NOTES ON GAGEITE FROM FRANKLIN FURNACE, NEW JERSEY

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In February I received a small specimen which was labeled "pyrochroite and gageite, Franklin Furnace, N. J." Both minerals were in microscopic crystals in small cavities in a matrix of calcite, zincite and perhaps calcozincite, only large enough for a rakestraw mount.

It reminded me of a hand specimen in my cabinet consisting chiefly of the clear bright red "ruby zincite" in a matrix of granular franklinite in calcite, and containing some small cavities lined with microscopic crystals, which in 1897 I had labeled as consisting of two minerals unknown to me. Upon examining it I found they were evidently the same as the minerals in the small specimen above noted. One is in black crystals, apparently cubes or rhombs of small angle,[1] and the other, the gageite, in long acicular white or yellowish prisms either single, interlaced, or in divergent fan- or brush-shaped groups, resembling in habit the millerite from Antwerp, N. Y.

The gageite is chiefly superposed upon the black crystals, but it also occurs on the zincite or calcite in interlaced crystals as well as in the divergent clusters. The latter form attractive objects for the microscope, but require a fairly high power objective (inch or half inch), as the longest crystals in my specimens are not over one millimeter in length.

As an empirical formula for the mineral Dr. A. H. Phillips who described it,[2] gives $(RO)_8\ (SiO_2)_3.2H_2O$; he states that before the blowpipe the clear crystals assume at once a light bronze color which darkens to a deep bronze or nearly black, and in the closed tube it yields water with the same change of color. It seems probable that by means of these features other collectors may find this mineral to be present on specimens of Franklin Furnace minerals in their possession.

[1] The black crystals give a fine manganese reaction with a borax bead and give off much water in the closed tube.

[2] Phillips, Alex. H., "Gageite, a new mineral from Franklin Furnace, N. J.," *Am. J. Sci.* 30, 283–284, 1910.