phates, still retained these elements, though in diminished amounts, and was feebly impregnated with sulphuretted hydrogen. If we suppose these waters to arise from the commingling of saline waters like those of Whitby and Lanoraie, containing earthy chlorids and salts of baryta and strontia, with waters of the fourth class, holding carbonate and sulphate of soda, it is evident that a sufficient quantity of the latter water would decompose the earthy chlorids and precipitate the salts of baryta and strontia present; while an excess would give rise to alkaline-saline waters containing sulphate and carbonate of soda, such as were the three springs of Caledonia in 1847. A falling-off in the supply of the sulphated alkaline water has however taken place, and the result is seen in the appearance of chlorid of magnesium and of baryta and strontia in two of the springs, and in a diminished proportion of carbonate of soda in the Sulphur spring.

These later analyses being directed chiefly to the determination of these changes, no attempt was made to determine the potassium, iodine, and bromine. For the purposes of comparison, the two series of analyses are here put in juxtaposition; the elements just mentioned being included with the chlorid of sodium, and the figures reduced to three places of decimals. The precipitate by a solution of gypsum from the concentrated and acidulated water was regarded as sulphate of strontia, and calculated as such, but was in part sulphate of baryta.

TABLE V.—SHOWING THE CHANGES IN THE CALEDONIA SPRINGS.

	1. Gas Spring.		2. Saline Spring.		3. Sulphur Spring.	
	1847.	1865.	1847.	1865.	1846.	1865.
Chlor. sodium.....	7.014	6.570	6.488	6.930	3.876	3.685
" magnesium	....	.024	....	.026	....	....
Sulph. potash	.005	....	.005	....	.018	.021
Carb. soda	.048	....	.176	....	.456	.091
" lime.....	.148	.096	.117	.095	.210	.077
" magnesia..	.526	.455	.517	.469	.294	.228
" strontia....	....	.009	....	.012	....	....
Silica.....	.021	.020	.042	.015	.084	.021
In 1000 parts....	7.762	7.174	7.345	7.547	4.938	4.123