

allied to *Corella*, while *Abyssascidia* is a link between *Corynascidia* and *Ascidia*. Like some of the other deep-water forms,—e.g., *Hypobythius*, *Fungulus*, and some of the species of *Culeolus*,—*Corynascidia* has the body pedunculated, and the test is soft and fragile, both in that genus and in *Abyssascidia*. The alimentary canal, also, in all these abyssal forms is small relatively to the size of the branchial sac and of the body generally, while the mantle and branchial sac are always delicate.

The stomach and intestine vary considerably throughout the Ascidiidæ in their relation to the branchial sac, but it is possible to trace the passage of one form into the other. The simplest and central arrangement seems to be that which prevails in the genus *Ciona*, where the œsophagus continues the antero-posterior line of the branchial sac, and thus throws the stomach and the first part of the intestine behind the branchial sac. In *Ascidia* and in *Pachyclæna* a change has been effected, probably by the branchial sac having extended down on the right side of the stomach and intestine, resulting in the arrangement shown in figure 22, page 202.

In *Corella* the relation is very different, and the conditions of affairs found in *Corynascidia* and *Abyssascidia* are intermediate between that seen in *Corella* and the primitive arrangement in *Ciona*. In *Corynascidia* the stomach and intestine, which reach as far back as the posterior end of the branchial sac, but do not extend beyond it, are situated along the dorsal edge of the sac, and, if anything, slightly on the right side (Pl. XXV. fig. 2). This condition might be brought about in a *Ciona*, by making the posterior end of the branchial sac extend down upon the ventral side of the stomach, instead of upon the right side as in *Ascidia*. Then in *Abyssascidia*, where the stomach and intestine are at the posterior end of the right side of the sac (Pl. XXVII. fig. 3), the process commenced in *Corynascidia* has advanced still further, and the branchial sac has extended posteriorly upon the left side, in place of the ventral edge. Finally, in *Corella* (Pl. XXVI. fig. 3) we find the same relation as in *Abyssascidia*, but here the stomach and intestine are still more completely upon the right side of the sac, so as to form a perfect contrast to the arrangement in *Ascidia*; and in this respect *Corella japonica* seems more advanced than *Corella parallelogramma*, where the disposition of the intestine is more like that seen in *Abyssascidia*.

It is more natural, I think, to attribute these changes to a posterior prolongation of the branchial sac, the stomach and intestine remaining comparatively passive, than to suppose that the arrangement found in *Ciona* has become modified into those in *Ascidia* and *Corella*, by the stomach and intestine having moved up in the one case upon the left side of the branchial sac, and in the other upon the right, while in *Corynascidia* they have occupied the dorsal edge.

*Ciona* shows also the simplest arrangement in the structure of the branchial sac. In most of the species of *Ascidia*, the complication described under the name of longitudinal plication has been produced, while in *Corella* and some other forms the stigmata have