9 at 21 d time.

nes.

vas also lowest,

being which ide at

t and a was better tables Paul iently ed for rrent,

d the cer or coon's this on to o the clinatimes rents

the tant only ime; will rent unts h of ons.

RELATIONS BETWEEN THE TURN OF THE CURRENT IN NORTHUMBERLAND STRAIT, AND THE TIME OF HIGH AND LOW WATER.

(1.) The time-interval between the turn of the current and the time of the tide, is found to vary with the moon's declination; and the leading variations in this time-interval may be classified as follows :---

For the turn of the current when the tide is high: After an upper transit of the moon at its maximum north declination, or after a lower transit at maximum south declination, the turn occurs at 1^h 44^m before high water at Pictou. For the turn of the current when the tide is low: After a lower transit at maximum north declination or an upper transit at maximum south declination, the current turns at 1^h 52^m after low water at Pictou.

For the turn when the tide is high, 14^m before H. W. at Pictou.

Hence for consecutive tides, there is an alternation in the time-interval, which is of the same character as the diurnal inequality in the tide itself. From the amounts above given, this alternation in the time interval between the turn of the current and the time of the tide, has the following maximum values :--

At consecutive high waters, 1^h 30^m. At consecutive low waters, 2^h 10^m.

(2.) When the moon is near the equator, the turn of the current on the average, is nearly simultaneous with high and low water at Pictou. This average includes both the spring and neap tides.

(3.) Again, when the spring tides only are considered, and an average is taken which is long enough to eliminate the variation due to deelination, the turn of the current is within 20 minutes of the time of high or low water at Pictou. The variation with the moon's phases thus appears to be small in comparison with the deelination variation, and such irregularities in the turn of the current as may be due to wind disturbance.

The results, at the time of the moon's maximum declination, may be put in a tabular form as shown below. The low tide is the first to occur after the moon's transit.

N. N. N. N.

MOON AT MAXIMUM DECLINATION NORTH.

After Moon's Upper Transit.		After Moon's Lower Transit.	
Tide Low : 18m. before L. W.	Tide High : 1h. 44m. before H. W.	Tide Low : 1h. 52m. after L. W.	Tide High : 14m. before H. W.
	MOON AT MAXIMUM	DECLINATION SOUTH.	
		L	
After Moon's Upper Transit.		After Moon's Lower Transit.	
Tide Low :	Tide High :	Tide Low :	Tide High :
1h. 52m. after L. W.	14m. before H. W.	18m. before L. W.	1h. 44m. before H. W

Further observations this year.—The observations of the current in Northumberland strait this year, were taken at its narrowest part, between Cape Tormentine and Cape