

peribranchial cavity communicates directly with the common cloacal cavity through the atrial aperture, it is easy to understand how the Copepod might pass its ova into the peribranchial cavities of adjoining Ascidiozooids and use them as incubatory pouches. In one or two cases the larval Ascidians and the larval Crustaceans were found developing side by side in the same peribranchial cavity.

*Atopogaster aurantiaca*, n. sp. (Pl. XXIII. figs. 7-13).

*The Colony* is irregularly wedge-shaped, with the larger end uppermost. The point of attachment, which is placed at the posterior end, is comparatively small, and the colony increases rapidly in size towards the top, which is very large and irregularly convex. The posterior two-thirds of the colony forms a short and very stout peduncle. The colour is orange, having in some places a greyish tint and in other places becoming reddish-brown. The surface is uneven but smooth.

The length is about 7 cm., the greatest breadth is 6.5 cm., and the greatest thickness 4.5 cm.

*The Ascidiozooids* are very long (up to about 3 cm. in antero-posterior extent, and about 2.5 mm. at the widest point). The body is divided into three regions, of which the abdomen or intestinal part is very much the largest, being more than twice as long as the other two regions together. The Ascidiozooids are placed more or less vertically in the colony, with their anterior ends on the large upper surface; there is no arrangement in systems, and no common cloacal apertures are present.

*The Test* is firm and cartilaginous all over, but is particularly hard in the lower part of the colony. It is semi-transparent and is of a yellowish or orange-grey colour throughout. It is darker towards the posterior end and lighter on the upper surface. The matrix of the test contains many small cells of various shapes, in some places closely crowded together. There are very few vessels and bladder cells in the test.

*The Mantle* is moderately thick, and is nearly equally muscular all over the anterior half of the body. The muscle bands are fine but very numerous, and they nearly all run longitudinally. The sphincters are well developed, and both apertures are deeply six-lobed.

*The Branchial Sac* is of moderate size and has many stigmata placed in about twenty regular rows. The transverse vessels are all of the same size, and bear short horizontal membranes which project inwards. The stigmata are all of much the same size, and are arranged with regularity. They are of moderate length, and the ciliated cells are large and pointed at their free ends.

*The Endostyle* is large and conspicuous, its course is very undulating.

*The Dorsal Lamina* is formed of a large number of long narrow pointed languets.

*The Tentacles* are large and fairly numerous; they are not all of one length.