

location of the work to be done were prepared, tenders for which were invited by Capt. Douglas on his arrival at Pictou.

We left Grindstone on August 30, and I instructed Capt. Douglas to proceed to the Island of St. Paul's, Cabot Strait, and see if he could find a suitable site for a gauge, and then to proceed with the erection of the gauge at St. John, N.B. I myself landed at Souris, P.E.I., which I found would be a suitable place for a gauge.

Captain Douglas found St. Paul's a very difficult place to visit and much time was lost owing to his having to wait for the ss. *Harlaw*, the only steamship calling there; it was therefore the 9th of September before he landed.

He soon found an excellent site in a small cove. A good shelter from easterly gales and the Atlantic ocean is afforded by the small rocky island running parallel and close to the shore of the main island. The depth of water at low water springs is three feet, but that can be increased by one or two feet by the removal of the loose stones and boulders on the bottom, and the foundation made level and secure thereby. The bottom is rocky with very little deposit of sand or silt, and that would entirely disappear in the fall when bad weather brings in heavy seas on the coast. The site is about 530 yards from Mr. Campbell's, the superintendent, house. The road is good, but from twenty to thirty yards from the level track to the face of the cliff above the proposed site a path protected by a handrail and rough planking would have to be made at a small cost. From the edge of the cliff to the top of or side of the office, steps for descending would be required.

Captain Douglas returned to St. John, N.B., on the 14th September, and tenders having been asked for, the offer of Messrs. Beatty & Thompson was accepted.

The work was a very difficult one to accomplish, as the gauge column had to be placed on the rocky bottom of the harbour in 53 feet of water at high water spring tides. The bottom was too hard to drive piles into; the wharf against which the gauge is placed is not in good condition; the rise and fall at springs is 30 feet, and the gauge column had to be heavily ballasted to counteract the floating power of 36 feet, which had to be perfectly water-tight.

Captain Douglas left for Anticosti on the 28th October and returned to St. John, N.B., on the 14th November, where he found the work nearly completed, but the gauge column needed protection from ice and small craft using the small dock steps. To effect this, strong sheet piling was placed to about 2 feet below the zero I used in placing the gauge.

On the 1st October a very hard gale from the northwest brought in an unusually heavy sea at Southwest Point, Anticosti, which washed away the beams and other fastenings of the gauge column, as well as a large quantity of stone ballast used in the foundation of the work, and as a protection from the outside.

Miss Jessie Pope, who was in charge of the gauge in the absence of her brother, Mr. Herbert Pope, at the time it was wrecked, during the gale at great personal risk, saved the valuable mechanism in connection with the automatic gauge, and enabled Captain Douglas to bring it to headquarters after his second visit to Anticosti.

Captain Douglas visited Southwest Point in November last and made a careful re-examination of the day.

During the winter it was found that the eye reading gauge at St. John was not working satisfactorily and another form of gauge was substituted for it. This likewise did not work well and it was found that some one had dropped things into the well and almost choked it. The well was cleaned out and then worked satisfactorily.

It was found that it would be cheaper in re-erecting the gauge at Southwest Point, Antocosti, to use an old boiler for placing the tide well in, than a wooden box as before.

While the necessary fittings were being made and the materials for the crib-work were being got together, Captain Douglas visited several points near Cape Rosier and found at Fox River a suitable position for a gauge. He then took the gauge, well, materials and workmen to Southwest Point.