THE SO-CALLED GENTHITE FROM WEBSTER, NORTH CAROLINA[1]

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The material described in the following brief note was collected recently by the senior author and seemed of sufficient interest to deserve investigation since it constitutes the principal nickel-bearing mineral of the so-called nickel mine near Webster, N. C. The mineral has been called genthite but the results of the present study indicate that it might more appropriately be called nickeliferous deweylite, although it has a crystalline metacolloidal structure whereas deweylite is supposed to be amorphous.

The mineral is from the well-known Webster dunite area that has been described by Pratt and Lewis in their paper on "Corundum and peridotite of western North Carolina."[2] It was collected about a quarter of a mile south of the Tuckasegee River and one mile west of Webster, Cowee quadrangle, North Carolina, where the dunite has been prospected for nickel.

The mineral occurs in partly altered dunite where it forms numerous films and veinlets a few millimeters wide and a few that reach a maximum width of 4 centimeters.

It is associated with a plastic micaceous mineral of pale green color and with siliceous sinter that has been precipitated in cracks in the dunite. This micaceous mineral will be investigated immediately and the results presented in a subsequent article.

The sample that was used in the analysis and on which the optical properties were determined was one of the largest and purest specimens secured. It has a conchoidal fracture and a faintly waxy luster. The color is apple green (variscite green of the Ridgway standard). A study in thin section shows that the mineral exhibits in remarkable perfection the structure that is commonly believed to indicate a metacolloidal origin. Other thin sections show that many of the film-like masses filling joint cracks

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[2] Pratt, Joseph Hyde; Lewis, J. Volney: N. C. Geol. Survey, Vol. I, pp. 92-95 (1905).

in the dunite are composed of complex aggregates of chalcedonic quartz and nickeliferous deweylite. Often the quartz is greatly predominant even when the aggregate is deep apple green in color. It is interesting to note that both these minerals have a metacolloidal structure. The nickeliferous deweylite is completely birefracting with a fibrous structure resembling some banded chalcedony, with the fibers forming parallel and radial groups. The mineral was formed in more than one stage, for several groups of veinlets of the same material cut the earlier formed material at various angles.

The mean index of refraction is 1.510 with a variation from 1.505 to 1.525. The birefringence is about 0.01, the optical character is (+) and the character of the elongation is (+). The mineral appears to be uniaxial but the structure does not permit an exact determination.

The analysis, made by standard methods upon a sample of ample size, gave the following results:

ANALYSIS OF NICKELIFEROUS DEWEYLITE

(E. V. Shannon, Analyst)

	Per cent
SiO_2	43.26
Al_2O_3 and Fe_2O_3	1.20
CaO	0.24
MgO	30.00
NiO	4.20
H_2O+	10.54
H_2O-	9.30
Total	98.74

The analysis shows that the mineral does not approximate the composition usually given for genthite. The water content separates it from serpentine and assigns it to deweylite. It is planned to examine several additional deweylites and to present the results together with a description of the so-called garnierite of Riddle, Oregon, in a paper which will shortly be published.