

besides agrees with *Atopogaster* and the genera above it in most of the other points in its structure.

At the point indicated by D. in the diagram (fig. 12) the axis of the Polyclinidæ divided into two lines of descent, the one leading to an ancestral form in which the stomach-wall was areolated (see p. 177), while the second leads to a form F. in which the stomach-wall is thrown into well-marked longitudinal folds. The short cæca in the areolated condition are probably formed by the breaking up of longitudinal folds, since in *Morchellioides affinis*, a form derived from E., the cæca in the stomach-wall are distinctly arranged in longitudinal rows (see p. 179).

At the point E. two lines of descent were formed, in one of which the branchial aperture of the Ascidiozoid became eight-lobed, while in the other it remained six-lobed, the condition in which it is found in most Compound Ascidians. The ancestors with eight-lobed branchial apertures gave rise (see fig. 12) to the genera *Parascidia* and *Morchellioides* (see p. 177); while the other line of descent has split up into *Synoicum* and the closely allied forms *Sidnyum* and *Morchellium*.

The modification of the branchial aperture seen in *Parascidia* and *Morchellioides* is also found in some of the descendants of F. These forms, characterised by an eight-lobed branchial aperture, have given rise to the genera *Fragarium* and *Circinalium*, and the modification has apparently been formed independently in this branch, since both of these genera have well-marked longitudinal folds in the stomach-wall. The other line of descent derived from F. (see fig. 12) has given rise to the closely allied genera *Aplidium* and *Amaroucium*, which may be regarded as typical Polyclinidæ, and some closely related forms. The genus *Polyclinoides* was probably derived from a side branch between F. and the ancestral form of *Amaroucium*. *Sigillina* seems to be an offshoot from the ancestors of *Aplidium*. *Psammaplidium* is an interesting form also derived from the old and well-known genus *Aplidium*, by a modification of the test, which has acquired the property of taking up and growing over sand-grains and other foreign bodies, so that they become a part of the investing mass (see p. 237).

The second line leading from the point C. (in fig. 11, p. 388) gave rise first to the main axis of the Distomidæ (see fig. 13), and here, just as in the case of the early Polyclinidæ, a series of changes must have taken place, resulting in the formation of large colonies in which the Ascidiozooids were more or less completely imbedded in a common investing mass formed by the fusion of their tests. The union of the atrial apertures to form common cloacal cavities apparently did not take place so soon as in the case of the Polyclinidæ, as in many of the Distomidæ the atrial apertures of the Ascidiozooids are still found opening independently on the exterior of the colony.

The line leading from the point C. (fig. 13) to the early Distomidæ gives off a short side branch to the genus *Diazona*. This remarkable form, although not situated upon the main axis, is probably the nearest form now known to the common ancestor C.