ice-sheet[1] according to the principle of the maintenance of the isostatic equilibrium of the earth's crust, readjustment of level must have ensued owing to the loading of the surface with ice, i.e., the land surface must have been depressed relatively to sea-level. We learn that isostatic readjustments usually lag behind the impulses causing them. So that the collection of a thick ice-mass would be followed, but not immediately, by a depression allowing of a marine transgression. Such a marine transgression is represented by the Leda clay; and a moment's consideration will suffice to show that the gradual encroachment of the sea, say, up the St. Lawrence valley, would cause only a gradual displacement of the conditions favourable to deposition of boulder clay. So that in areas characterized by this marine transgression we should expect to find a *gradual* and not a sharply marked change from typical boulder clay to typical Leda clay deposits. The presence of marine fossils in the upper part of the boulder clay of the lower St. Lawrence has long been known, and doubtless the future will see an increase in the number of localities where this can be seen.

A depression of the land surface would cause a decrease of the ice-gathering area and would remove one of the causes of ice-formation. If this depression, then, were followed by removal of the ice-sheets, isostatic readjustment would again take place, and the land area would again be elevated. A record of such elevation exists in the successive beaches of the Saxicava sand, which indicate that this elevation, though gradual, was marked by definite pauses, with periods of permanancy of level sufficiently long to allow of the formation of definite beaches, and these pauses were more marked in the later stages of the elevation than in the earlier. This is shown by the fact that the higher beaches are continuous, whilst the lower ones are more sharply marked off from each other. With the gradual elevation, the arm of the sea in which the Leda clay was laid down[2] was gradually narrowed and shallowed, until finally the waters of the St. Lawrence in the district under consideration, became

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[1] Chamberlin and Salisbury. Geology, 1906. Vol. 3, pp. 356 et. seq.
[2] Chamberlin and Salisbury. Geology, 1906. Vol. 3, p. 404, fig. 522.