Then again, in *Ecteinascidia turbinata*, where the connecting ducts are not expanded and triangular (Pl. XXXVI. fig. 3), the languets are merely finger-like processes (Pl. XXXVI. fig. 6, *l.*), and running down the two sides of the dorsal area are a series of processes, which are shaped exactly like the connecting ducts, but are free at their ends, like the languets beside them (Pl. XXXVI. fig. 6). Hence, it seems to me that there can be little doubt that the languets, and therefore the ribs and teeth of the dorsal lamina, correspond to the connecting ducts of the branchial sac, and not to the papillæ of the internal longitudinal bars.

In conclusion, I give a table (page 286), showing what seem to me to be the genetic relationships between the different groups of the Ascidiæ Simplices. As this is founded merely upon the anatomy of the adult forms, it is of course liable to contain errors of detail, but the main lines are probably correct. The wisdom of attempting to form a genealogical scheme out of such insufficient data, will, I doubt not, be questioned by some, but if of no further value, the table serves at least to show the connection in some of the most important points of structure between the different genera.

The ancestral form of all the Simple Ascidians I imagine to have been something like a *Clavelina* without a peduncle (A. in the table). That is to say, it had a body which was elongated antero-posteriorly, so as to allow the stomach to lie behind the branchial sac; it had unbranched tentacles, and a simple branchial sac, with no folds and no internal longitudinal bars; and finally, it had the power of reproducing by gemmation. From such a form it is easy to derive *Clavelina*, by the change (shown at 1) of the posterior end of the body into a peduncle. Before this took place, however, two series of forms must[1] have split off from the main line: one of these, by a change (2) in the relations of the branchial sac and the stomach, produced the genus *Perophora*, while the other, by the development of internal longitudinal bars in the branchial sac, became a form (B.) which was probably the common ancestor of all the other Simple Ascidians, and which, by the addition of a peduncle (3), attained the structure of *Ecteinascidia*.

After this point a change must have taken place in the main line, from B. onwards, resulting in the loss of the power of reproducing by gemmation, as this quality is possessed by none of the remaining groups; and thus a form was produced, having all the characters of the genus *Ciona*. This was the common ancestor of the Ascidiidæ, the Cynthiidæ, and the Molgulidæ, and, after the separation of a form (C.) having the branchial sac folded, of the Ascidiidæ alone. From this central *Ciona*-like being, *Abyssascidia* and *Corella* on the one hand, and *Pachychlæna* and *Ascidia* on the other, may be derived, by changing the relations of the stomach to the branchial sac in a manner which has been already described (page 283).

Returning to C., the common ancestor of the Cynthiidæ and Molgulidæ, we find it

[1] This and other objectionably dogmatic words which occur in the following description are merely used to avoid circumlocution. As has been already stated, I fully recognise the hypothetical nature of these investigations.