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ate of last year's lelays met with; The difficulties which destroyed

repeatedly the temporary dams required in excavating the tide trench across the rocky foreshore. The intake-pipe in the tide trench was laid with much difficulty, as the winter was setting in. It was most important to finish the gauge then; because much of the work would have had to be done over again, if it had been allowed to remain incomplete until the spring. The intake-pipe serves to lead the water for 260 feet across the foreshore to

the tide well, which is situated at high water mark. It is laid at the level of ordinary low water; and between this level and extreme low water it acts by siphoning. This method was adopted to save excavating the tide trench to a greater depth below water, which would have been very expensive in the circumstances. The method has proved entirely satisfactory, as special precautions were taken. The pipe in the tide trench consists of sound spruce and fir logs with a bore of three inches, and these were laid green to prevent shrinkage or cracking, and the lengths were carefully jointed with sail cloth saturated with white lead. Special air pipes were also connected with the main pipe, and furnished with taps to allow the air to escape, in order to keep the pipe constantly filled with water, and thus to insure the action of the siphon. As the sea surges heavily into the outer end of the tide trench in rough weather, and the water then is much mixed up with air, a further precaution was taken to prevent the air from entering the pipe. A two-inch iron pipe was laid out along the bottom for 140 feet from the end of the wooden pipe, extending into 12 feet depth at low water. Any air which still finds its way into the intake-pipe is allowed to escape by opening the air taps at high water.

This spring, an ice shove of 20 feetin height formed along the outer edge of the rocky foreshore. This carried away the iron pipe; but it is so arranged as to be easily relaid; and the end of the wooden pipe itself is protected by a permanent cement dam across the outer end of the tide trench in the rock.

An additional tide gauge has been erected this season at Halifax. It has been placed at the north whari, on the property of the Department of Marine and Fisheries. This site has the advantage of being in close proximity to Her Majesty's Dock Yard, where the old tidal records of 1860 and 1861 were obtained, from which the tide tables for 'Halifax are at present calculated. This will bring the new observations into direct relation with the old ones; which is important until it can be ascertained whether the accumulation of the tide in Bedford Basin has any influence on the tide in Halifax Harbour itself, as compared with the tide on the open Atlantic coast in the vicinity. As the range of the tide is only about 6 feet, it is probable that any such local influence will prove to be inappreciable.

During the past year the only serious interruption to the tidal records occurred at St. Paul Island, where the tide gauge was partially destroyed by the unprecedenced gale of the 11th of February. This gale amounted to a hurricane in violence, and along the adjoining coast of Cape Breton buildings were carried away which were thought to be well beyond the reach of the sea. The tide gauge at St. Paul Island was built in a sheltered recess in the cliffs, and was held in place by eribwork, set between the cliffs, and braced above by beams mortised into the rock at both ends. The crib-work and the lower parts of the bracing withstood the storm, but the tide-house, which was set at 12 feet above high water, was carried away and the recording instrument lost. A spare recording instrument was at once sent to the makers in Glasgow for alteration, to adapt it to that station. In making the repairs this season the new tide-house was set at a higher level, and it now stands at 23 feet above high water; and the bracing was also extended and strengthened, which should make the tide gauge secure against further injury.

The tide gauge at Grindstone, Magdalen Island, was removed this season, and the materials used in the erection of the new gauge at Halifax. The tide at the Magdalen Islands proved to have a very small range; so much so that it was often difficult for days together to make out the time of high and low water with any vertainty, especially at the neap tides. This may possibly be due in part to the disturbing effect of the wind, which is relatively large when the tide itself has so small a range, but it also illustrates the remarkable fact that the tide-wave, which enters the Gulf of St. Lawrence from the Atlantic through Cabot Strait, between