

THE COMPOSITION OF THAUMASITE FROM GREAT NOTCH, NEW JERSEY

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THE mineral thaumasite, calcium carbono-silico-sulfate crystallizing with 15 molecules of water in the hexagonal system, has long been known to occur at West Paterson, New Jersey, analyses having been published by Penfield and Pratt in 1896.¹ Its presence at other mineral localities in the First Watchung Mountain basalt would naturally be expected. About 1908 a block 2 x 1 x 1 feet in size, and probably weighing originally over 100 pounds, was discovered in the Francisco Quarry at Great Notch. For some time this stood in front of the office, and the superintendent of the quarry permitted Mr. James G. Manchester, president of the New York Mineralogical Club, to break a few small specimens from it. The mass was subsequently broken up and distributed to various museums. Mr. Manchester kindly furnished the writer, thru Dr. Edgar T. Wherry, of the United States National Museum, a sample for analysis. The specimen from which this was broken has since been added to the collection of the National Museum (Catalog No. 92,955).

The material is minutely crystalline and snow white, and under the microscope appears quite homogeneous. Its indices of refraction² are $\omega = 1.505$ and $\epsilon = 1.468$, essentially identical with the values observed on other specimens. Analyses were performed by standard methods, two each by Mr. G. C. Foresman and Mr. J. C. Yon, of the writer's class in quantitative analysis, and one by the writer personally. The results are given in the following table:

TABLE I. ANALYSES OF THAUMASITE FROM GREAT NOTCH, N. J.

	1	2	3	4	5	6
CaO.....	27.0	26.78	26.88	26.07	26.65	27.18
MgO.....	.....	tr.	tr.	tr.	tr.	0.02
(Al, Fe) ₂ O ₃.....	.....	0.72	0.64	0.75	0.65	0.20
CO ₂	7.1	9.11	9.25	8.15	7.89	7.97
SiO ₂	9.6	8.68	8.85	9.14	9.14	9.36
SO ₃	12.9	12.62	12.74	13.91	13.72	13.03
H ₂ O (Below 100°).....	.....	.....	.....	.....	.....	0.32
H ₂ O (Above 100°).....	43.4	41.98	41.98	41.98	41.98	42.24
	100.0	99.89	100.34	99.80	100.13	100.31

1. Theory for CaCO₃.CaSiO₃.CaSO₄.15H₂O.
4 and 5. Analyses by Mr. Foresman.

2 and 3. Analyses by Mr. Yon.
6. Analysis by the writer.

¹ Am. J. Sci., [4], 1, 229, 1896.²As determined by Dr. Wherry.