

(Pl. XI. fig. 10), but they may, on the other hand, be tapering tentacle-like processes (e.g., *Atopogaster aurantiaca*, Pl. XXIII. figs. 11, 12) with no antero-posterior flattening. They are always richly ciliated along the edges.

The Tentacles.

The tentacles are simple in all Compound Ascidiæ, and are usually few in number and placed at regular intervals round the base of the branchial siphon. Eight and sixteen are usual numbers, but occasionally only four or even two (*Polycyclus cyaneus*, v. Drasche) are present. In other cases they are more numerous, and in *Tylobranchion speciosum* the number is large and the arrangement indefinite, as in a Simple Ascidian. Very often the tentacles are of two sizes, which are then placed alternately. Sometimes the tentacles are richly pigmented.

The Nervous System and other Neighbouring Organs.

The nerve ganglion is usually elliptical in form, and occupies the same position as in the Ascidiæ Simplicis: it gives off nerves anteriorly and posteriorly. The mantle in the neighbourhood of the nerve ganglion is frequently pigmented, and in some Compound Ascidiæ small pigment-spots, which are probably lowly developed sense organs, are found along the edge of the branchial aperture just as in the case of most Simple Ascidiæ. A second small ganglionic enlargement is said to have been found on a nerve going to the atrial aperture in some species where the edge of the common cloacal aperture is well developed and sensitive.

In close relation to the nerve ganglion, and usually on its posterior side, is placed the neural gland, which is comparatively slightly developed in the Compound Ascidiæ, and gives off the neural duct running anteriorly and ventrally to open into the anterior end of the branchial sac by the aperture of the dorsal tubercle (see fig. 3, p. 16, *gl.n.*). This opening is usually a simple circular or ovate slit (Pl. II. figs. 8, 9) placed in the dorsal line of the prebranchial zone behind the tentacles, and having slightly raised lips which form the inconspicuous "tubercle." The region of the neural duct nearest to the opening is generally enlarged to form an infundibulum with ciliated walls (see Pl. III. fig. 8, *inf.*).

The peripharyngeal bands surrounding the branchial sac at the level of the anterior ends of the endostyle and the dorsal lamina, and defining the posterior border of the prebranchial zone, in most cases bend posteriorly in the dorsal median line to bound a more or less triangular diverticulum from the prebranchial zone. This diverticulum corresponds to the peritubercular area in the Ascidiæ Simplicis, but in the Ascidiæ Compositæ it rarely encloses the dorsal tubercle, which is placed considerably further forward (Pl. III. fig. 16).