

*The Mantle* is fairly strong. The muscle bands are delicate but regular.

*The Branchial Sac* is large and well developed. The stigmata are very long and narrow. The transverse vessels are comparatively slight.

*The Dorsal Lamina* is represented by a series of long triangular languets.

*The Tentacles* are long and thin. They are numerous and of two sizes, but are not regularly arranged.

*The Dorsal Tubercle* has rather a large aperture.

*The Alimentary Canal* is fairly large, but it does not extend far behind the branchial sac. The stomach is small and smooth-walled.

*The Reproductive Organs* are not conspicuous. The testis is composed of a number of pyriform vesicles which join a spirally coiled vas deferens. The tailed larvæ are very large.

*Locality*.—Station 320, February 14, 1876; lat. 37° 17' S., long. 53° 52' W.; depth, 600 fathoms; bottom temperature, 37°·2 F.; bottom, green sand.

One specimen of this interesting form was obtained from the considerable depth of 600 fathoms, off the east coast of South America. Seen from the side, the colony is distinctly reniform (Pl. XXXVII. fig. 1), having a convex upper and a concave lower surface and two rounded ends. An end view, however (Pl. XXXVII. fig. 2), shows that the mass is really hollow, being traversed throughout the greater part of its length by a large axial cavity which opens to the exterior by a terminal circular orifice about 7 mm. in diameter (Pl. XXXVII. fig. 2, and Pl. XXXVIII. fig. 1). Apparently the colony was not attached, but as there is a *Polyzoon* adhering to its outer surface, it was probably not free-swimming but lay on the sea-floor.

The extraordinary shape of the colony recalls the arrangement seen in *Pyrosoma*, where the *Ascidiozooids* and their investing mass form the walls of a hollow cylinder closed at one end. In *Pyrosoma*, however, while the branchial apertures of the *Ascidiozooids* open on the outer surface of the colony, the atrial apertures open on the inner surface into the axial cavity of the colony (see fig. 10, C), which is thus converted virtually into a common cloacal cavity, and the terminal aperture into the sole excretory orifice for the whole colony. In the present species this is not the case. The whole surface, both the outside of the specimen and also the lining of the axial cavity, is morphologically the outer surface of the colony, and the branchial apertures of the *Ascidiozooids* are found distributed all over it (see fig. 10, B). In this respect, therefore, *Cælocormus huxleyi* presents an arrangement intermediate between that found in the typical Compound Ascidian (see fig. 10, A), where the colony is attached and more or less rounded, and the apertures of the *Ascidiozooids* open upon a flat or convex upper surface, and that peculiar to *Pyrosoma* (see fig. 10, C), where the colony is free-swimming, cylindrical, and has an axial cavity into which the atrial apertures of the