

can be distinctly seen leading posteriorly from the dorsal tubercle to the opaque region at the anterior end of the dorsal lamina occupied by the ganglion and neural gland. The dorsal tubercle is unusually far from the peripharyngeal band (Pl. III. fig. 7). There is no peritubercular area, which is just what would be expected from the anterior position of the tubercle.

When cut in vertical section (see Pl. III. fig. 8) the opening of the tubercle is seen to lead into a wide ovate cavity lined by columnar epithelium provided with very long cilia bent downwards or from the opening. This cavity is continued in the form of a funnel into a narrow duct which leads to the neural gland placed upon the anterior surface of the nerve ganglion. The figure (Pl. III. fig. 8) shows a section from the prebranchial zone (*z.*) just behind the base of the tentacles to the dorsal lamina (*d.l.*). The epithelium of the prebranchial zone and of the dorsal lamina is cubical or low columnar and ciliated. There is a deep ciliated groove at the anterior end of the dorsal lamina and immediately behind the peripharyngeal band (*p.p.*). On the peripharyngeal band the epithelium becomes more columnar and the cilia rather longer, and it remains in the same condition on the edges of the opening of the dorsal tubercle. On the wall of the ovate cavity (*inf.*) the cells are still more columnar, and the cilia are extraordinarily long; they meet in the centre of the cavity, and then bend backwards so as to point towards the narrow duct behind. The walls of the duct are formed of cubical epithelium provided with short cilia. The gland is formed by short branched cæca which open into a space continuous with the lumen of the duct. In the figure they are seen cut at various angles; their walls are formed by cubical non-ciliated cells with distinct nuclei.

The nerve ganglion (*n.g.*) lies immediately posterior to the gland, and is very opaque. Nerve cells are seen over the outer surface. The connective tissue of the mantle in which the ganglion and neural gland lie is a clear homogeneous matrix with variously shaped connective tissue cells scattered through it. Rounded, fusiform and stellate forms are most abundant. Here and there in small sinuses are found blood-corpuscles, and a few muscle fibres (*m.f.*) extend upwards from the muscular part of the mantle further back.

The alimentary canal has much the same appearance and takes much the same course as in *Botrylloides perspicuum*. The oesophagus is long, and is curved with the convexity dorsal. The stomach is wide at the dorsal end and narrow at the ventral, where it passes gradually into the intestine. There are ten folds projecting into the interior of the stomach and visible as channels on the exterior, five on each side. The intestine curves anteriorly and then dorsally, and after running along the anterior edge of the stomach to the oesophagus it turns anteriorly again to become the short rectum. In some specimens the first portion of the intestine is much swollen with food.

There is an irregularly stellate (Pl. III. fig. 6) or lobed genital gland on each side of the posterior part of the branchial sac. In the fully developed Ascidiozooids this gland