

coarse red granite on the shore is polished and scored with glacial markings trending southward. At Fort Churchill the low granite knolls, and the high bare rounded hills of green feldspathic quartzite, are scored by three sets of striæ, the two most recent of which are very distinct, while the earliest, wherever seen, is rather obscure. This latter trends N. 80° E. (or S. 70° W. ?), and is not improbably merely an early variation of the next, which trends N. 55° E. This set of grooves and striæ is very strongly marked on all the southern and south-western slopes, against which the glacier pressed heavily on its way down the valley of the Churchill River to Hudson Bay, but the eastern sides of the hills show comparatively few traces of this glaciation.

Crescentic cross-fractures are common in the grooves, and these all lie with their concave sides towards the north-east, or towards the point of the compass to which the glacier moved. The most recent set of striæ is found on the summits and northern sides of the hills, and points southward, the striæ being found to vary from S. 5° W. to S. 10° E.

From the above record of striæ it will be seen that one of the great gathering grounds for the snow of the Glacial period in North America was a comparatively short distance west of the northern portion of Hudson Bay, and from that centre or gathering ground the ice flowed not only towards the Arctic Ocean and Hudson Bay, but it extended a long distance westward towards the Mackenzie River, and southward towards the great plains, while Hudson Bay was probably then to a great extent open water. From it the moisture would be derived which fell as snow near its western shore.

The older geology of the country is known over such a small portion of the total area that it is impossible to draw any definite conclusions from the direction of transportation of boulders; but on the west shore of Hudson Bay the boulders were such as would be derived from the Laurentian, Huronian, and Keweenaw rocks to the west, and there were no signs of the limestones, etc., from the islands in the Arctic Ocean or Hudson Bay. On the Telzoa River the boulders showed no evidence of having been derived from the west coast of Hudson Bay.

Drumlins or ridges of Till are almost everywhere found in the less rocky areas. Eskers are also common, either rising in high narrow elongated hills, or running as long sandy ridges, keeping their courses, which are parallel to the glacial striæ, over hills and through valleys and lakes quite regardless of the surface contour of the country. In the more southern districts these are wooded with large white spruce, which rise conspicuously above the stunted black spruce on the surrounding low land.

After the ice receded from the lower country the land was about 400 feet below its present level. On the lower side of a long portage a short distance below Dooban Lake the first well-defined raised beach and terrace was seen, and from that point all the way down the river to Hudson Bay old strand lines could be seen on the sides of all the prominent hills.

above
surface