

size (Pl. XXIII. fig. 9, *t.c.*). They exhibit the usual variety of shape and have a granular appearance. Pigmented cells are fairly numerous. In some places they are scattered singly and have a rounded form. In others they are aggregated to form small clumps in which the individual cells are more or less polygonal from mutual pressure (Pl. XXIII. fig. 9, *p.c.*). These pigmented cells are of a light yellow colour in thin unstained sections. They stain readily with picrocarmine, aniline blue, and other dyes. There are a few bladder cells in the outer layers of the test but none in the deeper parts. The vessels are narrow, not at all numerous, and end in elongated bulbs (Pl. XXIII. fig. 9, *t.k.*). The matrix as a rule is homogeneous in appearance, but in some places it is very slightly fibrillated. The ectoderm is very well marked, and can be separated from both test and mantle, between which it lies, as a distinct membrane.

The mantle is remarkable on account of the longitudinal arrangement of nearly all the muscle bands. They are very delicate but fairly numerous, and are arranged with great regularity. They form a moderately strong musculature on the branchial region of the body, which becomes much less powerful as it is traced posteriorly over the viscera. On the lower part of the abdomen and on the post-abdomen the muscle bands are few and very narrow. The sphincters around the apertures are fairly well developed. The mantle is deeply cleft, at both branchial and atrial apertures, into six regularly shaped and equal lobes (Pl. XXIII. fig. 8).

The transverse vessels of the branchial sac are wide and have well-marked horizontal membranes, but no papillæ or other projections are present. The stigmata are much more regularly placed than in *Tylobranchion speciosum*, and are of a fair size (Pl. XXIII. fig. 10, *sg.*). All the vessels of the sac are rather thick walled and opaque. The endostyle is like that of *Tylobranchion speciosum*.

There are about twenty languets. They are long and narrow, and are scarcely at all flattened (Pl. XXIII. fig. 12, *l.*). Each languet is continuous with one of the horizontal membranes (*h.m.*) of the branchial sac, and the series is connected by a slightly thickened ridge of epithelium (*ep.*), behind which are placed close together two parallel bands of muscle fibres (Pl. XXIII. figs. 11, 12, *m.f.*).

The tentacles are large and rather irregular in size and position. The dorsal tubercle is inconspicuous. It has a rounded opening placed near the base of the tentacles, and leading into a large infundibulum which may be traced into a narrow neural duct leading backwards behind the prebranchial zone. There is a well-marked peritubercular area formed by the bending posteriorly of the peripharyngeal bands, but the tubercle is placed far in front of it.

The œsophageal aperture is placed at the dorsal edge of the posterior end of the branchial sac, and leads at once into an elongated stomach which is directed posteriorly, and has its wall thrown into a series of strongly marked transverse folds. These are lined with columnar ciliated epithelium, and they form a conspicuous feature in the