

valley had originally existed, which, during the glacial period, was filled up with the materials peculiar to it.

The average depth of the clay over the area comprised between the foot of the slope of the mountain and the lake shore seems to be about twelve feet; but at the artesian well at St. Catherines it is forty feet thick. There is a remarkable break in the continuity of the red marl of the Silurian formation, commencing at the eastern limits of Hamilton and terminating at the west side of the old canal; the intervening space being filled to an unknown depth with laminated clay and sand. May not this be accounted for by the abrasion and grinding down of the older soft marl, produced by the agitation of the icebergs which I have supposed to be congregated and imprisoned in this locality? The clay has been pierced to a depth of from sixty to seventy feet at the passenger station of the Great Western Railway without passing through it.

*Succession of Changes.*—I shall now in conclusion give a brief general retrospect of the probable succession of events which have produced the geographical and physical configuration of the region under notice.

The first event to which we must recur is the successive deposition, at a time vastly and immeasurably remote, of the stratified rocks shewn in these sections. I have said that they belong to the oldest fossiliferous rocks, and probably they contain the records of the first of living forms. That they are of marine origin is indisputable from the sea weeds and deep sea shells which they contain, but no trace of fishes, of vertebrated animals or of terrestrial vegetation can be discovered in them, and it seems to have been for many ages a creation of molluscs, corals and crustaceans. These rocks remained nearly undisturbed and horizontal from the era of their formation to a comparatively modern period, during which interval the whole of the geological formations subsequent to the Silurian system were deposited in different parts of the globe; and the vast succession of species of animals and plants whose histories we find written in these rocks have flourished and perished and been slowly entombed. During this interval also, and while the rocks in question still remained submerged in the ocean, they were denuded by currents, that is, portions were worn off and transported away, so as to form irregularities of surface, such as the basins of our great lakes, and