

outer surface of the colony. This produces the ancestral form from which the remarkable *Cælocormus huxleyi* (see Fig. 23, B.) was probably derived.

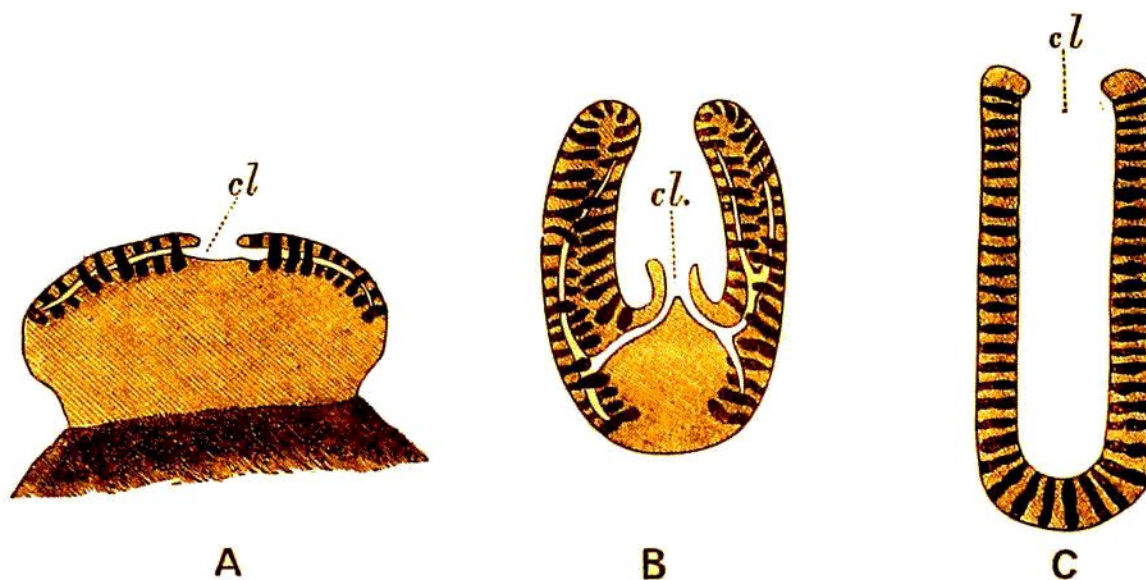


FIG. 23.—Diagrams showing the relations between A. a typical Compound Ascidian; B. *Cælocormus*; C. *Pyrosoma*. In all cases the colonies are represented in longitudinal section, and *cl.* indicates the opening of the common cloacal cavity.

Cælocormus is a most valuable transition form, between an ordinary Compound Ascidian (e.g., one of the Distomidæ, Fig. 23, A.) and the remarkably modified *Pyrosoma* (Fig. 23, C.). It is not attached, but is probably not free-swimming. It has a large axial cavity, like that of *Pyrosoma*, opening to the exterior at one end of the colony (see Fig. 23, B.); but this cavity does not receive the atrial apertures directly as it does in the case of *Pyrosoma*, but by means of atrial passages like those found in many Compound Ascidians (compare A. and B. Fig. 23). There is a single large common cloacal aperture placed on a projection at the lower end of the axial cavity, and with this all the atrial apertures of the Ascidiozooids communicate by means of canals penetrating the common test.

From an ancestral form allied to *Cælocormus* (Fig. 23, B.), *Pyrosoma* was, I consider, derived (see table, p. 150), by slight changes in shape, resulting in the formation of an elongated hollow cylinder, and by a modification in the relations of the Ascidiozooids, so that they came to open independently into the large axial cavity, which is thus virtually converted into a huge common cloacal cavity. *Pyrosoma* is free-swimming, and the Ascidiozooids have acquired light-producing organs placed laterally on their anterior ends. Uljanin¹ considers that *Pyrosoma* is related to the Compound Ascidians; but he places *Distaplia*—which I regard as a typical member of the family Distomidæ, allied to *Coella*—as the connecting form. I have already shown² that there is no essential difference in process of gemmation and in life history

¹ Fauna und Flora d. Golfes v. Neapel, Monogr. x., Doliolum.

² See before, under *Pyrosoma*, p. 24.