

NOTE ON EXAMINATION OF SNOW WATER.

BY E. WALLER, PH. D.

During the first snow-storm of the past winter (December 19th, 1883) some of the fresh fallen snow was collected and submitted to examination. As the results may be of some interest to the members of the Society I beg to submit them.

The sample was collected in the yard at Columbia College after it had been snowing for some three or four hours, and snow was still falling. The ground was then covered to the depth of about four inches.

The snow was taken up without touching it with the hands, and placed in a large stoppered bottle, which was then closed and placed on the shelf in the laboratory until the snow had melted. It may be here noted that the surface beneath the spot from which it was taken was a graveled walk. The examination of the water was conducted after the larger particles of sand, coal from the engines on 4th ave. &c. had settled out. The water was slightly turbid. The results were (in parts per 100,000.)

Chlorine.....	trace	Free Ammonia.....	0.0396
Phosphates.....	none	Albuminoid Ammonia..	0.0318
Nitrates.....	none	Hardness.....	0.91
Nitrogen in Nitrates....	0.0494	Total Solids	6.3

The sediment from the water was collected. While it was settling a slimy fungoid growth collected at the bottom of the vessel which caused the sediment to adhere somewhat to the glass. To remove this the material was gently ignited and afterward examined under the microscope. The object aimed at was the identification if possible, of particles supposed to have come from the Java volcano, Krakatoa, which have been asserted to exist in the snow, &c., which fell in the early part of the winter. A specimen of the volcanic ash known to have come from that volcano was also examined under the microscope at the same time. A $\frac{1}{2}$ objective (Beck) was used. To my eye the only forms common to both the specimens were small, vitreous particles looking like broken up microscope covers.

I am, however, not familiar with the characters of volcanic ashes under the microscope, and may have missed what should be looked upon as characteristic. Judging from what was observed, it seems doubtful whether it could be safely asserted that the snow contained any particles which originally came from the volcano.