

To this use of chronometers, the success of the season's work is largely due; and no part of the tidal record had to be rejected as unreliable through uncertainty in the time. The time used throughout, was Eastern Standard, for the 75th meridian. All the time-differences between stations are thus in absolute time.

Supervision.—The instructions drawn up for the observers, provided for observations of such a character as to secure an independent check on the working of the recording instrument. The correct setting of the instrument at the time, can thus be verified afterwards in the office. A further advantage as regards supervision, was secured by making Rivière du Loup headquarters for the season. It is situated in the middle of the region; and being a divisional point on the railway, the trains in both directions are convenient; and the river steamers also call at the wharf. The tidal returns were sent there; and any want of accuracy could be detected at the time, or a station could readily be visited if trouble occurred. The full advantage of this arrangement was not obtained however; as it was necessary for me to leave for a month in the middle of the season to visit one of the principal tidal stations at Forteau bay in Belle Isle strait. Mr. Hayden, who had assisted me in the erection of the tidal gauges, was left in charge at Rivière du Loup during my absence. We were also both absent for a week in August, while taking the special observations at Father Point, already referred to; which it was convenient to secure while in this region.

Results.—When the observations now secured are fully worked out, there will result in the first place, trustworthy tidal differences by which the time of the tide along the Lower St. Lawrence will be correctly known. This will then enable the time of the turn of the strong tidal currents to be determined also, as already explained; and it is in this that the chief value of the work to navigation, will consist.

The tide-levels, which have to be worked out in the reduction of the observations, will also be of practical service. These levels have been referred to the original Admiralty bench marks; a list of those on the Lower St. Lawrence being kindly furnished by the Hydrographer to the Admiralty. The primary importance of these bench marks is very evident; as the low water datum of the charts is thus permanently recorded. The tide-scales of the gauges erected this season, were connected with the bench marks by means of instrumental levels; and the tidal observations themselves, are thus brought into direct relation with the chart soundings, the depth on shoals, &c. The points at which the bench marks have thus been made use of, are at Quebec, Grosse Isle, L'Islet, Orignaux Point, and Rivière du Loup; as well as the Tidal Survey bench mark at Father Point.

The total cost of the summer observations from May to October, including the salaries of observers, was \$1,241.06. This comprises six tidal stations for periods varying from three to five months, and three stations at which observations of the current were obtained. The average cost of each of the six tidal stations, including its erection, the salary of the observer, the cost of obtaining correct time, and travelling expenses, was \$192.00. This amount does not include the salary of the Engineer-in-charge, or of his assistant, during the time the work was in progress.

I have, sir, the honour to remain,
Your obedient servant,

W. BELL DAWSON,
In charge of Tidal Survey.