

its rays nearly vertically on their surfaces, 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's Land, 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, Heard, they come lower and lower down the mountain-slopes, and in Cockburn Island, south of the Antarctic Circle, the few flowering plants remaining below them at Heard Island have disappeared, and they are left growing alone. At Cockburn Island the lichens range highest, and one species reaches an altitude of 1,400 feet.

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.

The condition of the vegetation in various localities in East Greenland 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's Land, where the chief source of warmth, though at the same time the constant cause of the equalization of temperature, is the sea: and where the accumulated snow inland, and its attendant mists, render the soil barren.

In East Greenland all phanerogamic water plants are absent, because of the long freezing of the water in winter; in the southern islands 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 seaweeds were banked up on the sandy shore. I collected eight species, which have been described by Prof. Dickie.* Amongst them were two new species, and two which occur at Kerguelen's Land, 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 pirifera*) does not grow at all about this group of islands, according to the sealers, which is a remarkable fact, in consideration of its great abundance at Kerguelen's Land.

* "Journal of the Linn. Soc." Vol. XV, p. 73.