

by some force that paid little or no regard to the minor inequalities of the ground, but passed on with a steady persistent march, pressing grains of sand, pebbles, and even large blocks of stone upon the rocks below, so as to leave there at last a smooth polished surface, marked by striation of varying coarseness, according to the size and nature of the rude polishing paste of detritus.

When the ruts and scratches are examined, district by district, they are found to reveal a remarkable arrangement. They have not been distributed at random, but regarded with reference to the topography of each region, are found to radiate from the main mountain masses outwards to the sea (see Map of the Glaciation of Scotland). Down all the western fjords, they may be traced along the wavy undulating bosses of polished rock, until they pass beneath the waters of the Atlantic. Along the Pentland Firth, they may be seen in like manner descending from the high grounds of Sutherland northwards to the coast-line. On the eastern side of the island, the same seaward trend of the ruts and striæ on the rock is traceable down to Berwick and into Northumberland. Into the long valley of the Great Glen, the striæ come down from the high mountainous tracts on either side, and turn into the line of the valley, so as to run out into the Moray Firth on the north and into the Linnhe Loch on the south. In the glens that open upon the estuary of the Clyde, the rocks are striated along the line of each valley, the groovings passing up inland into the high grounds of the interior, and striking outwards beneath the sea. These markings prove that the mass of ice moved southwards from Loch Lomond, crossed the Clyde, passed over the hills of Renfrewshire, and crept down into the heart of Ayrshire, where it united with the ice that was streaming northward from the Southern Uplands. The very islands