

either side of that Ocean from one another, and were the conditions existing in 1,000 fathoms very different from those obtaining in depths of 2,000 and 3,000 fathoms, it might well be conceived that the Western Atlantic deep-sea animals might be isolated from those of the Eastern Atlantic and be very greatly different from them. There is only one narrow channel, lying just north of Tristan da Cunha, in the South Atlantic, where a depth of 2,000 fathoms extends over from one side of the Atlantic to another, and by which migration in the supposed case would be possible.

Similarly in the case of the Pacific, there is only a narrow channel, situate between the Fiji Group and Tahiti, by which the deep waters of the Southern Pacific communicate directly with those of the Northern.

The deep-sea animals are however not restricted by these ridges, and the shallows of 1,000 fathoms' depth do not act as barriers. Were there any marked isolation by great depth, we might have hoped to have met with animals of great antiquity in the deepest holes, since these must possibly be regarded as occupying the sites of very old depressions on the earth's surface.

Dr. Wallich, in his celebrated work, "The North Atlantic Sea Bed," unfortunately never completed, though so full of most important discussions of deep-sea phenomena, speaks almost prophetically of the migrations of animals which "must take place along the deep homothermal sea; that great highway extending from Pole to Pole, which is for ever closed to human gaze, but may nevertheless be penetrated by human intelligence."*

Marine animals may throughout all time have migrated in the course of generations across the equator, from north to south, by way of the deep sea, and on reaching temperate or cold latitudes may have worked their way up into shallow water and taken to coast life, and assumed forms more or less like those of their ancestors who started on the journey.

Regarded as a high-road for migration across the equator, the deep sea may well be compared with the summits of those mountain chains which, in a similar manner, have acted as bridges across the tropics for the passage of non-tropical plants. The deep-sea animals themselves also, considered as a group, may be well compared to Alpine floras, there being many points of analogy between the two assemblages.

As in the case of Alpine floras, plants which occur at sea-

* G. C. Wallich, M.D., F.L.S., F.G.S., Surgeon-Major on the Retired List, H.M. Indian Army, "The Atlantic Sea Bed," Pt. I, p. 105. London, Van Voorst, 1862.