

*Test* gelatinous and transparent, containing no spicules, but many small cells.

*Branchial Sac* well developed, not folded. Consisting of numerous transverse vessels separated by narrow slits (the stigmata), and numerous internal longitudinal bars.

*Tentacles* present; simple.

*Dorsal Lamina* in the form of languets.

*Alimentary Canal* placed posteriorly to the branchial sac.

*Reproductive Organs* placed in the wall of the peribranchial cavity, posterior to the branchial sac. The embryo becomes a rudimentary larva (the cyathozoid), which gives rise to the first Ascidiozooids of the colony.

*Gemmation* takes place from a ventral and posterior stolon.

This family, the only one yet known in the Ascidiæ Salpiformes, corresponds exactly to Savigny's family LUCIÆ,<sup>1</sup>—a group which, although called a family by Savigny, that author really regarded as being of much higher rank than we now understand by a family, since he considered it equivalent in his system of classification to the whole of the Simple and Compound Ascidiæ together. His family I. is "TETHYÆ," and he divides that into two groups—(1) "Téthyes Simples," the Simple Ascidiæ; and (2) "Téthyes Composées," the Compound Ascidiæ; while his family II. is "LUCIÆ," the Pyrosomatidæ, which thus ranks with what we now call an order. The term Pyrosomatidæ was first used, I believe, as a family designation by Prof. T. R. Jones<sup>2</sup> in 1848. Its characters are naturally those of the suborder Ascidiæ Salpiformes, and these will be discussed further under the heading of the single genus.

### *Pyrosoma*, Péron.

*Pyrosoma*, Péron, Ann. d. Mus., tom. iv. p. 437, 1804.

*Colony* free-swimming, and having the form of a cylinder with a large central cavity closed at one end and open at the other.

*Systems*—only one present, the terminal aperture being the common cloacal opening, and the central cavity the common cloaca.

*Ascidiozooids* elongated antero-posteriorly, and placed in a single layer with their anterior ends external and their posterior ends internal. Branchial apertures anterior, opening on the surface of the colony. Atrial apertures posterior, opening into the centrally placed common cloaca. Body not divided externally into thorax and abdomen. Apertures not lobed.

*Test* gelatinous and transparent, containing numerous stellate branched cells.

*Branchial Sac* well developed, not folded, and not extending to the posterior end of the body. Vessels of two kinds: transverse vessels, which are

<sup>1</sup> Mémoires, p. 139.

<sup>2</sup> In the article Tunicata in Todd's Cyclopædia of Anatomy and Physiology.