

Some of these forms are very closely related to one another. It should be remembered that all the specimens in the collection have been preserved in alcohol, and that some of the species, which are now all of a dull greyish-white tint, may have been distinguishable from one another by their diverse colours when living.

*Leptoclinum tonga*, n. sp. (Pl. XXXV. figs. 1-10).

*The Colony* is an irregularly shaped flat expansion, slightly thickened at the edges and attached by the greater part of the lower surface. It is of a pure white colour and is quite opaque. The upper surface is uneven but smooth.

The length is about 6 cm., the greatest breadth is about 3 cm., and the average thickness is 3 mm.

*The Ascidiozooids* are small and not numerous. Their anterior ends are visible as minute depressions on the surface, which are arranged in irregular branching lines. No common cloacal apertures are visible.

*The Test* is solid, firm, and tough. It is opaque, and of a white colour throughout. The matrix is homogeneous; it contains a few small fusiform and branched test cells and a very large number of calcareous spicules. The spicules are irregularly stellate, with the rays usually uneven and blunt at the apex.

*The Mantle* is moderately strong. The branchial sphincter is well developed.

*The Branchial Sac* is fairly large. There are four rows of long narrow stigmata.

*The Endostyle* is large and conspicuous. Its course is straight.

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

*The Tentacles* are large and rather numerous. They are of two sizes, but are not arranged with perfect regularity.

*Locality*.—Station 172, off Tongatabu, Friendly Islands, July 22, 1874; lat. 20° 58' S., long. 175° 9' E.; depth, 18 fathoms; bottom, coral mud.

This is a flat incrusting species of a pure white colour. One irregularly shaped colony (Pl. XXXV. fig. 1) was obtained off the island of Tongatabu in the South Pacific, from a depth of 18 fathoms. It was evidently not attached by the whole of the lower surface, as the edges are thickened and turned upwards, forming rounded projecting margins. The lines produced on the upper surface by the branchial apertures of the Ascidiozooids form an irregular network (see Pl. XXXV. fig. 1), the meshes of which project as rounded masses of test. The edges and some other parts of the colony are formed of test only, the Ascidiozooids being by no means numerous. The thickness of the colony varies from about 1 mm. to 4 or 5 mm. The lower surface by which the colony was attached is very finely roughened, and is seen in sections to be produced into shorter and longer adhering processes of the test containing each a few spicules (see Pl. XXXV. fig. 3, *ad.*, which represents part of the lower surface cut in vertical section).