as to bring them ould be sufficient aterial to conidthe best authorer second or 900 Il just begin to y, and however vill eat away the nore stable than o not exceed the 1 takes away the oial clay, leaving associated with n the rest of the making a very does not bring which will rub another layer to x inches per seelve inches will y-four will roll ch diameter ; to f stone as large three feet per

ious Islands and ons, constituting ake, several of sand, it is very the lake will be gillaceous mud ne of the borings pecies of shell were met with seven and eight the drift of the s met with also els which intero the inference, nation, that the Fragments of d with the sand under the clay, appear that no Peter and its those clays and which form a valley of the hich the main tries have cut stances. It is beds however ht down by the at the alluvial ed. To pursue any individual tion, and the efhe main stream, nded investigas not appear to se, that because tributary, it is To ascertain, ial of the sand hs of the Rivis supplied by ation into the liment brought under other id direction of er times preus continuation Island is above annot therefore gh it is not an

improbable supposition that they may have con- a half above the lower end of the New Chan-tributed to the material of the subaqueous part, it nel. But in the Old Channel, midway be-is not impossible, also, that it may be due to a tween the Lower light and Buoy, two trials is not impossible, also, that it may be due to a continuation of the supply, which formed the Island higher up. But whencesoever the sand is derived, there seems little doubt that the St. Lawrence current in the Ship Channel on the one side, and the currents of the tributaries on the other, have arranged and modified the form of the bank, and that this has reacted on the cur-rents. It is probable that what is called the Ship Channel once ran from Monk Island straight through the Lake, as it appears from Bayfield's soundings in 1831 there were then traces of it lower down; but the transverse action of the tributaries has so modified the distribution of the material as to produce a deflection of the St. Lawrence current in the Channel in question, and carry it into what is called the Old Channel.

In respect to the soft argillaceous deposits, all the rates of current ascertained being greater than that sufficient to give to the bottom current the velocity required to remove fine clay, it may be asked by what cause such a retardation of the rate has at any time been effected, as to permit the clay to come to a state of rest. According to what has been stated, the clay would fall at any velocity under three inches per second; this is understond to be French measure. A bottom current of three inches per second, would re-present a surface velocity of 7,463 inches French per second or expressed in English miles and decimal parts 0.47 per hour. The lowest rate of current oscertained was 0.54 at a mile and

were made in one spot on different days. In the first instance the rate was 0.37, and we were informed by the light-man that the water was at the time six inches higher than it had been some hours before, in consequence of the effect of tide. In the second instance, the rate was 0.73, when we were informed it was low water, the lightman's guage showing six inches less than on the previous trial. That the lower rate with the higher water was a tidal result, is evident from the fact that if the water had risen from increased supply, the current should rather have been stronger than weaker, unless the Channel at the entrance should not carry off the increased supply so fast as the Channels at the head gave it, which does not appear probable. If 0.70 be taken as the current when the slope of the river is un-

affected by the tide, the retardation produced by an ordinary tide would appear to be between 4 and 5 per cent., and perhaps it is not assuming too much to suppose that some occasional com-binations of tidal and effluviatile conditions, such as extraordinary high tides and general low water in the river, with the temporary influence of wind, may effect a retardation of a quarter of a mile per hour, which is about the amount that is required.

I have the honor to be, With much respect, Your most obedient servant,

(Signed,

W. E. LOGAN.