

geodetic levelling done by Mr. Steckel, by which the levels have been carried across the river from the old Admiralty bench mark to the dry dock at Lévis, on which the tide gauge stands. At Halifax, three datum planes exist; as the city datum and the Royal Engineers' datum are both of them distinct from the Admiralty datum. The tides will be brought into closer relation with the Admiralty datum as the new observations proceed.

A sufficient record at St. John, N. B., has now been obtained to warrant its use for the calculation of tide tables for that harbour. If it had been possible to afford the necessary outlay for the reduction of this record, tide tables might also have been prepared for St. John for 1896.

Facsimile copies of the records from two tide gauges erected on the Pacific Coast by the Department of Public Works, are regularly transmitted to this office through the kindness of Mr. L. Coste, chief engineer of that department. These records are obtained at Victoria, B.C., and in the Strait of Georgia, at the mouth of the Fraser River. They are being kept on file until the records themselves are sufficiently extended, and funds are made available, to enable them to be used for the preparation of tide tables.

It is very important that tidal differences should be determined at once for other points, with reference to the principal stations at present in operation; but unless more money is made available for the purposes of this survey, it will only be possible to extend the work and to improve the accuracy of the tide tables by very slow degrees.

SURVEY OF THE CURRENTS.

In commencing the survey of the currents last season in the Gulf of St. Lawrence, one of the most important objects at the outset was to ascertain whether any general current existed across the width of the gulf; or what general circulation there was in the gulf area as a whole. With this knowledge as a basis, the nature of the currents in any special region could then be investigated with intelligence, and with greater hope of success. The main lines across the gulf on which it appeared most probable that some such general current might be found, also coincided with some of the more important steamship routes, which gave additional importance to their examination. Accordingly, during last season (1894) the currents were examined in the two main entrances to the gulf, at Belle Isle and off Cape Breton, to ascertain whether any continuous current passed through the gulf to the west of Newfoundland. No evidence of a general current in this direction could be found; while the indications off Cape Breton pointed to the greater probability of a general current across the gulf in the other direction, namely, on a line from the mouth of the St. Lawrence at Gaspé past Cape Breton into the Atlantic. This was investigated during the present season (1895) and much information was also obtained regarding the currents between the Gaspé coast and the island of Anticosti.

As the work of these two seasons has thus had the same general object for one of its purposes, it will come within the scope of the present report to include an outline of last season's results. Also by repeating the substance of the information with regard to the Strait of Belle Isle, a more extensive circulation can be given to it; as it appears necessary to place more reliance upon the direct circulation of these reports. The results of last season's work were communicated to the Hydrographer of the Admiralty, and to the United States Hydrographic Office; but it requires time before the information can be introduced into new editions of the Sailing Directions, and so reach the commanders of vessels interested. Copies of the report were also sent to the managers of the leading steamship companies; but such wrecks as the ss. "Mexico," ss. "Dracena," and ss. "Mariposa," which have occurred this season, so far as they may be attributable to the currents, show the need of making still more widely known if possible whatever information regarding the currents is obtained by means of this survey.

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Sailing Directions (189
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