and the various species of *Colella* (see Fig. 22). These are all typical Distomidæ, in which the alimentary and reproductive viscera form a mass, the abdomen, placed behind the thorax or branchial region of the body (Fig. 22, *B.*) As no post-abdomen is present, the antero-posterior elongation has evidently not gone so far as in the case of the Polyclinidæ, in fact very little change has taken place in the arrangement of the viscera since the two groups separated at G. In many of the Distomidæ (*e.g.* in the genera *Distaplia*[1] and *Colella*) the basal portion of the colony, consisting of test only, becomes greatly elongated to form a large peduncle, upon the summit of which the upper part of the colony containing the Ascidiozooids is borne (see Fig. 22, *A.*).

Farther on the main axis of the Distomidæ, after giving off at the point I. (table, p. 120, or p. 150), a branch leading to the Didemnidæ, the Diplosomidæ, *Cœlocormus*, and *Pyrosoma*, terminates in the genus *Distoma*, with its closely related form *Cystodytes*, as a short side branch. *Cystodytes*[2] is distinguished by a modification of the test, in which large disk-shaped calcareous spicules are produced in such a manner as to form investing capsules around the bodies of the Ascidiozooids.

The line leading onwards from I. (see table, p. 150) was occupied by a series of ancestral forms, in which, while the general characters of the Distomidæ were preserved, some important changes were effected in the test and in the reproductive organs. The test cells gradually acquired the property of producing spherical or stellate calcareous spicules; while the vas deferens assumed the spirally coiled form which is so characteristic of the Didemnidæ. This ancestral line gave rise to two branches, one (K. in table) leading with comparatively little change to the Didemnidæ and the Diplosomidæ as they are now known, and the other (L. in table) producing the curiously modified *Cœlocormus*, and eventually *Pyrosoma*.

The ancestral Didemnidæ forming the line K. must have divided into two series, those leading to the Didemnidæ proper and those leading to the Diplosomidæ. On the former, near the point of division, may be placed the side branch leading to *Eucœlium*, 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 power of producing calcareous spicules in the test has reached its greatest development, and the male reproductive organs have become concentrated to form a single large ovate testis around which the vas deferens is coiled spirally.

The genus *Didemnum* is less modified than *Leptoclinum*, and may be represented by a short side branch from near the ancestral forms of the family. 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.

[1] Della Valle, *Archiv. ital. d. Biol.*, tom. i. p. 193, 1881. [2] Von Drasche, Die Synascidien, p. 18, Wien, 1883.