ART. XXIV.—*Mineralogical Notes*; by B. K. EMERSON.1. *Limonite pseudomorph after diabantite, after anhydrite.*

Years ago I discovered anhydrite in large bluish-white masses in the trap at Larrabee's Quarry on the north line of Holyoke.* It is in tabular aggregates resembling cleavelandite, slightly radiate, but sometimes radiating so rapidly that plates bend 90 degrees in one inch. The plates vary from one-eighth inch thick to extreme thinness. It shows three perfect cleavages, and striated crystal faces. Pyrite and calcite are in the same cavities suggesting its origin. In many cases regular prismatic and tabular cavities occur in the zeolite-calcite aggregates in the cavities of the trap, which I have been accustomed to refer with doubt to selenite.† Recently I have received specimens from the third Westfield quarry, counting from the south, on hillock 380 feet above sea, and 1/2 mile north of the railroad, which show such cavities reaching 2 inches in length and width and 1/4 inch in thickness, but generally much thinner down to 1/32 of an inch. In several cases the enclosing mineral has penetrated the two perfect cleavages of the original mineral which are rectangular; the one parallel to the broadest surface, *c*, and the other at right angles thereto and parallel to the greatest length of the crystal, *b*. At times the exterior of this broadest face is preserved in a perfect cast which is striated like the *b* face of anhydrite and at other times it has been etched during enclosure so that the tracing of the two rectangular perfect cleavages parallel to *b* and *c* are well shown on *a*. The crystals were flat rectangular plates sometimes cut by a brachydome.

These cavities have been filled by diabantite which appears first in small tufts and then fills the space entirely, showing a central suture where the two growths have come together. These tufts are often altered to bright gold-yellow forms which I have described as diabantite-vermiculite,‡ and the complete fillings also show every stage of the change from fine fibrous green diabantite to a porous impure limonite, which latter is thus a pseudomorph by replacement of anhydrite, and by chemical alteration of diabantite.

The same negative forms have been found at the Cheapside quarry south of Greenfield in thinnest plates and in long stout prisms coated with datolite, or enclosed in the same. The blades are often over three inches long. The blades have also been inclosed in quartz and sometimes several quartz crystals

* Mineral Lex. Old Hampshire Co., Bull. 126, U. S. G. S., p. 26, 1896.

† Loc. cit., p. 90.

‡ This Journal, xxiv, 198, 1882.

have grown directly against the flat surface of a plate producing basal faces on the quartz which replace the pyramid entirely and take a sharp cast of the striated crystal face of the anhydrite.

2. *Paragenesis of minerals in diabase.*

A Quarry No. 1, Westfield.

1. Anhydrite in blades 2 inches long and 1 inch wide.
2. Massive transparent calcite.
3. Datolite massive and in one inch crystal.
4. Solution of anhydrite.
5. Diabantite replacing anhydrite.
6. Coarse wine-yellow dog-tooth spar. R^3 sometimes truncated at apex by R.
7. White coating of chalcedony.
8. Fine-grained white dog-tooth spar, R^5 , $\propto R$.
9. Change of diabantite to limonite.

B Cheapside Quarry, Greenfield.

1. Anhydrite in blades.
2. Quartz.
3. Solution of anhydrite.

C

1. Anhydrite.
2. Datolite and calcite.
3. Calcite.
4. Solution of anhydrite.

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