

extent (Pl. XXXIV. fig. 3, *p.c.*). They tend also to become arranged in rows end to end, which gives them a fibrous appearance. They are always brown, and are coarsely granular in texture.

The spicules are stellate and very regular, their rays are tapering and sharp pointed (Pl. XXXIV. fig. 4). A few spherical forms occur. The spicules never reach quite to the external surface, but are separated from it by a layer of test containing bladder cells and pigment cells. Compared with the size of the test the number of spicules present is remarkably small.

The musculature of the mantle is almost entirely longitudinal in direction. A number of rather delicate bands spring from the base of the branchial siphon and spread posteriorly over the thorax. They occasionally give off branches, which unite with neighbouring bands, but nothing like a close network is formed. On the whole these bands run parallel with one another. A few transverse and irregularly running muscles are also present. The branchial siphon is long but narrow (Pl. XXXIV. fig. 2). It is lined by a layer of very dark coloured test, which becomes thickened at the posterior end of the siphon immediately in front of the tentacles. The branchial sphincter is powerful. The aperture is distinctly six-lobed.

The stigmata in the branchial sac are numerous (Pl. XXXIV. fig. 2), and their ciliated cells are very distinct. The muscle bands running along the transverse vessels are strong (Pl. XXXIV. fig. 5, *m.f.*). The endostyle is remarkably wide (Pl. XXXIV. fig. 2, *en.*). Its extremities form thickened projections at the anterior and posterior ends of the branchial sac. The nerve-ganglion is spherical. It is situated at the base of the branchial siphon.

The alimentary canal extends for a considerable distance behind the branchial sac. The œsophagus is very long and narrow (Pl. XXXIV. fig. 2, *œ.*). Its wall is usually thrown into a series of corrugations or slight transverse folds. The stomach is large and thick walled. It is usually ellipsoidal or nearly quadrate in shape, in some cases it is pyriform, the posterior end being narrower than the anterior. Its wall shows no folds or irregular thickenings. The œsophagus and the intestine where they join the stomach are seen in longitudinal sections to project for a short distance into its interior so as to form valvular arrangements (Pl. XXXIV. fig. 2, *st.*). The intestine is long; it extends for a short distance behind the stomach, and then turns anteriorly so as to form a narrow loop. The rectum runs close alongside the œsophagus in the long narrow region of the body which unites the thorax and abdomen (Pl. XXXIV. fig. 2, *r.*). It then runs along the dorsal edge of the branchial sac, and terminates in a small anus placed about half-way down the peribranchial cavity.

The testis is large and of ellipsoidal form. The long conspicuous vas deferens commences by coiling spirally four or five times around the testis (Pl. XXXIV. fig. 2, *v.d.*). A few ova of various sizes were found in some of the smaller Ascidiozooids. Probably