

out of accord with their normal relation to the reference station. It is thus evident that more reliable results for the range of the tide can be arrived at, than local observations for a short time would afford without the means for simultaneous comparisons.

The only assumption in this procedure is, that the tide is sufficiently similar in type throughout the region that is under exploration to enable comparisons for time and height to be made satisfactorily. Otherwise, the time-differences and the ratios in height become variable during the course of the month.

The Appendix.—The tables appended give a digest of the observations of 1914 and 1915, with the resulting ranges of the tide and the time values as far as these are deducible.

In the northern observations of 1916, the range of the tide as found from readings on a scale during one day at each locality, has already been stated and discussed.

To complete the tidal information obtained by Canadian Arctic expeditions, a synopsis of the tidal observations at the winter quarters of the Bernier expedition is included. This reduction of the observations as made by the Tidal Survey, appeared originally in the "Cruise of the Arctic," published by the Marine and Fisheries department in 1910.

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SUPPLEMENTARY NOTE.

Since the above was in type, the time reductions for Armstrong point, in Prince of Wales strait, were supplied by Mr. S. T. Storkerson of the Northern party, which was two years later in returning. The errors are as follows: Chronometer error in October and November, 1915, averages 3 h. 40 m. fast. Watch used in tidal observations, 3 to 3½ hours fast on chronometer. Total watch error, deduced from accurate rates and comparisons, 6 h. 31 m. to 7 h. 26 m. with resetting of one hour.

The errors, though so large, appear to be quite definite. The resulting values of the Establishment at three Spring tides, obtained by plotting the luni-tidal intervals, are as follows: 1 h. 18 m., 1 h. 15 m. approximately, and 1 h. 13 m. Mean adopted, 1 h. 15 m. This value is much earlier relatively, than at Bernard harbour, when the distance from the open sea is nearly the same.

Regarding the observations in Bernard harbour, it has now been ascertained that there was a chronometer error of 11 minutes as well as the watch error indicated in the original notes. This has enabled the value for the Establishment as given in the tables to be finally corrected. Also, during the June observations obtained with the registering gauge, the chronometer error on local time was less than one minute; and if it is assumed that the registering gauge was set with the chronometer, and further that the tide curves are inverted, so that apparent low water represents high water, a result can be obtained for the Establishment. This supposition is probable although there is no explanation regarding it; because the tide gauge was set on floating ice, and operated by a line anchored to the bottom. The value of the Establishment thus obtained is 7 h. 11 m., which is reasonably close in the absence of any time comparisons. It affords a valuable check on the result, as otherwise a comparison of time which was carried over from Armstrong point, might leave it an open question whether the same large chronometer error of 3½ hours should not be applied to the value at Bernard harbour.

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