

atrial apertures of the various Ascidiozooids are placed in connection with the common cloacal apertures. There is, however, continuous test substance around the Ascidiozooids, and not merely a lower layer by which the colony is attached, and an upper layer from which the Ascidiozooids are suspended, as has been described in the case of some of the Diplosomidæ. It is really an investing mass, just like that of any other Compound Ascidian, except that it is much softer, and is more encroached upon by the common cloacal cavities and their prolongations.

The Ascidiozooids are very distinctly divided into thorax and abdomen, and these two regions are very much of the same size. The thorax is usually rather the longer, and the abdomen the broader of the two (see Pl. XLII. figs. 6, 7, 8, 9). The thorax and abdomen are connected by a very short and narrow pedicle, consisting mainly of the œsophagus and the rectum (Pl. XLII. fig. 9). The vascular ectodermal appendages given off by the Ascidiozooids are generally two in number, one longer and one shorter (Pl. XLII. figs. 8, 9). They run posteriorly through the test, and terminate in short wide swellings or bulbs (Pl. XLII. fig. 10), on which the ectoderm cells become columnar in form (Pl. XLII. fig. 11, shows a terminal bulb in optical section).

The branchial sac is longer than it is wide (Pl. XLII. fig. 8, *br.s.*). It has in most Ascidiozooids four rows of stigmata, and there are on an average ten stigmata in each row. The musculature of the branchial sac is well developed (Pl. XLII. fig. 14, *m.f.*). A strong band runs along each transverse vessel, and gives off fibres which pass upwards and downwards into the interstigmatic vessels. As the stigmata in adjacent rows usually alternate with each other, the same muscle fibres do not pass directly upwards from an interstigmatic vessel to one above, but always interlace with the muscle fibres in the transverse band, before passing to the next row (see Pl. XLII. fig. 14). The ciliated cells on the sides of the stigmata are distinct. In the branchial sacs of young Ascidiozooids the stigmata are much smaller, and are relatively shorter (Pl. XLII. fig. 15), while the transverse vessels are wider. Two Copepoda were found in the branchial sac of one of the Ascidiozooids examined.

The endostyle is of moderate size; its course is straight (Pl. XLII. fig. 8, *en.*). The dorsal languets are long and narrow, and are nearly tentacular in form. Their bases equal in breadth the space between the two dorsal muscle bands in the mantle (Pl. XLII. fig. 16, *d.l.*). In the young Ascidiozoid examined (see Pl. XLII. fig. 15, *l.*) the languets are relatively much shorter and stouter. They evidently become elongated as they grow older.

The tentacles (Pl. XLII. fig. 13, *tn.*, *tn'.*) are large and regular. The longer ones are as a rule about twice the size of the intermediate shorter tentacles. In some cases the dorsal, the ventral, and the two median lateral tentacles are rather larger than the four remaining long ones, thus producing three orders—four primary, four secondary, and eight tertiary—alternately placed.