

encountered as the mountains are ascended, and at 1,000 feet most of it ceases.

On some active volcanoes, however, as at the Banda Group near the Moluccas, a gradual decrease in the vegetation in correspondence with increased altitude is brought about by exactly opposite conditions, namely, gradual increase of heat. Here, close to the crater at the summit, the soil is excessively hot, yet one or two plants grow in it where it is almost too hot for the botanist's hand, and these straggle upwards, beyond, distancing more sensitive competitors, till a region is reached which is barren of all but lowly organized algæ, which grow around the mouths of natural steam jets, as about the hot springs in the Azores and elsewhere.

In very high latitudes only, apparently, is the vegetation not influenced by altitude. On the mountains in East Greenland, the same plants extend from sea level up to as high as 7,000 feet altitude. This circumstance is accounted for by the fact that here the sun never rising far above the horizon, its rays strike the mountain-slopes nearly or quite vertically, and hence by their greater power compensate for the larger amount of heat lost by radiation at great elevations. The flat land receives the rays on the other hand very obliquely, and hence with much less force.*

The combination of effects due to difference of aspect with regard to the trade wind and sun produces a marked difference in the altitudes at which plants can grow at various aspects in St. Vincent. Thus *Aizoon canariense*, a Malvaceous plant which on Bird Rock grows close to the sea level on its windward side, does not commence on the leeward side of the hills of the main island till 700 or 800 feet. On the mountains on the southern side of the island, the vegetation does not come so far down the windward slopes, since the wind is heated and dried before reaching them, by passing over the hot central plain.

Vertical dikes of basalt are very numerous all over the island, penetrating the main component rocks, by the disintegration of which they are often weathered out so as to project as walls. They usually show a columnar structure, the columns being as usual at right angles to the cooling surfaces. I saw several in which the cleavage in the centres of the masses was laminar and parallel to the lateral surfaces, whilst on either side the dikes were composed of very regular small columns disposed at right angles to these surfaces. In the Auvergne

* "Die Zweite Deutsche Nordpolarfahrt in den Jahren 1869 und 1870," 2ter Bd. Wissenschaftliche Ergebnisse. Leipzig, F. A. Brockhaus. "Klima und Pflanzenleben auf Ostgrönland," von Adolph Pansch in Kiel.