## BULLETIN OF THE NATURAL HISTORY SOCIETY.

78

## X.-RATE OF PROGRESS OF HIGH WATER UP RIVER.

To show the speed with which high water travels up river I have plotted the results on cross section paper. Indiantown is taken as origin or starting point. Times after high water at Indiantown are represented by horizontal lines or abscissæ, and the distances which high water has progressed in those times are represented by vertical lines or ordinates. The points on this chart corresponding to the seven stations of observation are joined by straight lines. The slope of this broken curve at any point represents the speed of the high water at that point. This shows at a glance that, whereas the speed is much less between Oak Point and Oromocto than it is between Indiantown and Oak Point, it increases again between Oromocto and Kingsclear. In fact the average speed of high water is:

later

Water

9h-

7-5

7-4

7-1

6-2

5-5

5-4

5 - .

4-3

4 - 6

3-4

3-1:

2-5

Between Indiantown and Oak Point - 20 miles an hour.

66

- " Oak Point and Gagetown 91 "
- " Gagetown and Springhill  $-11\frac{1}{2}$  "

It is interesting to compare this with the fact, stated in the preceding section, that the delay of low water is greatest between Indiantown and Oak Point, and between Oromocto and Springhill, but is at least very small between Oak Point and Oromocto. Again both of these statements seem connected with the fact noted earlier that it is between Oak Point and Oromocto that islands are numerous and greatly interrupt the course of the river. Hence we seem justified in concluding that irregularities and obstacles in a river retard the progress of high water, but do not delay low water as compared with high water.

I have also plotted a curve representing how the amount of tide from point to point of the river varies with the distance from Indiantown. Excepting the highest point, Springhill, the points lie roughly on an exponential curve, indicating that each mile produces roughly the same percentage decrease of tidal rise. This would seem almost obvious beforehand, and need hardly be discussed further.