have taken directions caused by surface-currents from the south and west, or even been impelled by the prevailing winds. Some of the Laurentian débris, as we have seen, reached almost to the mountains, while some of the *quartzite drift* can be distinguished far out towards the Laurentian axis.

The occurrence of Laurentian fragments at a stage in the subsidence when, making every allowance for subsequent degradation, the Laurentian axis must have been far below water, would tend to show that the weight and mass of the ice-cap was such as to enable it to remain as a glacier till submergence was very deep.

The emergence of the land would seem to have been more rapid; or at least I do not find any phenomena requiring long action at this period. The water in retreat must have rearranged to some extent a part of the surface-materials. The quartzite drift of the third steppe was probably more uniformly spread at this time, and a part of the surface-sculpture of the drift-deposits of the second plateau may have been produced. It seems certain, however, that the Rocky Mountains still held comparatively small glaciers, and that the Laurentian region on its emergence was again clad to some extent with ice, for at least a short time. The closing episode of the Glacial period in this region was the formation of the great fresh-water lake of the Red-River valley, or first prairie-level (which was only gradually drained), and the reexcavation of the river-courses.

It must not be concealed that there are difficulties yet unaccounted for by the theory of the glaciation and deposit of drift on the plains by icebergs; and chief among these is the absence, wherever I have examined the deposits and elsewhere over the West, of the remains of marine Mollusca or other forms of marine life. With a submergence as great as that necessitated by the facts it is impossible to explain the exclusion of the sea; for, besides the evidence of the higher western plains and Rocky Mountains, there are terraces between the Lake of the Woods and Lake Superior nearly to the summit of the Laurentian axis, and corresponding beach-marks on the face of the northern part of the second prairie escarpment.

Mr. Belt, in an interesting paper (Quart. Journ. Geol. Soc. Nov. 1874), deals with similar difficulties in explaining the glaciation of Siberia. The northern part of Asia appears in many ways to resemble that of America; surrounded by mountain-chains on all sides save the north, it is a sort of interior continental basin covered with "vast level sheets of sand and loam." As in the interior regions of America, marine shells are absent, or are only found along the low ground of the northern coast. To account for these facts, Mr. Belt resorts to a theory first suggested by him eight years ago, by which he supposes the existence of a polar ice-sheet capable of blocking up the entire northern front of the country, and damming back its waters to form an immense freshwater lake. The outfall of this lake, during its highest stage, he supposes to have been through the depression between the southern termination of the Ourals and the western end of the Altai to the Aral and Caspian Seas.