

To GEORGE M. DAWSON,
Director, Geological Survey of Canada

SIR,—I beg to submit herewith my report on Altitudes in the Dominion of Canada. It is accompanied by a relief map of North America on a scale of 250 miles to 1 inch, and four sheets of profiles of the St. Lawrence system and of the Canadian Pacific Railway, this railway being chosen as showing the profile of the country along the only trans-continental line in Canada. The work of which this is the result was begun in 1894 as a private investigation, but I am happy to avail myself of your kind offer in regard to publication.

It is not presented as absolutely accurate, but as the best possible interpretation of the conflicting evidence available at the present time. Errors in the field and in the office necessarily prevent absolute accuracy, but every effort has been made, by comparing the railways at all crossings and wherever they touch lakes, whose elevation has been well determined, to eliminate or minimize these errors. In a few instances it has been found necessary to run lines of levels in the field to determine the elevation of track above mean tide and to connect the levels of independent lines. With the exception of the levels run by Mr. R. Steckel of the Department of Public Works nothing has been done in Canada in the way of precise levelling, though the levels of the Canadian Deep Waterways Commission are of a high degree of accuracy. Special mention should also be made of the re-levelling of the Grand Trunk Railway, in 1878, and subsequent years, the average error, with one exception, being less than one foot. In 1883-86 Mr. Steckel ran a line of precise levels from Rouse Point to Quebec via Sorel, and from Sorel to Lachine. Subsequently he continued this line from Quebec down the St. Lawrence to Gaspé. The results of the Quebec-Gaspé line are, however, still unpublished.

In 1884 Mr. J. W. Spencer published, as Bulletin No. 6 of the Geological Survey of the United States,—a pamphlet of 43 pages—a 'List of Elevations in the Dominion of Canada.' This, however, only included a number of railways now merged into the Grand Trunk Railway and the Ontario Division of the Canadian Pacific. In 1889 Mr. Warren Upham published, as an appendix to his report on 'Glacial Lake Agassiz in Manitoba,'* tables of altitudes in the southern portions of the North West Territories. They have since been republished as part of his report on 'Altitudes between Lake Superior and the Rocky Mountains.'† The above constitute practically all the compilations covering a considerable area of the Dominion.

* Geological Survey Report, Part J, Vol. IV., 1888-89.

† Bulletin of the United States Geological Survey, No. 72.