



During the stay at Tahiti a careful examination was made of the coral reefs, and a survey was specially conducted to ascertain the seaward slope of the barrier, by Lieutenant H. Swire, who writes as follows:—

“ I gladly entered into co-operation with Mr. Murray, under whose guidance and general superintendance the examination was conducted, and by his desire made a survey of the seaward face of the reef, carrying the soundings from the water's edge to a depth of 180 fathoms by boat, the lines of soundings being afterwards extended by the ship when under steam, to a depth of 680 fathoms (see fig. 269).

“ By sounding to seaward on lines 200 yards apart, and perpendicular to the direction of the reef, taking the depth at equal intervals and carefully fixing each position by angles; and in addition, by fixing the position on each line of certain given depths—as for instance 5, 10, 15, 20, &c., fathoms—it was considered that a good insight into the configuration of the reef would be obtained, whilst by ‘arming’ the sounding lead with the usual mixture of white lead and tallow in order to ascertain the nature of the bottom at each cast, and by making free use of drag nets, a dredge fitted with tangles, a water telescope, &c., the investigation into the other conditions of the reef could be simultaneously carried on.

“ The portion of the reef selected was 1120 yards in length, the greater part being in general direction a straight line, which circumstance somewhat simplified the matter, as a single base line sufficed for the greater portion of the reef.

“ In order to obtain soundings at given