They are, however, in part very well preserved in alcohol, so one can learn something of the structure of the soft parts. The two specimens represented in natural size on Pl. CIII. figs. 1 and 2 (of which fig. 1 represents two individuals united into one) were obtained along with some fragments of other specimens, on blue mud ground, in the vicinity of Little Ki Island (Station 192, lat. 5° 49′ 15″ S., long. 132° 14′ 15″ E.) in 140 fathoms. A somewhat larger cup was procured in the neighbourhood of Timor (Station 194, lat. 4° 34′ 0″ S., long. 129° 57′ 30″ E.) on volcanic mud, at a depth of 200 fathoms; and a small dried specimen, only about 1 cm. in height, from St. Thomas, West Indies (Station 24, lat. 18° 38′ 30″ N., long. 65° 5′ 30″ W.) on Pteropod ooze in 390 fathoms. All these specimens have the form of a thick-walled cup which expands upwards from a narrow basal plate.

The lateral wall consists of a plate from 1 to 3 mm. thick, which is simply folded and drawn out into radial open tubes. While in the small dried specimen from Station 24 these radial excurrent tubes of the gastral cavity are only 3 mm. broad, and are almost all isolated towards the exterior, in the larger specimens from Stations 192 and 194, they have a tolerable breadth (as much as 5 mm. or more), and are fused to one another laterally, so that they project externally in meandering lines or interwoven reticulate plates (Pl. CIII. figs. 1, 2). The free upper margin of the entire cup exhibits a sinuous external curvature. This is also true of the regular funnel-shaped large specimen (10 cm. broad, and 7 cm. high) figured by Gray (*loc. cit.*). The figure suggests that the radial tubes have originated through closure of the parietal folds by growth of the entire body. One may regard the entire upper aperture of the cup or funnel as the chief osculum, and the lateral orifices of the tubes as secondary or incidental oscula. At all events the water stream passes through the coherent plate in such a manner that it enters from the outside into the depressions, furrows, &c., between the radial tubes, permeates the continuous plate, and then reaches the lumen of the tubes which open out laterally, or the central space which is in open communication with these, and thus reaches the exterior, whether it be through the outer openings of the radial tubes, or through the large terminal aperture of the central (gastral) cavity.

The finer structure of the body is best studied in sections at right angles to the wall plate; one of these I have combined diagrammatically on Pl. CIII. fig. 3 from numerous preparations.

The dictyonal framework consists of moderately strong beams. These are beset with numerous small conical hooks, disposed in great part in regular cross rows. The beams are united with tolerable regularity, and form for the most part distinctly square, more rarely three-sided or five-sided meshes. The somewhat thickened nodes of intersection are provided with rough flat papillary rounded swellings. It seems to me noteworthy that on the (outer) dermal as well as on the gastral surface of the dictyonal framework the nodes of intersection which are here very richly provided with protuberant papillæ, are