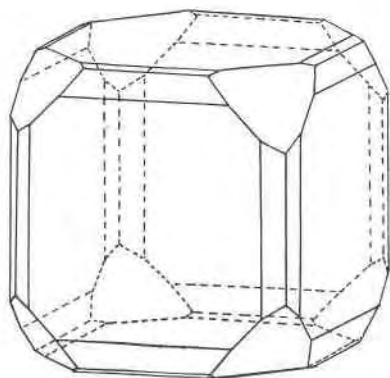


FIG. 1. Native Copper from Bound Brook, N. J.

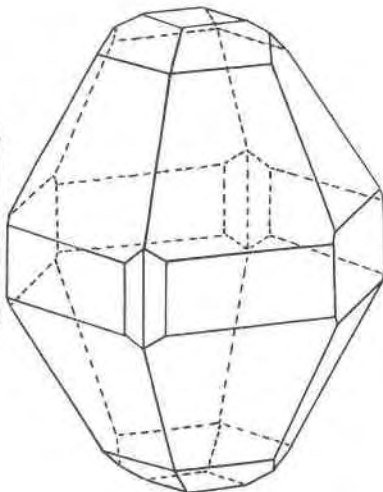


FIG. 2. Chalcocite from Bound Brook, N. J.

In the quarry of the Bound Brook Crushed Stone Company at Chimney Rock there are occasional specimens of calcite crystals which show interesting groupings. Most of the crystals are rhombohedral in habit, while some are scalenohedral. They are obtained at present from a large calcite vein which extends upward nearly vertically along the quarry wall, having filled the breccia in a fault which had a horizontal movement. Locally with and in the calcite there is crystalline bornite with chalcocite, one mass of which attained a thickness of 5 cm., and would make a good ore if there were enough of it. Native copper is also present in some abundance at times, plates of small size on the diabantite-coated joints of the basalt affording bright, attractive specimens. The largest plate of copper weighs 96 pounds, and is now in the Rutgers University museum, because it would not go through the crusher. Copper crystals 2 mm. in diameter obtained from the cavities of this specimen are simple dodecahedrons. Yet the most interesting and complicated copper crystals, obtained in 1928, came from a vein near the floor of the quarry. This vein was nearly horizontal, and occupied the junction between two flows of the basaltic lava. The vein was filled with crystalline prehnite and datolite, in which copper in small, untarnished sheets and crystals was locally abundant. In the cavities in this vein there were small black chalcocite crystals, which are evidently secondary, as is also the bornite in the calcite vein above referred to. Figure 1 shows the habit of the copper crystals. Many are simple cubes or cubooctahedrons with sharp angles, while others show the tetrahexahedron $f(310)$. Some crystals are twinned on the octahedron, and an especially good one, slightly more than 1 mm. in size, extremely flattened on o , like the galena twins from Freiberg, was measured on the two-circle goniometer. It proved to show large faces of the octahedron, and also relatively large ones of hexooctahedron (245). This latter form is new for copper; although it is a simple form in a prominent zone, and should have been observed occasionally on isometric crystals, so far the writer has found only one reference to it, on pyrite from Cornwall, Pennsylvania.¹ Among minerals it is therefore a form of rare occurrence. The chalcocite crystals associated with the copper are of interest because many of them are entirely simple. Others are twinned on m as is usual for the species. Figure 2 shows a typical simple crystal of chalcocite. It shows the unit pyramid p and the obtuse pyramid $v(112)$, with the unit prism m , brachypinacoid b , and brachydome d . The base c is small. Its most interesting feature is the appearance of two faces, well developed on a number of crystals, though small, of a new prism, $(10\cdot3\cdot0)$, located

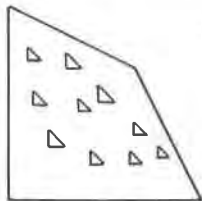


FIG. 3. Analcite from North Plainfield, N. J.
(One face with etch figures).

¹ C. Travis, *Proc. Amer. Philos. Soc.*, XLV, p. 131, 1906.

not far from the position of the macropinacoid. Other prisms of this series have been observed, but this one appears to be new among observed crystal forms.

A renewal of activity in the basalt quarry of the Wilson Crushed Stone Company, now operated by Mr. C. Lewis, at North Plainfield, Somerset County, has recently supplied a large number of calcite crystals with a variety of interesting forms and groupings. The study of these will be undertaken in the future. Operations have also begun to expose the zone of weathered rock where occur in vertical seams some of the zeolites including orange colored stilbite, small plates of heulandite, and groups of small natrolite crystals, showing the simple prism with the unit pyramid. The latest addition to the list of minerals from this locality is analcite, occurring in glassy transparent crystals 2 mm. in size, on stilbite. The edges of the analcite crystals, which are of simple trapezohedral form, are all modified by a narrow vicinal trapezohedron evidently produced by etching, and the crystal faces all show interesting triangular etch figures, shown in Figure 3, which represents one face only.

In the basalt quarry at Millington (Lyons Station), Somerset County, microscopic transparent analcite crystals occur on the walls of a vertical joint plane. Their form is the trapezohedron, but they show, in addition to this, occasional square faces of the cube. The rarity of cube faces on this mineral makes the discovery interesting. Natrolite crystals from Millington are quite commonly grouped in pairs in parallel position, showing a notch on each side of the crystal along the length of the prism. The crystals look like those of scolecite from Iceland and elsewhere which are twinned (since they are monoclinic). Investigation of natrolite from a number of New Jersey localities shows that this sort of grouping is quite typical of natrolite from these localities.

Grateful acknowledgement is hereby made to Mr. H. P. Whitlock of the American Museum of Natural History for the use of the goniometer and aid in identifying crystal forms.

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences, June 6, 1929.

A stated meeting of the Philadelphia Mineralogical Society was held on the above date with the president, Mr. Trudell, in the chair. Sixty persons were present including forty-three members.

Upon favorable recommendation of the council, the following were elected junior members: Messrs. Randall Heiligman, Harry Eissler, Jr., and Richard Archibald. Mr. Cienkowski proposed the names of Allen Bernheimer, Morris Naselaw, and Robert Williams.

Mr. Lester Strock addressed the society on "*The Spessartite Garnet of Avondale, Delaware County, Penna.*" The chemistry of garnets in general and the relation of their physical properties (specific gravity and index of refraction) to their composition was outlined, introductory to a detailed account of an investigation of the garnet of Avondale (Leiper's Quarry). An analysis showed the latter to consist of the following molecules: spessartite 61.6%, almandite 32.8%, and grossularite 5.6%.

Mr. Toothaker exhibited a rhyolitic obsidian from Oregon supposed to contain