

of the boulder clay. They serve to show that the boulder clay, in some places, passes laterally into a quicksand, and that this quicksand is a true member of the boulder clay is shown by those sections in which the boulder clay is found above the quicksand.

The thickness of the boulder clay naturally depends upon the irregularities of the rock surface below, and so it varies within wide limits. No satisfactory guide can be given with regard to estimations of thickness. Figures of thickness obtained even on the next lot cannot be used to indicate the thickness at any point. It is only to be found by actual trial, by boring, or otherwise.

For further details regarding boulder clay modifications see description of section at the school on Melville street, Westmount, on pages 36 and 41.

LEDA CLAY.

CHARACTERS.

Typically the Leda clay is a grey or bluish-grey clay, and may show stratification or lamination, which is sometimes exceedingly fine, or may show no stratification at all. It contains, very rarely, boulders of varying sizes, but usually very small ones. Upon weathering it breaks in joint blocks. It contains marine fossils (for list of fossils see p. 65), and hence is a deposit which was laid down on the floor of the sea. The establishment of an arm of the sea extending up the St. Lawrence, Ottawa, and Champlain valleys, the sea of the so-called "Champlain sub-stage" of the Pleistocene, has been discussed above. With the establishment of this sea the period of continental glaciation appears to have ceased, or to have been rapidly waning. The action of the agents of denudation on the deposits left by the ice-sheet removed the finer material from the boulder clay exposed, in some cases leaving the boulders stranded and free upon the surface. The material of the matrix was washed down by the streams and carried out into the Champlain high, the coarser material being there deposited along the shore-line as Saxicava sand, and the finer material being carried farther out from the shore in milky suspension, and gradually deposited