

provided with tapering rays, while the other half has rounded knobs (see Pl. XXXVII. fig. 11, *sp''*). As a general rule the spicules close to the surfaces of the colony are sharper, while those in the deeper parts are blunter, but there are exceptions.

The branchial siphon is very large. It is lined by a thick layer of test containing spicules (Pl. XXXVII. fig. 10, *br.*, and 12, *t.* and *sp.*). The sphincter is of very large size (*sph.*). At its posterior edge on each side a strong band of muscle fibres arises which runs downwards over the thorax near its dorsal edge (Pl. XXXVII. fig. 10), and crosses the œsophagus (Pl. XXXVII. fig. 13, *m.b.*) to be inserted into the test below the abdomen, and near to the lower surface of the colony. Just after crossing the œsophagus, the muscle band is joined by a smaller bundle of fibres which arises from the mantle over the posterior extremity of the endostyle (Pl. XXXVII. fig. 13). This is in all probability, like the corresponding bands in *Leptoclinum thomsoni*, and those described by von Drasche in the case of *Didemnoides macrophorum*, a system of retractor muscles.

The branchial sac is particularly large (Pl. XXXVII. fig. 10). It is longer antero-posteriorly than dorso-ventrally. The three transverse vessels separating the rows of stigmata are moderately wide; they are all of the same size, and are provided with bands of muscle fibres (Pl. XXXVII. fig. 14, *tr.*). The stigmatic cells are distinct and regular.

The endostyle is very large and conspicuous (Pl. XXXVII. fig. 10). The dorsal languets are larger than the tentacles. They extend nearly to the endostyle across the branchial sac (Pl. XXXVII. fig. 10). Their bases are united by a band of muscle fibres which runs along the median dorsal line of the thorax. The tentacles are fairly numerous (Pl. XXXVII. fig. 10). The smaller ones are liable to a certain amount of variation in number and arrangement.

The œsophagus runs dorsally from the posterior end of the dorsal edge of the branchial sac. It varies somewhat in calibre (Pl. XXXVII. fig. 10). The stomach lies in the same straight line with the thorax, and is elongated dorso-ventrally. It is not large, and its walls show no ridges nor other thickenings. They are lined by long columnar cells (Pl. XXXVII. fig. 10). No reproductive organs were found in any of the Ascidiozooids examined.

*Leptoclinum speciosum*, n. sp. (Pl. XXXVI. figs. 1-8).

*The Colony* is a flat expanded mass of considerable size. It is thin and incrusting, and is attached by the whole of the lower surface. The upper surface is even, and perfectly smooth. The colour is pure snow white.

The length is about 5 cm., the breadth is 4.5 cm., and the general thickness is about 2 mm.

*The Ascidiozooids* are numerous and of fair size. They are closely placed all over the upper surface of the colony. They are not arranged in definite systems, but common