91

Lowest Low Waters observed during the five months in 1870; on

October 26 and November 24 (excepting one during a gale)..... 47.00 Low-water datum, determined with relation to the St John datum by the general method already explained, based on the tides at St.

In the values above given for mean High Water and mean Low Water at Spring tides the diurnal inequality is eliminated by computing the elevation of the missing night tides from their corresponding values at St. John. in the tide tables calculated for 1870. In the values for the mean level throughout the month, the diurnal inequality is not fully eliminated, as explained. In both cases however, the large semi-monthly inequality is carefully eliminated by the methods employed. This inequality is due to the difference between perigee and apogee Springs, and it may occasion a difference in level of 5 to 6 feet in either High Water or Low Water at successive Spring tides. With these explanations, we may proceed to make a comparison of the Half-tide level, based on the best data which the observations afford, with the values of Mean Sea level carried from Halifax by the recent systems of precise levelling.

Mean Sea level.—The values at the head of the Bay of Fundy and in Northumberland strait, on the two sides of the isthmus of Chignecto, are given below. They are based on the elevations of the Bench-marks already mentioned, and on the tide levels above stated.

Mean Sea level, according to the precise levels of the Dominion Observ-	Lievation.
(From their elevation for the Bench-mark on the Engine-house	
at Fort Lawrence dock.)	72.33
Mean Sea level, according to the levels of the Geodetic Survey: based	
also on the Halifax determination. (From the elevation of Bench- mark CM as connected with the Marine Bailman lat	
Half-tide level in Cumberland besize between the Marine Railway datum.)	$72 \cdot 53$
mean Low Water throughout the month, determined as above	
	70.77
Hall-tide level in Cumberland basin; between mean High Water and	
mean Low Water at Spring tides, determined as above explained.	70.71
Half-tide level at Tidnish, Baie Verte; from 48 days on which both High Water and Low Water were observed, between August and	
December, 1870	71.18

The divergence in Cumberland basin from the oceanic value of Mean Sea ., may be due to variations which are not completely eliminated; as the Low Waters observed are so incomplete, there being only 13 per month on the average. It is also possible that the tide eurve may be modified in the direction of the estuary type, and be unsymmetrical. In the other arm of the Bay of Fundy however, in Cobequid bay, where the form of the tide curve was accurately determined, it proved to be strictly symmetrical.

The correspondence is sufficiently near in any case, to show that Mean Sea level at the head of the Bay of Fundy is closely the same as in the Gulf

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