

in structure and in life-history between *Pyrosoma* and *Salpa* on the one hand, and between *Pyrosoma* and the Compound Ascidians on the other.

In the Remarks upon *Appendicularia* and *Doliolum*, Huxley proved conclusively that the first of these forms belonged to the Tunicata. It had previously been described by Chamisso as a Coelenterate, and by v. Mertens as a Pteropod. He also was the first to give a good anatomical description of *Appendicularia*, and to point out the interest attaching to the persistent tail. For *Doliolum* he performed a similar service, giving for the first time a thorough description of the structure of this little-known form, and indicating its true position amongst the other Tunicata.

Interest was now thoroughly awakened in regard to these important forms and their complicated life-histories; and during the ten years that followed a number of the leading European naturalists produced papers on the pelagic Tunicata. Gegenbaur wrote on *Doliolum* and on *Appendicularia*, Krohn on *Doliolum*, H. Müller on *Salpa*, C. Vogt on *Salpa*, Leuckart on *Salpa* and *Doliolum*, Allman on *Appendicularia*, Keferstein and Ehlers on *Doliolum*, and Huxley on all four genera.

The great embryological impulse which was given by Kowalevsky's celebrated memoir on the development of a Simple Ascidian in 1866 did not affect the literature of the pelagic Tunicata so immediately as it did that of the Ascidiacea, and for some years after all the more important papers were on the Simple or the Compound Ascidians. In 1872 appeared Fol's important treatise on the Appendicularians. This is by far the most comprehensive work on the Larvacea that has yet been written, and was the first to give an adequate account of the group as a whole. In 1875, Kowalevsky in one of his admirable embryological memoirs gave a detailed account of the development of *Pyrosoma*, confirming and supplementing the previous description by Huxley, who had first discovered the remarkable "cyathozoid," and its relations to the first Ascidiozooids of the colony. Attention was now directed to the Salpidæ, and from that time up to the present there has been a more or less continuous series of, in many respects, conflicting accounts of the development, gemmation, and life-history of *Salpa*. The more important of these papers have been written by Brooks (1875 and 1886), Todaro (1875, 1880, 1882, and 1887), Barrois (1881-82), Seeliger (1885), and especially Salensky (1877, 1878, and 1882-83). A very useful paper by Traustedt, published in 1885, deals with all the known species of the Salpidæ, discussing their characters, distinguishing them, and reducing their synonymy to order.

The Cyclomyaria have also been largely investigated during the last five or six years. The complicated life-history of *Doliolum* has been gradually worked out by the successive papers of Grobben and Uljanin, while the allied form *Anchinia* has been investigated by Korotneff, Kowalevsky, Barrois, and Wagner, thus bringing our knowledge of the pelagic Tunicata up to its present condition.