

*Leptoclinum japonicum*, n. sp. (Pl. XXXIX. figs. 1-7).

*The Colony* is massive and of rudely ellipsoidal form. It was attached by a rather small concave area on the lower surface. The upper surface is strongly convex. It is even and fairly smooth. The colour is a dark greyish-brown.

The length is 1.4 cm., the breadth is 2.2 cm., and the thickness is 7 mm.

*The Ascidiozooids* are small and very numerous. They are scattered evenly all over the surface of the colony. No common cloacal apertures are present. The bodies of the Ascidiozooids are rather short, they are divided into two regions, the thorax and the abdomen.

*The Test* is firm but not hard. It is of a greyish-brown colour and nearly opaque. The matrix is densely crowded with test cells, and contains also calcareous spicules. Bladder cells are present in some places. The spicules vary greatly in size and shape, and are only present in the upper layer of the colony.

*The Mantle* is moderately strong. The muscle bands are narrow but regular.

*The Branchial Sac* is well developed. There are four rows of short stigmata. The transverse vessels are moderately wide and have muscle fibres.

*The Tentacles* are short, and are irregular in size and arrangement.

*The Alimentary Canal* is not large. It forms a short wide loop.

*The Reproductive Organs* are conspicuous. The testis is large, and it has the long vas deferens coiled spirally around it.

*Locality*.—Station 233A, May 19, 1875; lat. 34° 38' N., long. 135° 1' E.; depth, 50 fathoms; bottom, sand.

One colony of this species was dredged off Kobé, Japan, from a depth of 50 fathoms. In external appearance it is not unlike *Leptoclinum jacksoni* from Australia, but the resemblance is merely superficial, and the colour is darker in the present species.

The colony is massive (Pl. XXXIX. figs. 1, 2). It has evidently been attached to some convex body, as the small area of attachment at the posterior end is decidedly hollow (Pl. XXXIX. fig. 2). The upper surface is smooth and rounded, and has the small Ascidiozooids distributed evenly over it. They show as small rounded spots of a lighter colour than the surrounding test (Pl. XXXIX. fig. 1).

The test is relatively large in amount. The matrix appears structureless. The test cells are very abundant and show a great variety in form (Pl. XXXIX. fig. 3, *t.c.*); fusiform, stellate and branched shapes predominate. Bladder cells, though present (Pl. XXXIX. fig. 3, *bl.*), are not very abundant.

The spicules are fairly numerous in the superficial layer of the colony, but become very scarce or disappear in the deeper parts. Figure 3 represents part of a section through the test deep down in the colony where the spicules are absent. The shape of the spicules varies very greatly (Pl. XXXIX. fig. 6). Most of them are stellate but irregular, having the rays of different sizes and shapes. Some simple forms are found