cut on the granite foundation at the south-east corner of the custom house; and the heights in feet, above the Tidal Survey datum itself, are also given.

St. John, N.B.—Tidal Levels and Datum Planes.	Elevation referred to Bench Mark.	Height above Tidal Survey Datum.
	Feet.	Feet.
Bench Mark on custom house, as above described	100·00	55·60
Gnomon or zero-point of sight gauge, since June, 1896	79·94	35·54
Highest high water, at the spring tides of October and November, 1896. Probably about the level of the highest astronomical tide possible, apart from storm disturbance	73·10	28·70
Mean Sea Level, from the harmonic analysis of the continuous record during two years. Result for the year 1894-1895 = 58·355; result for the year 1895-1896 = 58·347. Mean value	58·35	13·95
Level of low water at spring tides, as determined from the breakwater at Negro Point, as above explained. (This is presumably the low water level to which the soundings at the entrance of the harbour were reduced in the survey of 1887, as shown on the chart.)	46·34	1·94
Level of low water at spring tides, as adopted in the original survey of the harbour by the Admiralty. Surveyed under the orders of Captain W. F. W. Owen, R. N., in 1844	Unknown.	——
Harmonic Tide Plane, or low water mark at a distance below Mean Sea Level given by the sum of the harmonic constants $M_2+S_2+K_1+O$. Sum of these constants for the year 1894-1895=12·569; for the year 1895-1896=12·497. Mean value=12·529. Resulting level of tide plane	45·82	1·42
Public Works datum, adopted by that department in 1896 for construction purposes. Based upon the harmonic analysis of the one month of October, 1895	45·66	1·26
Tidal Survey datum, at 55·60 feet below the bench mark. From this datum the heights of the tide in the tide tables for St. John are measured	44·40	0·00

The plane of reference from which the height of the tide in the tide tables is measured, should if possible be placed sufficiently low that few tides in the course of the year may fall below it; as this gives rise to negative values in the tide tables. Where the range of the tide is so great as it is at St. John, and there is consequently so much variation in the level of low water at spring tides, it is difficult to adopt a low water datum which on the one hand will exclude these negative values, without on the other hand placing it too far below the probable level of low water to which the soundings on the chart of the harbour were originally reduced. If the low water datum is thus placed too low, it makes it appear that the height of the tide gives a *greater* depth on shoals and bars, than will in reality be found upon them. The tidal survey datum for low water as above defined, is still appreciably above extreme low water. During the course of the year 1895, six tides touched or fell below this datum. Also in the calculated tide tables for 1898 there are six out of the twenty-five spring tides which occur during the course of the year, at which some of the low waters touch or fall below this datum; the lowest tides falling to four-tenths or five-tenths of a foot below it. This datum has therefore as good a position on the whole for a plane of reference for tidal purposes as can be chosen, to avoid the two difficulties above referred to, in a port where the tide has so great a range.

Halifax, N.S.—The low water datum to which the soundings on the Admiralty chart of this harbour were reduced, was recorded by a bench mark in the Dock-