

very soon to cause a marked difference in the levels of lakes embracing an area of upwards of 50,000 square miles, and draining a country more than four times as large again.

A glance at the seasons preceding the high water of 1836 and 1852, which differed only by 8 inches in Lake Ontario, will perhaps enable us to recognize the influence of climatic changes upon our lake levels.

The winter of 1835-6 may be said to have commenced on Nov. 23rd. On Dec. 1, the Bay was frozen over, being about a fortnight earlier than usual. The temperature of December was as follows:—3 days below zero; 9 between 10° and 20°; 15 between 20° and 32°; and 4 between 32° and 40°. January, 1836, was not remarkable for severity, the minimum being only 2° and the maximum 45°. This mildness was compensated by the rigour of the succeeding month, in which there were no less than seven days below zero, and only one above the freezing point at 8 A. M. March was likewise unusually severe, and the Bay was not clear of ice until the 25th of April. This winter may be said to have continued 155 days. During the whole period there fell no more than 1½ inches of rain; the number of days of snow was *thirty-four*.* In an admirable paper on the winter of 1851-2, Capt. Lefroy states that, "The winter of 1835-6, which is said, however, to have been the most severe in North America since 1779-80, was decidedly more severe than that of 1851-2. But the winter of 1851-2, was the most severe of any since 1835-6."

"So far, therefore, that winter, taken in its popular extent maintains its character for severity, but this results chiefly from our having excluded October, and included April. October, 1851, was unusually warm and genial, having had a mean temperature of 47°.8, which is 3°.3 higher than the mean for the same series of years, while April, 1852, has been one of the coldest in it."

It seems remarkable that during the year 1852, the quantity of rain which fell at Albany, was less in that year than since 1826. The greatest fall in any one year was in 1850, which amounted to 50.97 inches. The least fall during a period of 26 years was in 1852, which amounted to 31.79 inches, or not less than 8.85 inches below the mean of 26 years.† At Toronto, the rainfall in 1852 was also below the mean by rather more than one inch.

In continuation of the tables given on pages 26 and 53 we add the following:

Observations made at Gerrie's Wharf, by Mr. G. A. Stewart.

1853.

OCTOBER.

Day.	Hour.	Height of Water.	Wind.
15	3 P. M.	2.98	----
18	10 A. M.	2.90	----
20	10 A. M.	2.93	----
26	2 P. M.	2.90	West.
28	12 Noon.	2.90	----
30	12 Noon.	2.93	----

NOVEMBER.

Day.	Hour.	Height of Water.	Wind.
1	2 P. M.	2.88	----
2	4 P. M.	2.78	----
4	4 P. M.	2.72	----
5	11 A. M.	2.72	----
7	4 P. M.	2.70	----

Day.	Hour.	Height of Water.	Wind.
10	10 A. M.	2.79	----
12	10½ A. M.	2.76	----
14	3 P. M.	2.68	----
15	2 P. M.	2.77	----
19	2 P. M.	2.75	----
21	10 A. M.	2.82	----
22	9 A. M.	2.81	----
25	12 Noon.	2.76	----
29	11 A. M.	2.82	----

DECEMBER.

Day.	Hour.	Height of Water.	Wind.
1	1 P. M.	2.58	----
5	11 A. M.	2.62	----
8	12 Noon.	2.65	----
13	11 A. M.	2.60	----
15	11 A. M.	2.60	----
16	11½ A. M.	2.62	----
17	11½ A. M.	2.58	----

The maximum altitude registered by Mr. Stewart occurred on the first day of June, 1853. The difference between the water level on that day and on December 17th is 2 feet 1 inch, which represents the fall of the water during a period of six and a half months. During the last two months, it has fallen only five inches, and the probability is that its minimum for this winter has already very nearly been attained.

It is, perhaps, worthy of note that Mr. Murray, the Assistant Provincial Geologist, in his report for 1848, states that there were indications in the water marks of both Lake Huron and Lake Nipissing that they have "sunk considerably below their ancient levels," and that a corresponding fall could be traced in each successive lake of the chain between them. Lake Nipissing is 69 feet above Lake Huron, into which it empties itself. The difference between the level of Lake Huron in 1848 and the "ancient level," as indicated by water marks on the beach and rocks, was 4.10 feet. In Lake Ontario, the low water mark of 1848 was 3 feet 6½ inches below the maximum level of 1852, and 4 feet 2½ inches below the minimum level of 1853, as will be seen by comparing the data given in the September number of the *Journal*. It will also be remembered that the maximum level of Ontario in 1853, was exactly equal to the maximum level in 1836, may not therefore the "ancient level" which Mr. Murray observed registered on the rocks of Lake Huron be that of 1836, or 1838, which appears to have been the year of maximum level for Lake Michigan, as recorded by Dr. Houghton, who gives the difference between the levels of 1819 and 1838, at 5 feet 3 inches. The level of Ontario in 1838 we have not been able to ascertain,—probably it was higher than in 1836. With regard to Lake Nipissing, the connection appears even more probable; Mr. Murray, in 1848, made the following measurements against a vertical rock:

	FT.	IN.
Spring mark of 1848, over existing summer level of 1848.....	2	0
Old mark, above the spring mark.....	3	9
Old mark above existing level.....	5	9

The difference between the maximum level of Lake Michigan in 1838, and the old water-mark of Lake Nipissing, being only 6 inches, renders it highly probable that the height of the water of the year 1838 is registered on the rocks of Lake Nipissing—as it is not to be supposed that so easily obliterated an object as a natural water-mark, on a perpendicular rock forming the shore of a lake would be of very ancient date,—without

* From observations by the Rev. C. Dade.—*Vide Scobie's Almanac*, for 1851.

† *Regen's Report for 1853.*