

in Royal Sound were once connected, and that there was thus a broad sheet of lava rock with a gentle inclination from inland towards the sea. This slope was covered with a huge glacier, which was bordered by the mountain ridges now bounding the Sound to the north and south, and, perhaps, deposited some of the talus at present forming part of the ridge above Mutton Cove. After grinding the whole surface of its bed, the glacier shrunk and cut deeper channels between masses of rock, which were left standing, and thus formed the present islands.

Either during this period, or after glaciation had ceased, the whole was submerged till the upper surfaces of all the islands were under the sea, and then ice drifting seawards from the remnants of the shrunken glaciers at the heads of the fjords, dropped upon the rock surfaces the erratics which at present lie upon them. At this time all the moraines were washed away.

At the base of the hills about Betsy Cove, the bottoms of the secondary valleys are as distinctly glaciated as the main valleys themselves, and the slopes of the smoothed surfaces seem to lead towards the cavity and mouth of the present Cascade Harbour.

About Betsy Cove, thin beds of a red earthy matter a foot or two in thickness are very common, underlying beds of basalt and weathering out in the cliffs so as to leave ledges and low-roofed caverns. They occur in exactly the same manner as the beds of coal at Christmas Harbour; and when this coal is burnt in the fire it bakes to a compact mass of red earthy matter, exactly resembling that above referred to. There seems no doubt that these red beds, as well as the coal beds, represent old land surfaces. The soil consisting of black peaty matter as now, not many feet thick, has been overflowed by lava streams, which in the case of the coal have been only hot enough to char all the vegetable matter, in the other case have burnt it to an ash.

The coal at Christmas Harbour consists of abundant earthy matter, full of charred remnants of vegetable tissue, but I could find no recognizable leaves or definite forms, except something which resembled a *Chara*. Even microscopic structure seems entirely destroyed. From the glaciated condition of the beds overlying the coal and red earth, the great antiquity of the Kerguelen vegetation is evident. It has been dwelt upon by Sir J. D. Hooker.

At Betsy Cove are the graves of some whalers, none of very old date. They have small white painted wooden monuments. It was at Betsy Cove that the best teal shooting was enjoyed, there being several small rivers in the neighbourhood, and plenty of small ponds and marshy ground with abundance of