abdomen," and the great difference in length between different Ascidiozooids is mainly due to variations in the size of the post-abdomen or genital region. In some it is very small, being merely a short conical projection extending scarcely 2 mm. behind the intestinal loop (Pl. XXII. fig. 2), while in others (most of the Ascidiozooids) it forms a very long appendage, which may be twice as long as the rest of the body, though not so wide (Pl. XXII. fig. 3).

The test is exceedingly full of small test cells, exhibiting the usual variety in shape. Most of them are round, or nearly so, elongated and branched forms being less common (Pl. XXII. fig. 5). There are apparently no bladder cells even in the outer layer of the upper part of the colony, a region where they are generally seen. Delicate vascular appendages extend from the posterior extremities of the Ascidiozooids (Pl. XXII. fig. 4) downwards through the lower part of the colony. Some of them are just visible to the eye as fine lines in the dark grey test forming the peduncle.

In all the colonies there is a distinct line in the test marking the point where the upper soft convex mass, containing the branchial and intestinal parts of the Ascidiozooids (Pl. XXII. fig. 1), joins the peduncle, in which the genital regions and the vascular appendages are placed. Above this line the test is distinctly more of a yellowish tint than below it.

The ectoderm is very distinct, and can be separated as a coherent membrane from the test and the mantle. The mantle is very muscular, especially over the branchial region of the body, where the musculature is more like that of an *Ascidia* or a *Corella* than of a Compound Ascidian (see Pl. XXII. fig. 4).

Over the intestinal part of the body the muscles are not entirely absent, but they are much more feebly developed, and consist of fine bands running mainly in a longitudinal direction and occasionally branching and interlacing (Pl. XXII. fig. 4). On the post-abdomen or genital region the musculature is rather stronger, and is composed of a large number of longitudinal bands running nearly parallel to one another and forming a well-marked muscular investment to the reproductive organs. The branchial and atrial apertures are each provided with six well-marked lobes (Pl. XXII. fig. 4), and the sphincters are well developed.

The branchial sac is the most characteristic and remarkable organ of this species. It is very large, and has an enormous number of stigmata for a Compound Ascidian. These stigmata vary greatly in size, some rows being exceedingly small circular openings (Pl. XXII. fig. 8, *sg.*), while others are long narrow slits like the stigmata of a Simple Ascidian (Pl. XXII. fig. 9, *sg.*). In the small stigmata the ciliated stigmatic cells are small and rounded (Pl. XXII. fig. 10, *sg.*), while in the long narrow stigmata the cells are well defined with triangular projecting free ends (Pl. XXII. fig. 11). There are connectives running between the transverse vessels and the sinuses in the mantle outside.

The transverse vessels, which vary greatly in size, being in some places several times