

Tentacles simple, filiform.

Intestine always extending beyond the branchial sac posteriorly.

Genitalia placed in the intestinal loop. Reproduction by gemmation is also usual, and results in the formation of colonies.

For a detailed account of my reasons for considering the Clavelinidæ as Simple Ascidiæ, I must refer to the second part of the Preliminary Report.¹ It will be sufficient here to mention that in organisation the Clavelinidæ are most closely allied to the Ascidiidæ; that if we consider only the structure of a single individual, an *Ecteinascidia* might be placed in the same genus with a *Ciona*, and that the property of reproducing by gemmation and forming colonies is really the only essential character which separates the Clavelinidæ from the Ascidiidæ; and finally, that this property of budding cannot be considered as forming a strict line of demarcation, since all the apparatus necessary for the process is present in a more or less developed condition in other Simple Ascidiæ, and has been observed in species of *Ascidia*² and *Ciona*³ to produce stolons similar to those of a *Clavelina*. On account of their property of reproducing by gemmation the Clavelinidæ must be considered as having a closer affinity to the Compound Ascidiæ than have any others of the Simple Ascidiæ. They form a passage between such forms as *Ciona* in the Ascidiidæ and *Diazona* in the Compound Ascidiæ.

The Challenger genus *Ecteinascidia* is an interesting connecting link between the other Clavelinidæ and the Ascidiidæ. It forms colonies by gemmation, and therefore belongs to the Clavelinidæ, but in the rest of its characters it more closely approaches *Ciona* than *Clavelina*.

The curious form which Philippi described in 1843, under the name of *Rhopalæa*, must for the present remain unplaced as to family. It was described as a Simple Ascidian,⁴ but the account given of it and the figures published certainly suggest that it belongs to the Clavelinidæ, and will probably find a place near *Ecteinascidia*. In opposition to this view, the internal longitudinal bars of *Rhopalæa* are figured as being distinctly papillated, a condition of things of which I have never seen a trace in any specimen of *Ecteinascidia*. For a determination of the affinities of this interesting species we must be content to wait till we have some information as to the important point of whether it possesses the property of reproducing by gemmation.

Setting *Rhopalæa* aside, there remain three genera which undoubtedly belong to this family, viz. :—*Clavelina*, *Ecteinascidia*, and *Perophora*, each of which is represented by several species. The three genera are very distinct, and are easily separated from one

¹ Proc. Roy. Soc. Edin., 1879–80, p. 714.

² I have found specimens of *Ascidia aspersa*, O. F. Müller, with long stolon-like processes extending from the test at the posterior end and left side of the body.

³ e.g., frequently in large individuals of *Ciona intestinalis*, Linnæus.

⁴ This was subsequent to the publication of Milne-Edwards' Memoir creating the group of Social Ascidiæ.