that the line continued to hang vertical during the whole three hours that the observation continued. He justly ascribes this occurrence to the motion of the whole body of water to the north with an equal velocity. The set towards the coast in the more southern portion of the stream is shown by the frequent wrecks on the coast of Chili, and the difficulty which vessels leaving Valparaiso to double Cape Horn experience in obtaining a sufficient offing. This stream, like the others we have spoken of, varies in breadth and strength at different seasons.

We experienced the set of this stream in a decided manner; for the amount of our drifting current between Cape Horn and Valparaiso, was two hundred and fifty-four miles, in a direction north-by-east.

The change in direction from northeast to north takes place about the latitude 37° S., or in the neighbourhood of the island of Mocha.

In our passage from Valparaiso to Callao, we found the waters of a low temperature; but the general effect of current, amounting to one hundred and seventy-one miles, was in a direction nearly due west. The surface Polar Stream therefore seems to be deflected by the bight formed by the coasts of Chili and Peru, but after passing this it again receives its direction to the north.

Off Callao this stream is confined to narrow limits, but is still readily distinguishable by its low temperature, and the drift of the ship to the northwest; the breadth was estimated at one hundred miles.

The Gallipagos Islands oppose an obstacle to this stream, and phenomena of currents occur in this neighbourhood, and particularly around the more southern ones, that are obviously due to this cause, and which the isothermal lines on the chart clearly indicate. By these islands also the stream is divided into two branches, one of which is felt as far to the north as Panama; the other is thrown westward, and merges in the Equatorial Stream of the Pacific.

The temperature of the water around these islands is low, as might be expected from the Polar Current reaching them; and thus may be explained the remarkable fact, that although under the equator, no coral is found there, because the water is below the temperature at which, according to Mr. Dana, the animals that form the coral reefs can live, or at least become numerous; this will hold good with all the coasts washed by polar currents.

Between Callao and Tahiti, after crossing the Polar Stream, we experienced little current. Among the islands of the Paumotu Group none whatever was perceived, and our whole drift was no more than seventeen miles in a direction N. 57° E.

On approaching these islands, the change in the surface temperature