

are of rather large size and of various shapes. In the outer layer they are very numerous and closely placed. The brown colour is probably due to their presence.

The musculature of the mantle is much more developed than is usual in Compound Ascidiæ. The transverse bands are closely placed, and over part of the thorax they form almost a continuous layer. The longitudinal bands are more distant, but they are strong. The whole arrangement recalls the musculature of some of the Cynthiidae amongst the Ascidiæ Simplicis. Possibly the stiffness of the outer layer of the test has necessitated this excessive development of the muscular system, in order that complete contraction of the Ascidiozoid might be effected.

The branchial aperture is wide, and is surrounded by six slight lobes (Pl. XXVIII. fig. 10, *br.*). There is almost no branchial siphon, and the sphincter muscle is not strong. The atrial aperture is provided with a large bifurcated atrial languet (Pl. XXVIII. fig. 10, *at.*).

The fine longitudinal vessels in the branchial sac are rather wider than the stigmata (Pl. XXVIII. fig. 9, *l.v.*). The transverse vessels have slight horizontal membranes. The branchial region of the body is usually about 3 mm. in antero-posterior extent. The endostyle is large and conspicuous (Pl. XXVIII. fig. 10, *en.*). Its course is undulating.

The alimentary canal is of considerable size and forms a narrow loop. The wall of the stomach is folded longitudinally. The rectum is a long wide thin-walled tube.

*Aplidium leucophæum*, n. sp. (Pl. XXVIII. figs. 5-7).

*The Colony* is an irregularly rounded mass, slightly compressed laterally, and attached by a small area at the posterior end. The upper surface is broad and irregularly convex. The lower end is relatively narrow, and the sides slope outwards and upwards. The surface is slightly rough all over. The colour is a dull grey, with pale, circular spots.

The length is 2 cm., the breadth is 2.3 cm., and the thickness is 1.7 cm.

*The Ascidiozooids* are fairly large and numerous. A single large common cloacal aperture is present in the middle of the upper surface of the colony, but the Ascidiozooids are placed evenly all over the surface, and do not seem to be arranged in systems. The Ascidiozooids are about 1 cm. in length and 1.5 mm. in greatest breadth. The thorax is separated from the abdomen by a marked constriction.

*The Test* is firm, and the outer layer is stiffened by imbedded sand-grains. It is of a dark grey colour and nearly opaque. The inner part is of a lighter grey colour, and is rather less opaque. The test cells are fairly large and rather numerous, especially in the outer layer. They are of all shapes, and are frequently much branched. No bladder cells are present.

*The Mantle* is thick and opaque. The musculature is very well developed on the thorax; both transverse and longitudinal bands are present.