

HEIGHTS OF CANADIAN LAKES ABOVE THE ATLANTIC
OCEAN (MEAN LEVELS).

There has hitherto been misconception as to the elevation of the several great lakes. Not only have these heights been incorrectly stated in connection with the datum of the mean ocean level of the Atlantic, but they are relatively at variance with the true record; that is to say, the difference of level of one lake with the others is in complete disaccord with the differences indisputably established by the United States Government. To speak more plainly, the official figures we have followed in Canada are incorrect. The subject has been carefully examined by Mr. Walter Shanly, C.E. I am indebted to his labours that I am able to give the information I am appending.

The true levels above mean tide in the harbour of New York were established by the operations of the United States Government in 1875. A quarter of a century back there was a discrepancy in the reported levels of lake Erie. The height above the Atlantic Ocean mean surface at New York was given by the United States engineers at 573 feet. Canada claimed that it was 564 feet over tide water at Three Rivers, the equivalent of 579 over New York datum. Of the correctness of the United States view, there could be no doubt, as it was based on the levels taken during the construction of the Erie Canal. In canal construction the closest nicety of measurement is indispensable. On the contrary, in railway engineering there is often more *laissez aller* work, owing to the ease with which a discrepancy in a grade can be adjusted; an impossibility in canal operations.

The figures we follow in Canada were furnished by Mr. Killaly, the chairman of the board of works appointed by Lord Sydenham, in his first report of the public works in December, 1844. The elevations there given by him of the several lakes have remained as accepted facts, and no official efforts have been made to verify, or to examine them.*

In 1875 an appropriation was made by Congress to determine the true heights of the great lakes by running a series of levels, so all doubts concerning them should be set at rest, and the altitude of the lakes relative to each other, and to the mean surface of the ocean at New York should be permanently established.

The supervision of the survey was entrusted to engineers of the U.S. topographical corps.† Every care was taken to authenticate the divisions of the levelling rods, while check levels were carefully run. To assure correctness two distinct parties worked in the field independently of each other, in one instance

* Journals House of Assembly, Vol. IV., 1844-5, Appendix AA. No. 2, 1865.

† The work was carried on under the direction of the War Department. The officers selected by the Chief of the Bureau to take charge of the levelling parties were captains Lehnertz and Wheeler. The report of the survey is to be found in the War Department documents, 1882. The plan laid down for assuring accuracy of result was perfect; the care with which the work was performed, beyond praise. It establishes the true altitude of the several waters in so entirely satisfactory a manner, that for the Canadian Government to undertake the work over again would be a needless and inexcusable misapplication of public money.