

REPORT OF PROGRESS

SURVEY OF TIDES AND CURRENTS IN CANADIAN WATERS

OTTAWA, 13th April, 1896.

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SIR,—I have the honour to submit the following report on the progress of the Survey of Tides and Currents in Canadian Waters. My last report, dated 31st October, 1895, described the progress made in the extension of the system of Tidal stations, and in the preparation and publication of Tide Tables; but with reference to the Survey of the Currents it was only possible at so early a date, immediately at the close of the season, to give an outline of the work as undertaken. On this account the results were compiled as soon afterwards as possible in a summary form, and issued as a "Notice to Mariners." (No. 65 of 1895; dated December 20th.) This notice was distributed as widely as possible; and a sufficient number of copies were also supplied to eight leading Transatlantic and Gulf-port steamship companies, to enable them to place copies in the hands of all their Captains.

A new departure was made this year in supplying tide tables for Halifax and Quebec, based upon the work of this Survey, to the leading Almanacs for publication. As this is the first time that tables derived from direct observation of the tides have been made available for any Canadian ports, a "Notice to Mariners" (No. 1 of 1896; dated January 8th) was issued; explaining the nature of these tide tables, and mentioning the Almanacs in which they are to be found. This notice was sent to thirty-eight publishers and agents for Almanacs in this country, Great Britain, Europe, and the United States; and was also supplied to all the Pilots in the Montreal and Quebec corporations; and to twenty-one steamship companies or their agencies, on the St. Lawrence route or at Halifax.

In the present Report, I will endeavour to give in a complete form, but as concisely as possible, the results obtained during the season of 1895. These will be more readily understood if a general description is first given of the nature of the currents in the Gulf of St. Lawrence, based upon the investigations of both seasons, 1894 and 1895, since this work was begun.

CHARACTERISTICS AND MOVEMENT OF THE WATER IN THE GULF.

The currents have now been examined at the two entrances to the Gulf, namely the Strait of Belle Isle, and Cabot Strait between Cape Breton and Newfoundland; and also at its third angle, in the passages lying between the Gaspé coast and the Mingan shore, which connect the St. Lawrence River with the Gulf. The endeavour has also been made to trace any general set or drift which may lie across the area of the Gulf from one to another of the above entrances.

The current in the Strait of Belle Isle has proved to be fundamentally tidal in its character, and when undisturbed by heavy winds it turns regularly with the tide, and runs out and in through the Strait with velocities which are nearly equal. The