

The great French circumnavigating expeditions of the third decade of the century, although they made known the external appearances of some new forms amongst pelagic Tunicates, contributed little to the anatomy, or any other real knowledge of the group, and added not a little to the confusion in which the synonymy was even then beginning to be involved.

In 1831, *Oikopleura*, the best known genus of the Larvacea (Appendiculariidae), was described by H. von Mertens. This observer had found this most important pelagic form near Bering Strait in 1828, where a form, possibly the same, had been seen and imperfectly characterised (under the name *Appendicularia*) by Chamisso some years before. Mertens was fortunate enough to see it in the act of forming and getting rid of its periodically produced temporary test, which has since borne the German name "Haus," applied to it by Mertens.

*Anohinia*, another important pelagic Tunicate, and its close ally *Doliolum*, were made known in 1833 and 1835, the former being established by Eschscholtz, and the latter by Quoy and Gaimard as one of the results of the voyage of the "Astrolabe."

Costa's observations on the Mediterranean *Salpæ*, those of Milne-Edwards on *Pyrosoma* and on *Salpa*, and of Eschricht on two little-known forms of *Salpa* (*Salpa cordiformis-zonaria*), made in 1839-41, added considerably to the knowledge of the anatomy and physiology of these genera. M. Sars and Krohn, during the decade that followed, contributed important observations on the Salpidae—the latter author treating more especially of the reproduction, the development, and the life-history. Krohn likewise did good service at this period by attempting to clear up the synonymy of *Salpa*, and to range the two kinds of generations (the solitary and the chain forms) under their proper species.

By far the most important contributions, however, of the middle of the century were Huxley's well-known memoirs on the pelagic Tunicata *Salpa*, *Doliolum*, *Pyrosoma*, and *Appendicularia*. Huxley's observations upon these forms were made during the voyage of H.M.S. "Rattlesnake," and, so far as *Salpa* is concerned, covered partly the same ground as the independent observations of Krohn, published previously. The memoir on *Salpa* treats mainly of the structure of two different forms of the genus (evidently the "solitary" and "chain" generations of *Salpa democratica-mucronata*), of their methods of reproduction, and of their relation to one another. He discovered the testis in the chain *Salpa*, thoroughly established the truth of Chamisso's description of the "alternation of generations," and pointed out the essential difference between the two methods of reproduction occurring in the life-history. In his observations upon *Pyrosoma*, which were made upon the living animal, Huxley corrected and added to the descriptions of his predecessors, especially in regard to the reproductive organs. He also in an important section of his memoir discussed the relationships between the various groups of Tunicata, and pointed out the similarity