

the Pollution of Boundary Waters Investigation; the St. Lawrence Navigation and Power Investigation; the Lake of the Woods Investigation; the Trail Smelter Investigation, and several others. No questions have as yet been brought before the Commission under the terms of Article X.

Under Article VI the Commission is also charged with the measurement and division for irrigation purposes of the waters of the St. Mary and Milk rivers, in Alberta and Montana. Owing to certain ambiguities in the language of the Article, difficulties were found in bringing this problem to a satisfactory conclusion, but finally the Commission, by bringing together on the spot those directly interested, worked out a practicable compromise that proved generally acceptable.

The Treaty, and with it the Commission, may be terminated by either country on twelve months' notice; but it is safe to say that, as they have proved themselves most effective measures for peace and good-will between Canada and the United States, they are not likely to be discontinued.

### Section 13.—The Geodetic Survey of Canada.<sup>1</sup>

For a long time prior to 1905 efforts had been made by the Department of the Interior towards commencing a geodetic survey in Canada; finally, in 1905, these efforts were successful, and the late Dr. W. F. King was authorized to start triangulation and precise levelling operations in the vicinity of Ottawa. In 1909 the Geodetic Survey of Canada was organized by Order in Council and Dr. King was made its Superintendent. After his death Mr. Noel J. Ogilvie was appointed Director on Oct. 4, 1917.

The principal functions of the Geodetic Survey of Canada are:—(1) the obtaining of precise geodetic latitudes and longitudes of points throughout the Dominion of Canada, together with its coast-lines and large waterways; (2) the determination of elevations of points above mean sea-level; (3) to serve as a horizontal and vertical control for all kinds of engineering work; (4) to assist in the determination of the size and shape of the earth; (5) to investigate such scientific problems as may arise, *e.g.*, the theory of isostasy.

The Geodetic Survey provides an accurate basis for all surveys in Canada, federal, provincial, municipal and private, so that any cumulative errors of various surveys may be localized so as not to cause serious discrepancies in the production of maps and charts.

Before the geodetic survey of Canada was commenced, various surveys employed methods suitable to their particular requirements. Such surveys, being for different purposes, were of various degrees of accuracy, and when fitted together to make composite maps confusion was the natural result. Also, when surveys extended over long distances cumulative errors crept in, and were discovered only when one survey joined other surveys started from other points. The only way in which these errors can be avoided is to have them checked at intervals by a survey of superior accuracy, and this is one of the functions of the Geodetic Survey of Canada.

<sup>1</sup>For a list of the publications of the Geodetic Survey, see p. 1032.