Station 192, off the Ki Islands. Lat. 5·42° S., long. 13·2° 25′ E. 129 fathoms. Three specimens.

Station 209, off Zebu, Philippine Islands. Lat. 18° 10′ N., long. 123° 55′ E. 95 fathoms. Several specimens.

Notes on the Structure of the Soft Tissues of *Stephanophyllia formosissima*.

When decalcified the coral yields a plump tough mass corresponding exactly in shape with that of the hardened coral before the removal of the calcareous support. A continuous layer of soft tissue does not, as in the case of *Bathyactis symmetrica*, separate off from the inferior surface of the coral, and hang loose unattached to the structures above it. The whole is compact and elastic, and returns to its original form after compression. It may be cut in any direction without falling to pieces. The inferior surface of the decalcified mass presents a radiate structure closely corresponding in appearance to that seen on the under surface of the corallum. Five ridges of soft tissue radiate out from the centre, increasing in number by division, with regularity at definite distances from it, and gradually becoming thicker towards the margin of the coral. These ridges of tissue occupy in the recent coral the intervals between the costæ, and thus correspond in position with the septa. The inferior edges of the mesenteries correspond in position with the costæ.

The ridges of soft tissue lying in the intercostal grooves of the corallum are connected together by series of transverse trabecular prolongations of the mesoderm which, passing through the perforations in the base of the corallum lying on either side of the inferior edges of the septa (Pl. XVI. fig. 5), join the bases of the mesenteries where these lie above the costæ. Thus, by means of this series of trabeculæ of soft tissue, the various complex ramifications of the general mass are held together, and hence the compactness and elasticity of the whole decalcified coral, as opposed to the loose and disconnected condition of that of such a form as *Bathyactis symmetrica*. Masses of contorted trabecular mesoderm are developed throughout the coral corresponding in position with the ramifications of the porous corallum, and a large spongy mass of this nature remains behind after decalcification in the place of the columella.

The appearance presented by the decalcified coral, when laid open by a vertical incision, is shown in figure 9, Plate XVI. A short simple alimentary tube leads to a wider cavity bounded by the free borders of the mesenteries with their attached filaments. The mesenteries of the most inferior order spring from the upper body-wall of the coral (corresponding with the membrane forming the disc in *Flabellum*) near its margin, and thence are stretched to join the basal soft structures and columella. These mesenteries are very narrow, and their free border is only very slightly curved. The mesenteries of successively higher orders are broader and broader, have a longer stretch