

2½ miles per hour. The maximum temperature of the east going stream differed but slightly from that of the west going stream, for it attained its highest temperature after 5 P.M. on the 20th, at which time it was quite certain that the current was easterly. These remarks, of course, only refer to that part of the Agulhas Current crossed by the Challenger between the meridians of 19° and 23° E., and the parallels of 36½° and 39° S. Outside the space enclosed between those lines the direction and strength may be, and doubtless are, considerably modified <sup>1</sup> (see Diagram 8).

On the 23rd the surface temperature became lower as the ship proceeded to the southward, but was still higher than the air, owing probably to the southerly direction of the wind. The day was fine, with slight rain squalls. In the evening the barometer fell, the wind backed to the northward and became very squally.

On the 24th, at 10 A.M., the wind being light and the weather fine, a sounding and temperatures were obtained in 1570 fathoms. The deposit was a Globigerina ooze containing 92 per cent. of carbonate of lime, and a few Diatoms, Radiolarians, and mineral particles chiefly of volcanic origin. At 2 P.M. sail was again made towards Marion Island. Whilst sounding, a Penguin was seen swimming about 50 yards from the ship. The surface temperature was steady at from 42° to 43°, and about the same as that of the air. At 3 P.M. the weather became gloomy and the wind backed from N.W. to N.E. and E., a true cyclonic movement; the barometer fell rapidly, reaching its lowest point at 1 A.M. on the 25th, when there was but little wind. After 1 A.M. it rose again and the wind shifted to south and southwestward, thus retaining its cyclonic movement, and freshened to a moderate gale. At noon Marion Island was sighted bearing S. by E., and shortly after Prince Edward Island. The ship stood towards the land until 6 P.M., and then wore and stood to the northwestward until midnight. At 6 P.M. Ross Rock bore S. 68° E., right extremity of Prince Edward Island S. 52° E., Boot Rock south, and the right extremity of Marion Island S. 30° W. The peaks of the islands could not be seen, being shrouded in mist.

#### PRINCE EDWARD AND MARION ISLANDS.

At daylight (4 A.M.) on the 26th, the left extremity of Prince Edward Island being E. by S. ½ S., and the left extremity of Marion Island S.W., a course was shaped towards Boot Rock, the vessel passing about 1½ miles to the northward of it, steering careful courses, and registering the distances sailed by patent log in order to fix the relative position of the two islands, and make a running survey of them.

Marion and Prince Edward Islands were discovered on the 13th January 1772, by M. Marion du Fresne, who named the northern "Ile de la Caverne," in consequence of the large cave he observed in the cliffs of its eastern coast, and the southern "Ile de

<sup>1</sup> For the temperature observations, see Narr. Chall. Exp., vol. ii. p. 423, 1882.