of fusiform shape,[1] or consisting of two, three, or four rays only. Deformed and monstrous spicules also occur (Pl. XXXIX. fig. 6).

The spicules in the superficial layer of test stop at a short distance from the branchial apertures (Pl. XXXIX. fig. 5), just at the bases of the six large lobes. The greater part of each lobe is free from spicules, but the margin is bordered by a single row, and the apex contains a small mass of closely placed spicules. The result of this arrangement is that the six rays or angles of the branchial apertures stretching out between the lobes are greatly emphasised, and are conspicuous in a low power view of the surface (Pl. XXXIX. fig. 5).

The musculature of the mantle is delicate but rather regular. Equidistant longitudinally running muscle bands are present on the thorax. At the anterior end they radiate from the base of the branchial siphon. The atrial siphon is placed on the dorsal edge of the thorax, half way down.

The transverse vessels of the branchial sac are provided with strong muscle bands (Pl. XXXIX. fig. 4, *tr.*). The stigmata are short, but numerous and regular. The ciliated cells are distinct (Pl. XXXIX. fig. 4, *sg.*).

The endostyle is large. The tentacles are of at least two sizes, but they are not arranged with regularity. The nerve ganglion is spherical. It is placed at the base of the branchial siphon.

The alimentary canal is rather narrow. The œsophagus leads posteriorly from the branchial sac to the small globular or quadrate smooth-walled stomach. The intestine runs posteriorly from the stomach for a short distance and then sweeps round anteriorly in a wide open loop. The rectum lies alongside the œsophagus.

The male reproductive organs are placed on the intestinal loop, behind which they project for a considerable distance, and so form the posterior end of the body. The testis is large and ovate, and the conspicuous vas deferens coils from six to eight times spirally around it (Pl. XXXIX. fig. 7, *v.d.*). No ova and no embryos were discovered in any of the Ascidiozooids examined.

Leptoclinum (*?*) *jacksoni*, n. sp. (Pl. XXXVIII. figs. 19–22).

The Colony is massive and of irregular shape. It is attached by the greater part of the lower surface, which is strongly concave. The upper surface is irregularly conical; it is fairly smooth. The colour is a dull greyish-white.

The length is 1·7 cm., the greatest breadth is 2·5 cm., and the greatest thickness is 1·2 cm.

The Ascidiozooids are small but very numerous. They are closely placed all over the

[1] Possibly these simple fusiform spicules are merely fragments of the ordinary stellate ones which have been broken off in cutting the sections.