almanaes, adopted on account of the very limited circulation which this booklet secured. It was not until the year 1897 however, that the local almanaes adopted the tables of this Survey, and republished them.

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Up to 1896 therefore, the tide tables in common use for Halifax, were those published by *Belcher's Almanac*; based upon a contant difference of time with Brest, France. When the recording gauge had been established at Halifax, a comparison was made between the time of the tide as shown in these tables and the actual tide as recorded on the gauge, during the month of January, 1896. The result was as follows, for the time of high water :--

Extreme variation between the time of H. W. as given in these tide tables, and the actual time as observed : 0 h. 46 m. early to 0 h. 31 m. late.

Average error during this month, 20 minutes.

Tide Tables of U. S. Coast Survey.—The tide tables for Halifax since 1896, given in this publication, have been calculated from tidal constants furnished by this Survey, which were derived from the two years of the old record, first submitted to analysis.

Tidal Survey tables.— The tide tables for Halifax issued by this Survey, are now tased upon the harmonic analysis of five years of tidal record; comprising four years of old record, and one year from the present tide gauge. To test the accuracy of these tables, a comparison was made between the time of the tide as there given, and the observed tides as recorded on the gauge. This comparison was made for a period of one month in the summer season; from July 18 to August 18 in 1898; it is given in Table A. herewith. The condensed result is as follows :—

Extreme variation between the predicted time of H. W. in the tide tables, and the actual time as observed: 14 m. early to 14 m. late.

Average variation during this month, 6 minutes.

Although the Halifax tables show the least irregularity of any of our ports when computed from the tides on the other side of the Atlantic, the improvement already obtained by basing them upon observations taken in the port itself, is marked. The average error in the time of the tide has thus been reduced to less than one-third, as compared with the old method of computation; or in other words, 70 per cent of improvement in the accuracy of the tide tables has been secured.

The harmonic constants for Halifax as they now stand, were published in the last report; from which it will be seen that the monthly and fortnightly components among the long-period tides, are not yet satisfactorily determined. An improvement in this respect will be secured, as further tidal record is obtained and submitted to analysis, in the future.

ST. JOHN, N.B.—The only tide tables formerly available were those given in McMillan's Almanac, published at St. John, and computed by means of a constant difference in time from Brest, France. These tables gave only the time of high water, without any reference to the height of the tide; although the range at St. John is greater than at any other harbour of the same importance in North America.

The tide curves at St. John were found to be so uniformly regular, that several series of comparisons were made in the early days of this Survey, in the hope of obtaining some constant difference in time, which would serve to compute reliable tide tables. Brest had already been used in the computations; and as it is one of the best established tidal harbours in the world, its tide tables are unusually accurate. A comparison was therefore made between these tables and the observed tides at St. John, which extended over a continuous period of eleven months in 1893. The difference in the time of high water, which had been assumed to be a constant one, was found by this comparison to vary through a range of more than an hour and a half. The use of a constant difference would thus leave a margin of error which is too wide to be desirable. It is not therefore necessary to give the comparison in a tabular form.

A comparison was next made between the observed tides at St. John, and the tide tables for Eastport; the nearest port in the United States for which tide tables are published. This comparison extended over eight months in 1893; and after omitting a few exceptional values, the difference in time of high water was found to range from 29 minutes earlier to 37 minutes later; which is also too wide a variation to be considered