

same plants are found to range from sea-level up to 3000 feet, and there is no real limit of altitude; even at 7000 feet elevation a thick cushion of moss, several inches in length, was found by the German North Polar Expedition covering the ground. This remarkable condition in the Arctic regions is mainly accounted for by Dr Pansch from the fact that, with the sun always near the horizon in high latitudes, the hill-slopes receive its rays nearly vertically, and thus receive more radiant heat even than the flat land below them. There is little cooling at night, the clouds and mist preventing radiation.

“In Kerguelen Island, of course, in its low latitude, the inclined surfaces do not profit so much by their inclination. There, as in the high north, the mosses and lichens are the highest plants in range. In the successive groups of islands, Marion, Kerguelen, and Heard, they come lower and lower down the mountain slopes, and in Possession Island, south of the Antarctic Circle, the few flowering plants remaining below them at Heard Island have disappeared, and they are left growing alone.

“In all the southern islands the density of the phanerogamic vegetation, the extent of development of the individual plants, and the number of species present, decrease directly with the height. The facts show how much more the constant absence of warmth, and a continuous moderately low temperature, is inimical to plant development, than is periodical cold of the severest kind. In East Greenland the condition of the vegetation in various localities depends more on the distance of these from the ice barrier than on their position more or less north or south. The vegetation becomes more abundant as progress is made inland, away from the ice-bound coast. Exactly the opposite seems to hold in Kerguelen Island, where the chief source of warmth, though at the same time the constant cause of the equalisation of temperature, is the sea, and where the accumulated snow inland, and its attendant mists, render the soil there barren. In East Greenland, phanerogamic water-plants are absent, because of the long freezing of the water in winter. In the southern island there is a *Limosella*, and a large number of the other phanerogams seem to take on a special aquatic habit.

“To return to Heard Island. At Corinthian Bay, large masses of sea-weeds were banked up on the sandy shore, where I collected eight species, which have been described by Professor Dickie.¹ Amongst them were two new species—two which occur at Kerguelen Island, whilst the remainder occur in Fuegia. The main mass appeared considerably different from the masses of algæ found on the Kerguelen shore. *Durvillea utilis* grew attached to the rocks under the cliffs, but the kelp (*Macrocystis pyrifera*) does not grow at all about this group of islands, according to the sealers, which is a remarkable fact, considering its great abundance at Kerguelen Island.

“The sealers said that the climate of Heard Island was far more rigorous than that of Kerguelen Island. In winter the whole of the ground is frozen, and the streams are stopped, so that snow has to be melted in order to obtain water; but in December, at Midsummer, there is plenty of sunshiny weather, and Big Ben is often to be seen. It is possible to land in whale-boats on the average of the whole year only once in three days, so surf-beaten is the shore, so stormy the weather.”

¹ *Journ. Linn. Soc. Lond.*, vol. xv. p. 47.