

about 3 mm. in diameter; they are arranged with considerable regularity in rows, the Ascidiozooids in adjacent rows alternating with one another (Pl. II. fig. 11). The inner surface of the test next to the common cloaca is perfectly smooth and glistening. The atrial apertures of the Ascidiozooids are conspicuous rounded openings up to 1 mm. in diameter (Pl. II. fig. 12). The thickness of the colony, from the outer to the inner surface of the test, is from 1 cm. to 1.2 cm., and that is, of course, also the antero-posterior length of the fully developed Ascidiozooids.

The fragment preserved in picric acid has both the branchial and atrial apertures larger and more conspicuous than in the spirit specimens, probably because the picric acid has not contracted the tissues so much. The atrial apertures are especially large, and are rounded openings with no lobes (Pl. II. fig. 12). They vary from about 1.5 mm. to 3 mm. in diameter, and are arranged with considerable regularity in alternating rows. This picric acid specimen is not, however, in good condition for histological examination. The small fragments preserved in alcohol are much better in this respect.

The branchial sac is very large. There are at least thirty internal longitudinal bars on each side of the endostyle, and over fifty transverse vessels on each side. The ciliated cells of the transverse vessels are large and distinct, and there are about twelve cilia on each cell (Pl. II. fig. 14). The meshes formed by the intersection of the transverse vessels and internal longitudinal bars are elongated transversely, and are about two to three times as long as they are wide.

There are at least ten long narrow languets along the dorsal edge of the branchial sac. In other respects this species agrees in structure with *Pyrosoma giganteum*.

The dorsal tubercle has a circular aperture which leads, by means of a bent tube running along the under surface of the ganglion, to a triangular subneural gland (Pl. II. fig. 13).

The testis is composed of a large number of cæca, certainly over twenty (Pl. II. fig. 15); while in the other species there are only about a dozen cæca.

Undetermined Specimens of Pyrosoma.

The following specimens of *Pyrosoma*, either on account of their bad state of preservation, or because of their being very young colonies, cannot be determined as to their species with certainty.

(1.) A very young *Pyrosoma* colony was obtained by means of the tow-net on April 12, 1876, Station 351; North Atlantic; lat. 9° 9' 0" N., long. 16° 41' 0" W.; surf. temp. 81°·8. It is a small octagonal plate 2 mm. in diameter and slightly over 1 mm. in thickness. At the angles the test is produced into short, pointed spines, and there are four pale yellow Ascidiozooids embedded in the clear test (Pl. II. figs. 1-4). When examined under a 1-inch objective the colony presents the appearance shown in