Father Point to Quebec.	Variation in the difference for High Water.	Range in the Difference.	
One year.—1894, December 17, to 1896, January 31—601 simultaneous observations. One year.—1896, February 1, to 1897, January 31—649 simultaneous observations.	H. M. H. M. 3 45 to 4 43 3 44 " 4 41	н и. 0 ,58 0 57	
One year.—1896, February 1, to 1897, January 31—627 simultaneous observations One year.—1897, February 1, to 1898, January 31—633 simultaneous observations	Low Water. 4 38 to 5 57 4 33 " 5 58	· 1 19	

In the endeavour to obtain tidal differences for Father Point with less variation that the above, wital comparisons for a period of one month in the year 1900 were made with Wilhelmshaven, in Germany; Harwich, on the North Sea, and Portsmouth, on the English Channel. The tide at these harbours is similar to Father Point, in having nearly the same range; and it might, therefore, be expected that one of these differences might prove to be more nearly constant than the difference with Quebec. But this did not prove to be the case, which makes it unnecessary to give the results of these trials

On making a close examination of the whole series of differences in the time of the tide at Father Point and Quebec, as observed during two complete years, it appeared that in the case of low water a double variation in the difference of time occurred; firstly, in the period of the synodic month with the moon's phases, and secondly, in the period of the anomalistic month with the moon's distance. The amounts of these variations in the difference were ascertained by four series of analyses, in the periods of each of these months, and for high and low water, respectively.

In the case of High Water, the variation with the moon's phases is not great, and the variation with the moon's distance is only 2 minutes more or less than the mean value, and may be neglected. The time of high water can, therefore, be found from the Quebec tides by the following simple rule:—

Time of high water at Father Point, from high water at Quebec-

About th	e time of	new or full moon, substract	4h. 22m.
	. 11	the moon's quarters "	4h. 18m.

In the case of Low Water, the variation in the difference is larger, and the outcome of the analyses which were made, is given in the table opposite, which is used for the calculation of the tide tables.

The following synopsis shows the proportion of the range in the difference for high water and for low water, which can be reduced to law, and which is allowed for by the use of this table. The greatest outstanding error which can occur at any time is half of the remainder unaccounted for, which includes weather disturbance, and the diurnal inequality occurring for a few days at the moon's maximum declination:—

* Father Point and Quebec.	High ater.	Low Water.
Range in the difference in the synodic month.  anomalistic month.  Diurnal inequality in the difference.  Remainder unaccounted for (weather, &c).	5 m. 4 m. 14 m. 34 m.	32 m. 25 m. 14 m. 11 m.
Total range in the difference (average as above)	57 m.	82 m.

WATER AT QUEBEC. FROM LOW TABLE OF DIFFERENCES IN TIME. POINT, AT FATHER TIME OF LOW WATER

ANOMALISTIC MONTH.

of tide

Moon's Distance.

of tide

of tide

Moon's Pha

MONTH

SYNODIC