

gradually clouded over. Advantage was taken of the fine weather to complete the survey of Island Harbour, and the outer part of Royal Sound. In the afternoon the ship left Island Harbour and sounded and dredged until 5 P.M., and then anchored for the night off Murray Island, where the surveying boats returned, having completed the survey so far as practicable in the time.

Royal Sound is a magnificent sheet of water, extending a distance of 20 miles from its entrance to its head, and, with its various arms, occupies an area of nearly 200 square miles. A portion of this area is taken up by an archipelago of islands of various sizes, the largest being 6 miles in length and 2 miles in breadth, and the smallest little more than a rock. These islands are congregated towards the head of the sound, and between them there appears to be deep water; in fact, in some of the channels the depths are considerable, for 95 fathoms were obtained in the arm running to the southwestward towards Greenland Harbour. They are all flat-topped, with erratics on their upper surfaces, and they appear to increase gradually in height towards the head of the Sound. They are of the same form as the hills about Betsy Cove, and if the great valley there were submerged, the hills on its northern side projecting as islands would give a miniature representation of those in Royal Sound (see Pl. XVII.).

There seems but little doubt that the whole of these islands 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 may have been once 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 probably shrank 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 may have been 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, and 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