

upper layer of the test, while it causes the colony as a whole to become firmer and more solid looking.

In this genus I place von Drasche's *Diplosoma pseudoleptoclinum* from the Adriatic, and a new species described below, which was obtained during the Challenger Expedition off the Arrou Islands. These two species differ in a number of points, including the following:—In *Diplosomoides pseudoleptoclinum* the colony is thinner, more incrusting, and decidedly firmer, the spicules are more numerous, and there is a group of spicules placed on each side of the thorax. In *Diplosomoides molle*, on the other hand, the colony is thicker, very slightly attached, and very soft and flexible, the spicules are comparatively few, and there are none alongside the thorax. The branchial sac is also relatively larger than in *Diplosomoides pseudoleptoclinum*.

*Diplosomoides molle*, n. sp. (Pl. XLII. figs. 5–16).

*The Colony* is an irregularly rounded mass, attached slightly at various points. The surface is uneven but smooth. The colour is dull white with a greyish tinge.

The length is nearly 4 cm., and the breadth is 2.5 cm. The average thickness is about 5 mm.

*The Ascidiozooids* are fairly large and very numerous. They are distributed evenly all over the surface of the colony, and are closely placed. Several common cloacal apertures are present. The bodies of the Ascidiozooids are from 1.5 mm. to 2 mm. in antero-posterior length and about 0.5 mm. in greatest breadth. They are distinctly divided into two regions, thorax and abdomen.

*The Test* is exceedingly soft and flexible; it is easily torn. It is of a greyish-white colour externally, and of a clear hyaline grey internally, and is transparent. The matrix is clear and structureless. In the superficial layer of the colony it contains great numbers of small spherical or stellate calcareous spicules, while in the deeper parts of the test no spicules are present. Test cells are very abundant, they are mostly of small size and rounded form. No bladder cells are present. Vascular ectodermal appendages are frequently met with in the test.

*The Mantle* is thin and transparent. The chief muscle bands run longitudinally.

*The Branchial Sac* is large and well developed. There are four rows of fairly large stigmata, arranged with regularity. The transverse vessels are moderately wide, and are provided with muscle fibres, which are also continued into the longitudinal interstigmatic vessels.

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

*The Tentacles* are well developed, and are arranged with regularity. There are sixteen, and they are of two sizes, placed alternately.

*The Dorsal Tubercle* has a narrow slit-like aperture running antero-posteriorly.