

benefit our 1900 tables; but use will be made of the data given there, in our Tide Tables for 1901, and acknowledged to your survey.'

The Consul for Sweden and Norway made request for a number of sets of Tidal Survey reports for distribution amongst Norwegian steamers employed in the coal trade between Montreal and the Lower Provinces. A sufficient number of reports were sent in reply; as well as further information asked for, regarding Belle Isle strait and the Bay of Fundy. In acknowledging these the Consul says:—'I shall make it part of my duty, as far as lies in my power, to distribute these amongst Norwegian steamers to whom they may be of the greatest interest.'

On request of the secretary of the Pilotage Commissioners of St. John N. B., thirty copies of the tide tables in which St. John is included, were sent for the information of the pilots at that port.

The tide-levels, which have always to be carefully worked out for the reduction of the tidal observations, often prove of important service also, in connection with harbour works; as the following requests for correct tidal levels will indicate:—

Mr. A. J. Stevens, I. C. R. engineer, in determining the depth required for the Intercolonial railway docks at Richmond, and the Deep Water terminus at Halifax, makes request for: 'A low water datum which can be relied upon for security to ships, by shippers and the railway alike. These docks are used by the largest ships upon the Atlantic. They must never touch bottom.'

Major Roberts, superintendent of signals at Halifax, required to carry the low-water datum over to St. George's island; and also desired information from which to make a table of the half-hourly height of the tide; which was supplied.

Mr. C. E. W. Dodwell, Resident Engineer of Public Works for Nova Scotia, applied for the elevation of high water at ordinary spring tides, at Windsor, N. S.; for reference in connection with works in progress for the improvement of that port.

On application from Mr. E. T. P. Shewen, Resident Engineer of Public Works at St. John, N. B., some three hundred readings of the height of the tide have been supplied to him, from the tide gauge at St. John; in addition to the series mentioned in a former report. These were required for the reduction of soundings taken for the survey of that harbour.

These may serve as examples of the accessory ways in which this Survey often proves of value, in addition to its direct service to the shipping interest.

THE PRINCIPAL TIDAL STATIONS.

These stations have been in continuous operation throughout the past year, with some minor exceptions. The stations at Forteau bay in Belle Isle strait, and at St. Paul island, Yarmouth, Father Point and Quebec, were inspected this season by myself or Captain Douglas; and some important work done, which will better insure the continuity of the tidal record, and enhance its value.

At Forteau bay in Belle Isle strait, the tide-gauge had settled when the gauge was damaged by a gale in November, 1897; and it was afterwards levelled up, when the new crib-work was built in September, 1898. The levels being thus disturbed, there was no longer the means of reducing the observations to a uniform datum. Even the wharf-gauge scale itself had been altered in elevation, in making the necessary repairs. The distance from Ottawa to Forteau bay has now been reduced from 2,100 miles to 1,600 miles, by the new route via North Sydney and the west coast of Newfoundland; but owing to the steamer connections being out of order this season, through an accident to one of the vessels in the service, a full month was taken up, after reaching North Sydney, to secure ten days at Forteau bay. It is thus something of an undertaking to visit this station, as it breaks into the time in the most important part of the year.

Owing to uncertainty in the levels, because of the changes above noted, the tidal record at Forteau bay for a period of two years, was deprived of nearly half its value. The special object in visiting the station was, therefore, to re-determine the levels as far back as 1898, and thus to restore the continuity of the datum. It was a problem

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