

During the day numerous tide ripples were passed, but from observations the tide did not appear to run stronger amongst than between them. At 5.50 P.M., when abreast of Obi Lato, steam was raised and the vessel proceeded N. by E. for 20 miles, and then stood N.W. by N., partly to avoid the Bahia Shoal, and partly to get into a position for sounding and dredging off Batian Islands. During the night there was very vivid lightning.

On the 13th, at 5.30 A.M., the position of the ship by star observations being lat.  $0^{\circ} 48' 37''$  S., long.  $126^{\circ} 58' 30''$  E., a sounding, trawling, and temperatures were taken in 825 fathoms (see Sheet 31). At daylight the adjacent land could be clearly made out, and angles were obtained verifying the positions, given above, of Tapa and Obi Lato Islands, angles being also obtained to all the prominent objects on the Batian Islands as far north as Tapi Island. At 11 A.M. the trawl was hove up, and sail was made towards Tapi Island, a running survey being made as the ship proceeded. At 3 P.M. a latitude by Venus was fortunately obtained, and observations for longitude at the same time, which, with the observations obtained at daylight, and at frequent intervals since, enabled the prominent peaks of the Batian group to be fixed satisfactorily, and rendered the results to a great extent independent of the tide.

The islands of Mandioli, Sao, Tawali, and Tapi, and the summit of Mount Laboa, on Batian Island, are correct relatively to each other on Sheet 3 of the Admiralty Charts of the Indian Archipelago, but they all require to be shifted S.  $75^{\circ}$  E. (true) 3 miles to make them agree with the positions obtained by the Challenger (depending on the longitude of Amboina). Mount Laboa is a remarkable flat-topped mountain, 7150 feet high, in lat.  $0^{\circ} 44' 30''$  S., long.  $127^{\circ} 31' 45''$  E. Mandioli Island is about 1000 feet high, and is also flat-topped. Sao Islets are low. Tawali Island is high and flat-topped, but has a peak rising above the surrounding hills, 2650 feet high, in lat.  $0^{\circ} 20'$  S., long.  $127^{\circ} 10'$  E. The highest peak of Tapi, 1300 feet above the level of the sea, is in lat.  $0^{\circ} 15'$  S., long.  $127^{\circ} 4'$  E. Off the south and west extremities of Tapi are two small islets, about 200 feet high and 3 miles to the northward of its north point, in lat.  $0^{\circ} 11'$  S., long.  $127^{\circ} 1'$  E., are three small rocks 130 feet high and close together.

From the position of the ship at 6 P.M., 10 miles due west of the peak of Tapi, the islands of Ternate, Tidore, and Metir were seen, as well as one of the islands northward of Little Tawali, probably Guaricha.

A fine breeze was experienced from 6 A.M. to 4 P.M., when the weather became calm and showery; so steam was raised and the vessel proceeded N.W. by N. outside the Wolf Rock. Whilst sounding in the morning a strong southerly set was observed, but this changed after 11 A.M., as the sights at 3 P.M. showed a greater run than the patent log. There can be no doubt, therefore, that tides are experienced in the Molucca Passage occasionally, although they may be irregular.

On the 14th, at 1.40 A.M., the ship rounded the Wolf Rock, and at 5.30 A.M. stopped and sounded in 1200 fathoms, obtaining temperature observations, in lat.  $0^{\circ} 42'$  N., long.  $126^{\circ} 37' 30''$  E. The serial temperatures here showed that the Molucca Strait or Passage was open to the Pacific Ocean to, at any rate, the depth of 1200 fathoms (see Sheet 31 and Diagram 14).

At daylight all the Molucca Islands, as well as the island of Meyo, were in sight, but Tifore was not seen; it must, therefore, be much lower than supposed. At this time the view was magnificent—looking east no less than ten volcanic cones were visible, several of them in eruption, extending from the northern end of Gillolo to Makyan Island, the