

surface, and are not arranged in definite systems. There are no common cloacal apertures visible.

*The Test* is very hard and firm. It is of a dull whitish colour and is opaque throughout. The matrix contains numerous test cells and calcareous spicules. No bladder cells are present. The spicules are stellate and regular, but they vary a good deal in size.

*The Mantle* is rather thick, and the musculature is well developed.

*The Branchial Sac* is small, and the stigmata are inconspicuous.

*The Endostyle* is very wide. Its course is somewhat undulating.

*Locality*.—Port Jackson, Sydney, Australia; depth, 6 to 15 fathoms.

One specimen of this species was dredged in Port Jackson, from shallow water. It is a small but massive colony, which has evidently been attached to some dome-shaped object, as there is a large hollow on the lower surface (Pl. XXXVIII. fig. 19). The area of attachment is very smooth; there are no projecting threads or tufts of test. The thickness given in the above description is measured across the base of the colony at right angles to the breadth. The distance from the point of attachment to the upper surface in the thickest place (the centre of the colony) is a little over 1 cm. The colour is a dirty cream tint; it is a mixture of white, yellow, and grey, and is quite opaque.

The Ascidiozooids are remarkably small, and are closely placed. They are not conspicuous, and show merely as minute depressions on the surface. In external appearance this species resembles *Leptoclinum japonicum* somewhat, but in that form the Ascidiozooids are much more distinct (see Pl. XXXIX. figs. 1, 2).

The test is solid and is relatively of large amount (Pl. XXXVIII. fig. 20). It is densely crowded with test cells, which are of rather large size and of various shapes (Pl. XXXVIII. fig. 21, *t.c.*). The spicules are fairly abundant in the superficial layer of test, but are scarce in the deeper parts of the colony (see Pl. XXXVIII. fig. 20). They are not arranged so as to define the Ascidiozoid areas as in some other species, but are distributed quite irregularly. The spicules vary greatly in size (Pl. XXXVIII. fig. 21, *sp.*), but are always more or less stellate in shape. In some places the matrix is distinctly fibrillated, but as a general rule it shows no structure. Large ovate or rounded granular cells are also present (Pl. XXXVIII. fig. 21, *p.c.*). These are pigment cells of a greyish-yellow colour, and they probably aid in rendering the test opaque.

The branchial siphon is small but well formed (Pl. XXXVIII. fig. 20, *br.*). The aperture is circular, and the sphincter is well developed. The musculature in general is strong. Retractor muscles are present which run downwards into the test (Pl. XXXVIII. fig. 21, *v.ap.*)

The alimentary canal is small. It forms a narrow loop.

A number of large tailed larvæ were found in the colony. They are imbedded in the lower part of the test below the bodies of the Ascidiozooids. These larvæ have ellipsoidal