vations on the silica and organic matters of this river-water will be given in part III. It will be observed that in the above table the figures given for the first five waters are for 1000 parts, while those of the Ottawa are for 10,000 parts.

§ 46. In this connection may be given the analyses of two similar springs from Vermont,—the Highgate and Alburg springs. The waters were sent me in October and November 1861, and the results have already appeared in "Geology of Vermont," ii, 926. Both of these waters, when examined, were slightly sulphurous, and yielded the reactions of boric acid. The amount of carbonate of soda was estimated from the carbonate of baryta obtained by the process already mentioned in § 35.

	Highgate	Highgate.	
Chlorid of sodium	402		140
Sulphate of soda		• • • • • • • • •	.024
Carbonate of soda	235	•••••	.230
" lime	024		.036
" magnesia	010		.022
Potash and borates	. undet.	•••••	undet.
In 1000 parts	713		·452

§ 47. On the 5th January 1865, after a lapse of more than seventeen years, I again visited the three springs of Caledonia whose analyses have been given in the table § 43, and collected their waters for a second examination. The results of my recent analyses show that considerable changes have occurred in the composition of each of these springs, and tend to confirm in an unexpected manner, the theory which I long since put forward,that the waters of the second and third classes owe their origin to the mingling of saline waters of the first class with alkaline waters of the fourth class. It will be observed that the three Caledonia waters in 1847 were all alkaline, though the proportions of the carbonate of soda were unlike. Sulphates were also present in all of them, though most abundant in the Sulphur spring, which, although holding the smallest amount of solid matters, was the most alkaline. In January 1865, however, the first and second of these waters had ceased to be alkaline, and contained, instead of carbonate of soda, small quantities of earthy chlorid, causing them to enter into the second class. They no longer contained any sulphates, but, on the contrary, portions of baryta and strontia. Only the Sulphur spring, which in 1847 contained the largest proportion of carbonate of soda and of sul-VOL. II. No. 3. м