

between *Pyrosoma* and the Compound Ascidians; and *Cælocormus* certainly in the condition of the colony forms a link between *Pyrosoma* and such a genus as *Distaplia*. *Pyrosoma*, then, must be regarded as a highly modified form derived from the ancestral Didemnidæ, and much more closely allied to the ordinary Compound Ascidians, such as the Distomidæ and the Polyclinidæ, than to the other pelagic Tunicates, such as a colony of *Salpæ*.

In order to trace the evolution of the remainder of the Simple and Compound Ascidians,¹ it is necessary to return to the ancestral Ascidians allied to *Ecteinascidia* from which the line F. was derived. In these forms gemmation took place from the posterior end of the body, resulting in the formation of small colonies, possibly temporary only, in which, however, the Ascidiozooids were quite distinct, and were not embedded in a common test. The alimentary canal extended behind the branchial sac posteriorly, and the heart and the reproductive organs were placed alongside the intestinal loop. The branchial sac was provided with internal longitudinal bars, and the tentacles were simple.

From this point *Ecteinascidia* (see table, p. 150) was derived, and shortly afterwards the power of reproducing by gemmation so as to form colonies must have been gradually lost, since it is not found in the next group of Simple Ascidians, the Ascidiidæ.

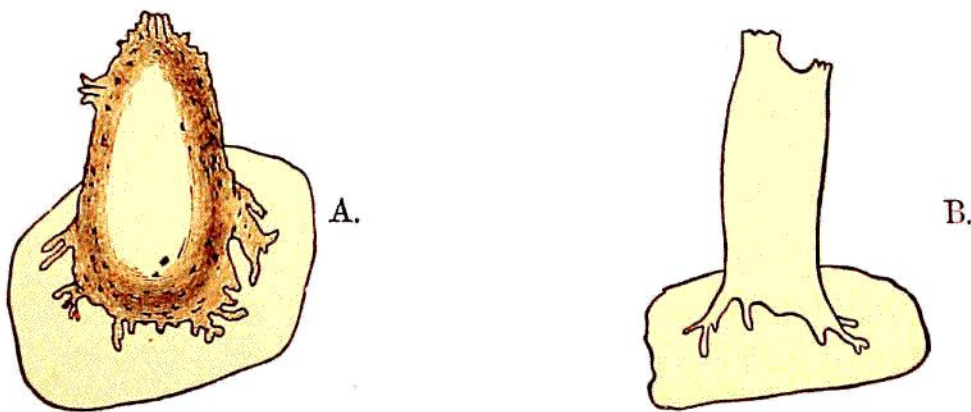


FIG. 24.—A. specimen of *Ascidia aspersa*; B. specimen of *Ciona intestinalis*, showing rudimentary stolons.

Probably the common species *Ciona intestinalis* is the nearest form known to the primitive Ascidiidæ. It resembles *Ecteinascidia* in most respects, but it is not pedunculated, and has not the power of reproducing by gemmation. In many specimens of *Ciona*, however, processes of the test containing blood-vessels are found attached to the posterior end of the body (Fig. 24, B). These closely resemble the stolons of the Clavelinidæ both in appearance and in structure, and there can be no doubt

¹ For further particulars in regard to the structure and relations of the Compound Ascidians discussed above, see Part II. of this Report.