The Ascidiozooids are visible all over the upper surface of the colony, except on the projecting margin. Their branchial apertures form minute depressions which show as dark dots (Pl. XXXVII. fig. 9). The thorax is very much larger than the abdomen, and is placed vertically in the colony (Pl. XXXVII. fig. 10). It usually extends about three-fourths of the way across from the upper to the lower surface. The abdomen does not extend behind the thorax, but lies at right angles to it on the dorsal edge (see Pl. XXXVII. fig. 10). This condition of parts is not at all related to that found in the family Botryllidæ, where the abdomen is also placed alongside the thorax in place of extending behind it. In the present species, and some other Didemnidæ, the abnormal position of the abdomen has probably been produced by the thinness of the colony, which must have been derived from a much thicker mass, and then became gradually converted into an incrusting film. As the colony became thinner and thinner, the Ascidiozooid would gradually come to have the abdomen bent at a greater and greater angle to the original antero-posterior axis of the body, until it reached the extreme condition found in the present species, where it does not extend beyond the posterior end of the thorax, but runs outwards at right angles to it. Any further bending after this angle had been reached would be of no advantage.

In the Botryllidæ, the alimentary canal lies on one side of the body, not on the dorsal edge, and is, moreover, placed close alongside the branchial sac, so as to be covered by the same layer of mantle. In the present species, on the other hand, the alimentary canal is widely separated from the thorax, not only by the mantle, but also by a large projection of the common test which lies in the angle between the œsophagus and the posterior end of the dorsal edge of the branchial sac (Pl. XXXVII. fig. 10).

The test is so hard and brittle that it feels like a layer of solid calcareous matter. Sections show that it is very full of spicules, which are specially abundant on the lower surface of the colony (Pl. XXXVII. fig. 10, *l.s.*), and form a very dense band in which no test matrix is visible. The spicules are more closely placed in this region of the colony than in any other Leptoclinid which I have examined. The part of the test where the spicules are least crowded is the central layer, and they gradually become denser as either surface is approached. On the upper surface, however, they are not nearly so abundant as on the lower (Pl. XXXVII. fig. 10).

In the central layer of the colony the test cells and the individual spicules are most clearly seen (Pl. XXXVII. fig. 11). The test cells (*t.c.*) are small and are generally rounded or fusiform; a few of them have developed small vacuoles, but no true bladder cells are present. The spicules vary greatly in shape. Some are of the regular stellate form, with tapering rays and sharp apices (Pl. XXXVII. fig. 11, *sp'*), while others have the rays thicker and blunter. In many cases the rays are reduced to rounded knobs (Pl. XXXVII. fig. 11, *sp.*), so that the spicule as a whole may become a mammilated sphere. A few of the spicules are asymmetrical, and have one half of the surface