

streams which flow into the various arms or fiords of the eastern coast-line, all bear evidence of having been ploughed out by such branches or deviations from the main flow. The grooves and striæ are found to coincide with the trend of the valleys in each instance, following their various meanderings till they reach the sea. When more than usually deep and narrow and bounded by hard, crystal-line rocks, the striæ and polishing extends up the side slopes to and over their summits. Numerous small, lateral currents seem to have joined the larger ones wherever a depression exists in the hills, all exhibiting grooves and striæ, indicating the direction from whence they came.

The accumulation of mixed sand, gravel and till along the sides and in the bottoms of these ravines is sometimes enormous, especially near their exit into the sea. Occasionally they exhibit a rude arrangement resembling stratification. One heavy gravel cut near the mouth of the Gambo River, at the head of Freshwater Bay, is a good example of this. Near Terra Nova River, just where the railroad line crosses, a series of low, rounded mounds of fine sand were the best sample of kames met with. The following record of the grooves and scratches observed during the season at various points along the route of the N. and W. Railway, will tend to bear out the suppositions set forth above as regards the general direction of the ice movement:—

LOCALITY AND DIRECTION OF ICE GROOVES AND STRIÆ.

Near Tickle Harbor crossing, Peninsula of Avalon, N. 80 degrees E., magnetic;

In valley Lower Shoal Harbor River, Trinity Bay, S. 50 degrees E., magnetic;

Near crossing Shoal Harbor River, S. 44 degrees E., magnetic;

Near Camp Pond, three miles beyond, S. 63 degrees E., magnetic;

At outlet from Thorburn Lake, S. 65 degrees E., magnetic;

A little beyond, S. 88 degrees E., magnetic;

On outflowing brook, S. 65 degrees E., magnetic;

Head of Thorburn Lake S. 70 degrees E., magnetic;

S. S. valley of S. W. River, Clode Sound, S. 70 degrees E., magnetic;