

height of the cliff; a freshly fallen slab, a longitudinal slice of the glacier, was lying on the beach.

The fallen ice floats off with the tide. Some stones, which were dredged in 150 fathoms between Kerguelen's Land and Heard Island, were believed by Mr. Buchanan to have been recently dropped by floating ice from Heard Island. The stones in question were as yet not penetrated by the water.\*

The other glaciers in sight cut the shore line at right angles, and thus had no terminal moraines, the stones brought down by them being washed away by the sea.

The glaciers showed all the familiar phenomena of those of Europe with exact similarity. There are here the same systems of crevasses, more marked in some regions than others, and dying out towards the termination of the glacier, where the surface is smooth and generally rounded. The crevasses were of the usual deep blue colour, and the ridges separating them of the usual fantastic shapes.

Above, the glaciers were covered with snow, which, as one looked higher and higher, was seen to gradually obliterate the crevasses, and assume the appearance of a *névé*. The extent of glacier free from snow was very small; the region in which thawing can take place to any considerable extent being confined to a range not far above sea level.

Here and there were to be seen, on the surface of the glacier, the usual deep vertical pipe-like holes full of water. These were lined by concentric layers of ice, composed of prisms disposed radially to the centres of the holes and produced by successive night frosts.

Cones of ice covered with sand, and appearing as if composed of sand alone, but astonishing one by their hard and resistant nature when struck with a stick, were also to be seen on the glacier. I have seen closely similar cones in Tyrol; and, when a tyro at alpine climbing, have jarred my hand in attempting to thrust my alpenstock into them. Here the sand was black and volcanic. Small table-stones were not uncommon upon the glacier, and, in fact, all the phenomena caused by thawing from the action of direct radiant heat were present.

The usual narrow longitudinal lines or cracks caused by the shearing of the ice in its differential motion were present, and gave evidence of the grinding together of the closely opposed surfaces forming them.

The dirt and stones on the surface of the ice were as usual more abundant towards the termination of the glacier and the moraine, but they were not so abundant as usual, and there

\* J. Y. Buchanan, "Proc. R. Soc." No. 170, 1876, p. 609.