GANOPHYLLITE FROM FRANKLIN FURNACE, NEW JERSEY[1]

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In a previous paper by the writers[2] on some new specimens of rhodonite from Franklin Furnace, New Jersey, attention was called to a mineral referred to as a hydrous manganese silicate which however could not be identified, optically, as any known mineral. This material was present in very small amounts on two pieces of the rhodonite submitted for examination by Mr. Frederick A. Canfield, on one specimen presented to the Museum by Colonel Roebling and on one submitted for identification by Ward's Natural Science Establishment. Only the latter specimen contained enough of the unknown mineral to warrant a quantitative chemical analysis but only at the sacrifice of the entire specimen. Mr. R. B. Gage manifested an enthusiastic interest in learning the identity of the material and offered to purchase the specimen and surrender it for analysis. The matter was taken up with Mr. George L. English who, after consultation with Mr. Ward, informed the writers that the Establishment would be pleased to contribute the specimen for the purpose of the investigation.

It is a pleasure to here acknowledge the generosity of the Ward's Natural Science Establishment through Mr. Ward and Mr. English, as well as that of Mr. Gage.

The specimen was accordingly broken, and by hand picking and finally purifying by the use of heavy liquids, a sample of the mineral was secured for analysis that weighed 0.0735 grams. This could obviously be used only as a single portion and water consequently had to be determined by loss on ignition and, since the manganese was oxidized, as shown by the blackening of the ignited powder, the water determination doubtless gave low results. The analytical results are given below as well as those of the original Paisberg ganophyllite:

[1] Published by permission of the Secretary of the Smithsonian Institution.

[2] *Am. Min.*, 7, 152, (1922).

	1. Franklin Furnace	2. Paisberg.	3. Theory.
SiO_2	39.18	39.67	40.5
Al_2O_3	8.57	7.95	8.6
Fe_2O_3	trace	0.90	——
MnO	36.33	35.15	41.8
ZnO	3.67	——	——
CaO	2.04	1.11	——
MgO	——	0.20	——
Na_2O	——	2.18	——
K_2O	——	2.70	——
PbO	——	0.20	——
$H_2O+110°C.$	5.70	9.79	9.1
$H_2O-110°C.$	1.63		
	97.12	99.85	100.0

Aside from the low water shown by the ignition loss of the Franklin Furnace material, the agreement is very close. The analysis further serves to confirm the unique composition originally given for this mineral and shows that the alumina is an essential, integral part of the mineral.

Since the indices of refraction of the Franklin material were very different from those of the original ganophyllite,[3] new determinations were made on the specimen of Paisberg ganophyllite from the Holden Cabinet in the Harvard collections. The indices of refraction of a specimen of ganophyllite from Paisberg kindly loaned us by Col. Roebling are somewhat higher, $\beta = 1.608$. All the optical data are given below:

	Franklin (Larsen)	Paisberg (Larsen)	Paisberg (Hamberg [4])
Character	Biaxial negative	Biaxial negative	Biaxial negative
2E	Very small	42°	41°53′
2V	Very small	26°	23°52′
	Dispersion $\rho < \nu$, rather strong; $\rho < \nu$, easily perceptible; $\rho < \nu$		
Refractive Indices			
	$\alpha = 1.563$	1.573	1.7046
	$\beta = 1.593$	1.603	1.7287
	$\gamma = 1.593$	1.604	1.7298
Birefringence	$= 0.030$	0.031	0.0252
Cleavages	$\perp$ to Z	$\perp$ to X and Z	$\perp$ to X

[3] Hamberg, A., Mineralogische Studien, *Geol. Foren, Förh*, 12, 588, (1890).

[4] Hamberg, A., *Loc. cit.*, p. 589. The values of β and γ were determined on a prism with 30° angle but as no good polish was possible because of the perfect cleavage, a piece of cover glass was attached to the surface.

The agreement between the optical properties of the two is sufficiently close to show that the Franklin Furnace mineral is unquestionably identical with the very rare mineral ganophyllite. Palache[5] had previously identified ganophyllite from Franklin Furnace. Additional notes on the optical properties, pyrognostics, etc., as well as the occurrence, are given in the paper referred to above.

[5] Palache, Chas., Contributions to the mineralogy of Franklin Furnace, N. J.: *Am. J. Sc., XXIX* 187 (1910).

THOMSONITE FROM PEEKSKILL, NEW YORK

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Several years ago a party of students on a field trip near Peekskill collected some specimens of thomsonite, and I believe this is a locality from which it has not heretofore been reported. Locally it occurs two miles east of Peekskill and about five hundred feet south of Dalton's emery quarry, in an area termed pyroxenite by G. S. Rogers,[1] in his paper on the "Cortland series and its emery deposits." He however mentions a mineral occurring in some of his sections of a sodalite syenite, lying near the thomsonite locality, which from its optical properties he thought might be thomsonite, and from its hexagonal outline was believed to be a secondary product from nephelite.

OCCURRENCE. The thomsonite occurs in irregular angular cracks, possibly shrinkage cracks, which in some cases possess scoriaceous walls. It was preceded in its crystallization by some unknown mineral of tabular habit, the presence of which is now recognized by solution cavities both in the thomsonite and between it and the rock walls of the cavities. The thomsonite is of the usual radiated habit, some of the rays reaching four inches in length but without crystalline terminations. Now that the tabular mineral has been dissolved it is associated with no other mineral, but is coated with a thin film of a light colored clay, which has been mechanically washed into the cavities and gives the crystals a light yellowish color, but underneath this thin film the mineral is white and transparent with numerous capillary cavities elongated parallel to the vertical crystallographic axis, causing a slight silky luster.

[1] G. S. Rogers, *Annals N. Y. Acad. Sci., XXI*, 11, (1911).