

Savigny's¹ account of the anatomy, with the exception of the reproductive organs and a few points of secondary importance, is very accurate and detailed.

Lamarck,² in 1816, formed the class Tunicata and ranged the genus *Pyrosoma*, now removed from the Mollusca, in the same order with the Compound Ascidiæ, and next after *Botryllus*. He briefly characterises the genus and the three known species, and appends a few remarks, but adds nothing to the anatomical discoveries of Lesueur and Savigny.

Milne-Edwards,³ in 1840, investigated the circulation in *Pyrosoma*. He showed that the nature of the heart and the general course of the blood was much the same as in the ordinary Ascidiæ.

The next memoir of importance is Huxley's excellent Observations upon the Anatomy and Physiology of *Salpa* and *Pyrosoma*,⁴ published in 1851. His investigations were made upon a specimen of *Pyrosoma atlanticum* captured in the middle of the South Pacific Ocean during the voyage of the "Rattlesnake." Huxley gives a very complete account of the structure of this species, correcting some of the errors of his predecessors, especially in regard to the reproductive organs. He showed for the first time the true nature and position of the testis and ovary. In a very interesting section of his paper on the Homology of Organs in the Tunicata, he shows the relationship of *Pyrosoma* to *Salpa* on the one hand, and to the Botryllidæ and the Compound Ascidiæ on the other. Savigny⁵ had long before noticed the close resemblance between *Pyrosoma* and *Botryllus* in some respects, and as I have already pointed out,⁶ and shall discuss again more in detail farther on, I believe that the Ascidiæ Salpiformes are much more closely related to the Ascidiæ Compositæ than to any of the Thaliacea.

In a further paper On the Anatomy and Development of *Pyrosoma*, read in December 1859, and published in 1862,⁷ Huxley gave an elaborate account of the structure, of the budding, and of the embryonic development of *Pyrosoma giganteum*, from a specimen obtained in the North Atlantic, and preserved in spirit, and containing many embryos in various stages of development. He was able to show that cross-fertilisation must take place, since when the ova are mature in an Ascidiozoid, the testis is still in a rudimentary condition. He traced the embryonic development, and the formation of the remarkable Cyathozoid and of the series of four Ascidiozooids⁸ attached to it, and their gradual conversion into the young colony. This was the first accurate and consecutive account of the life-history of *Pyrosoma*; and it is an

¹ *Système des Ascidiées*, p. 205.

² *Histoire Naturelle des Animaux sans Vertèbres*, tom. iii. p. 109. Paris 1816.

³ *Comptes rendus*, tom. x. p. 284; also *Ann. Sci. Nat. (Zool.)*, sér. 2, tom. xii. p. 375.

⁴ *Phil. Trans.* 1851, part ii. p. 567.

⁵ *Mémoires*.

⁶ In Part II. of this Report, published in vol. xiv., 1886.

⁷ *Trans. Linn. Soc. Lond.*, vol. xxiii. p. 193; also *Ann. and Mag. Nat. Hist.*, 1860, ser. 3, vol. v. pp. 29-35.

⁸ This useful term was first introduced by Huxley in his memoir in the *Trans. Linn. Soc. Lond.* (*loc. cit. supra*). In the preliminary paper in the *Ann. and Mag. Nat. Hist.* (1860), he uses the term "Ascidiite."