

## CHAPTER XVIII.

Admiralty Islands to Japan—The Schizopoda, Cumacea, and Phyllocarida—Japan—The Japan Stream—Japan to the Sandwich Islands—The Hydroida—Honolulu—Hawaii—Sandwich Islands to Tahiti—Dr. Rudolf von Willemoes Suhm—Tahiti—The Corals—Structure of Coral Reefs.

## ADMIRALTY ISLANDS TO JAPAN.

ON the 10th March 1875, at 3.30 P.M., the Challenger left the Admiralty Islands for Japan. In steaming out of Nares Harbour, the ship suddenly came into shoal water, and before the engines could be stopped, passed over a coral patch of  $3\frac{3}{4}$  fathoms, with some very suspicious looking ground to the eastward. When outside the harbour, a sounding and a productive haul of the trawl were obtained in 150 fathoms.

After leaving the Admiralty group, the regular work of sounding and obtaining serial temperatures and dredgings again commenced.

In this section—from the Admiralty Islands to Japan—thirteen soundings, twelve serial temperature soundings, one dredging, and six trawlings were obtained.

During the passage the force of the wind was exceedingly light; on no occasion did it exceed a force of 6, the average being from 2 to 3. Its direction for the first few days after leaving Nares Harbour was variable, shifting gradually from W.N.W. through N. to N.E. The true trade wind was reached in lat.  $1^{\circ} 15' N.$ , and lasted to the 19th parallel, shifting more and more east as northing was made. From the 19th parallel to Japan, variable breezes were experienced which, commencing at N., shifted gradually to N.E., E., and S.E., finally dying away at S. or S.W.

The currents in the immediate neighbourhood of the Admiralty group, and as far north as the 5th parallel of north latitude, were very strong, running to the westward at rates varying from 14 to 37 miles per day, or at a mean rate of 26 miles per day. Between the 5th and 10th parallels little or no current was experienced, but from thence to the 19th parallel, where the trade wind was lost, an average set of 17 miles per day was experienced, the direction varying from N.W. to W.S.W. From the 19th parallel the currents were variable until the Japan Stream was entered.

On the 23rd March, in lat.  $11^{\circ} 24' N.$ , long.  $143^{\circ} 16' E.$ , a sounding of 4475 fathoms was obtained,—the greatest depth observed during the cruise. Such deep water not having been expected, only 3 cwt. of sinkers were put on the rod, which being too light a weight for the depth, the intervals between the 100 fathom marks entering the water were somewhat long. The line was checked at 3000 fathoms, but the accumulators showed unmistakably that the weights had not reached the bottom; at 4575 fathoms