

*Pyrosoma*, then, may be regarded as a highly modified form derived from the ancestral Didemnidæ (H. in fig. 13), and much more closely allied to the ordinary Compound Ascidiæ, such as the Distomidæ and the Polyclinidæ, than to the other pelagic Tunicates, such as a colony of Salpæ.

The ancestral Didemnidæ which were derived from the point H. divided into two series, those leading to the Didemnidæ proper, and those which have given rise to the Diplosomidæ. From the former, near the point of division, arose the side branch leading to the genus *Eucælium*, where the number of rows of stigmata in the branchial sac is greater than three or four, thus resembling most of the ancestral Distomidæ, from which the Didemnidæ were derived. In the family Didemnidæ the property of producing calcareous spicules in the test has reached its greatest development. Similar spicules (apparently

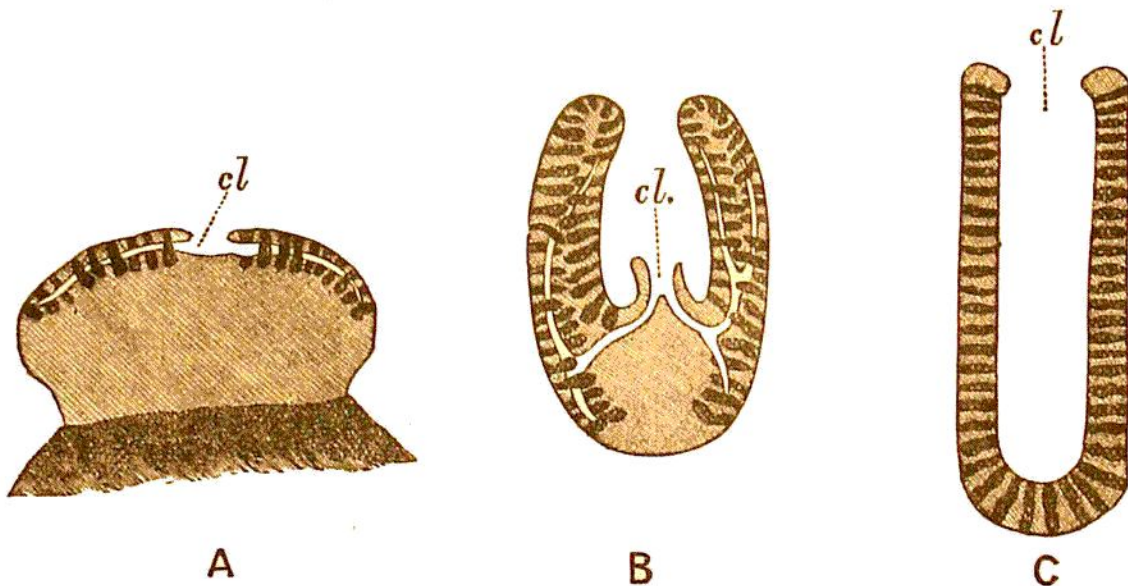


FIG. 14.—Diagrams showing the relations between—A, a typical Compound Ascidian; B, *Calocormus*; C, *Pyrosoma*. In all cases the colonies are represented in longitudinal section, and *cl.* indicates the opening of the common cloacal cavity.

in all cases formed by modified test cells, see p. 271) are found also in the Diplosomidæ and in the Cœlocormidæ, and a somewhat different form of spicule occurs in the genus *Cystodytes*, consequently it is possible that the tendency towards the formation of calcareous deposits by the test cells was developed as far back as the ancestors of the genera *Distoma* and *Cystodytes* (see fig. 13), and if so, then the tendency has been repressed in the species of *Distoma*.

In the ancestral Didemnidæ the male reproductive organs became concentrated to form a single large ovate testis around which the long vas deferens was coiled spirally (see p. 254). The genus *Didemnum* is rather less modified than *Leptoclinum*, which forms the termination of this branch. In *Leptoclinum* the colony has become greatly flattened from above downwards so as to form in most cases a mere incrusting film in which the test is usually densely crowded with calcareous spicules. One result of this flattening of the colony in the more modified Leptoclinids is that remarkable bending of the body