

a layer of sand 5 millimetres thick (even in Pl. II. fig. 10 the soft part of the wall is too large in proportion to the layer of sand granules). Where the sand grains are absent the fundamental substance is homogeneous and furnished with two different forms of cells, small branched cells and larger roundish ones, the latter being entirely filled with strongly refractive concrement-like granules. The tissue between the sand granules (Pl. XIV. fig. 8), on the other hand, appears rather fibrous, and even the corpuscles of connective tissue are fusiform in shape. The direction of the fibres and the fusiform cells is parallel to the surface of the body. In most parts the sand granules are so thickly compacted that the fundamental substance is entirely covered.

There are no ectodermal vessels in the wall, but the supporting fibres are very numerous; they are richly furnished with granular protoplasm, are very fine and branched on the endodermal side, whilst towards the ectoderm they become lost among the sand granules.

The mesodermal circular muscle, which is strongly developed as in the other Zoantheæ, is not confined merely to the inverted part of the wall, but extends a good way down into the outer section. It is strongest where it begins close to the oral disk and lies in the non-encrusted section of the wall, it then becomes narrower and gradually approaches the endoderm, till the lower end almost touches the epithelium. It consists of bundles of fibrillæ, which give repeatedly waved figures in transverse section; several bundles are united into roundish bundles of the second order, which remain farther apart from one another.

Whilst the wall is very thick and firm, all the inner parts consist of delicate, easily torn lamellæ. The oral disk only is tolerably strong, and foreign bodies (sponge spicules, sand granules) are enclosed here and there in its supporting lamella. It is covered by a smooth layer of ectodermal radial muscles, and the margin bears two rows of tentacles; I could not determine the number of the tentacles accurately because of the strong contraction, but there were probably about sixty of them.

Before the oral disk passes into the œsophagus, which is of considerable size, it rises into a thin, sharp-margined lip, which is repeatedly indented at the edge. A large number of longitudinal ridges of the œsophagus, which correspond to the origins of the perfect septa, spring from these indentations.

The œsophageal groove is remarkably distinct; it is distinguished by its depth, and is enclosed by two broad folds, almost as hard as cartilage. Gray probably had these folds in mind when he specially mentions that in *Sphenopus marsupialis* "the laminae of the stomach have a cartilaginous edge." They extend a little way beyond the lower margin of the stomach and form a projection, resembling the prow of a boat.

The arrangement of the septa agrees essentially with that already described in detail for *Zoanthus*, sp. ? Two small directive septa lie at the dorsal end of the œsophagus, two large directive septa at the ventral end, which is easily recognised by the œsophageal