

second Ascidiozoid represented in the figure shows an ovate stomach with the long axis antero-posterior, and the posterior end narrow. In transverse sections the lumen of the stomach is seen to be cruciform (Pl. XLI. fig. 2, *st.*). This is produced by the presence of four longitudinal pads of thickened epithelium. The intestine is long. It runs posteriorly from the stomach and then turns ventrally in rather a wide curve, and before turning anteriorly it becomes more or less distinctly thickened for a short distance (Pl. XLI. fig. 2, where the Ascidiozoid at the left side of the figure shows the thickening more than usually distinct, and forming a considerable enlargement on the intestine). From this point the rectum runs anteriorly and dorsally so as to reach the œsophagus which it crosses. The intestinal loop is wide.

The testis, in the form of a single large ovate mass (Pl. XLI. fig. 2, *t.v.*), was present in some of the Ascidiozooids examined, but no ova and no embryos were discovered in any part of the colony.

*Leptoclinum thomsoni*, n. sp. (Pl. XLI. figs. 1, 5-7).

*The Colony* is an irregular mass, incrusting and rather flat. The surface is moderately even and smooth. The colour is opaque white.

The length is about 2 cm., the breadth about 0·7 cm., and the thickness 2·5 mm.

*The Ascidiozooids* are numerous but small. They are distributed evenly over the surface of the colony, and are not arranged in regular systems. No common cloacal apertures are visible. The body of the Ascidiozoid is divided into two distinct regions, thorax and abdomen.

*The Test* is hard and firm. It is of a creamy white colour, and is quite opaque. In sections the clear structureless matrix is seen to contain a few delicate test cells and a large number of calcareous spicules. The spicules are fairly large, and are of very regular stellate form. In some places they are densely crowded.

*The Mantle* is rather muscular. It has both longitudinal and transverse bands.

*The Branchial Sac* is moderately large. It has three or four rows of large stigmata which are arranged with regularity. The transverse vessels are provided with muscle fibres.

*The Endostyle* is large and conspicuous. Its course is greatly convoluted.

*The Dorsal Lamina* is represented by a series of languets.

*The Alimentary Canal* is large. The stomach is fusiform and smooth-walled.

*Locality*.—Unknown.

Some colonies of this species were found attached to Algæ, along with specimens of *Leptoclinum carpenteri*, during one of the cruises of the "Porcupine." The exact locality is unknown.