

place where the spicules in the surface layer of the test over the Ascidiozoid become greatly reduced or altogether cease, while the inner is the branchial sphincter.

The distribution of the spicules in the surface layer of test is also distinctly seen in a low power view of the colony (Pl. XXXV. fig. 12). They are most abundant between the bodies of the Ascidiozooids, where the dark opaque lines form a network with fairly regular hexagonal meshes. The regions occupied by the Ascidiozooids are thus clearly marked out (Pl. XXXV. fig. 12). A higher magnification shows that the branchial aperture is irregularly six-lobed (Pl. XXXV. fig. 13, *br.*). The bases of the lobes are usually strengthened by a few spicules, which are arranged in two, three, or four groups (generally three); these are shown as small dark masses on the line of the sphincter muscle in figure 12.

The spicules have the rays more tapering and the apices sharper (Pl. XXXV. fig. 14) than is usual amongst allied forms. The mantle has both transverse and longitudinal muscle bands (Pl. XXXV. fig. 13).

The branchial sac has small but well-formed stigmata; the ciliated cells are distinct. The testis is large, and the vas deferens is spirally coiled around it. No ova nor embryos were discovered in the colony.

*Leptoclinum subflavum*, n. sp. (Pl. XXXVIII. figs. 14-18).

*The Colony* is a thin incrusting layer of irregular shape, attached by its entire extent. The upper surface is even, but rather rough. The colour is yellow.

The length is about 2.5 cm., the breadth about 2 cm., and the thickness is less than 1 mm.

*The Ascidiozooids* are moderately large, and fairly numerous. They are closely placed all over the surface, and are not arranged in definite systems. No common cloacal apertures are visible.

*The Test* is rather firm. It is of a greyish-yellow colour and is transparent. The matrix is crowded with test cells which are mostly of large size and rounded form. Calcareous spicules are also present, but they are most irregular in size and shape. They are never stellate.

*The Mantle* is moderately strong. The muscle bands are delicate but numerous. They are mostly longitudinal in direction, and are placed regularly.

*The Branchial Sac* is rather small and is thick-walled. The stigmata are usually small, but are arranged with regularity. There are four rows. The ciliated cells are distinct.

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

*The Tentacles* are short and stout. There are from twelve to sixteen of them.

*The Alimentary Canal* is moderately large. It forms a short loop.

*Locality*.—Kerguelen Island; depth, 28 fathoms.