there arises early a vertical longitudinal fold of the exoderm above the pneumatocyst; and this commencement of the typical vertical sail determines the amphithect or bilateral development of this family; the umbrella becomes elliptical, and the gonostyles bud between central siphon and corona of tentacles, not in concentric circles (as in the Porpitidæ) but in elliptical or oblongish rings. The ontogenetic metamorphosis of these larvæ, developing into the first asexual generation, is not completely known in any Disconectæ. For further particulars regarding the ontogeny reference may be made to the works of Kölliker (**4**), Vogt (**5**), Gegenbaur (**7**), Huxley (**9**), Pagenstecher (**55**), Alexander Agassiz (**57**), and others.

Phylogeny.—The historical or phylogenetic development of the various forms of Siphonophoræ, which we unite in the legion Disconectæ, may be partly recognised from the critical study of their comparative anatomy and ontogeny. By this means I have been conducted to new views of the origin of this interesting subclass, quite different from those of all naturalists who have hitherto treated the question. The general opinion is that the Disconectæ are the most highly developed Siphonophoræ, terminating the series of this class, and most nearly related to the Cystonectæ (Physalidæ). Even the radial chambers of the pneumatophore of the Disconectæ have been often compared to the crista-chambers of the pneumatophore of *Physalia*. This comparison, and all the important consequences deduced from it, are, in my opinion, perfectly erroneous. In direct contradiction to it, I am convinced of the truth of the new theory which I have already shortly explained in my propositions;[1] its principal points are here repeated.

The Disconectæ (or Disconanthæ) have no direct relation to the Siphonanthæ (or all other Siphonophoræ); they have originated, independently of the latter, in a different way and from a different group of Hydromedusæ. Whilst the Siphonanthæ are probably the offspring of the Anthomedusæ (Codonidæ), and their cormus developed by budding from the ventral line of the original siphon, the Disconanthæ, on the other hand, are probably descendants of the Trachomedusæ (Trachynemidæ), and developed by budding from the subumbrella.

The common ancestral group of all Disconectæ is the family Discalidæ (most nearly allied to the Trachynemidæ). From these, probably, the two other families, Porpitidæ and Velellidæ, have been developed as two divergent branches, or, perhaps, the latter have been derived directly from simpler forms of the former family.

Synopsis of the Three Families of Disconectæ.

1. Umbrella circular and regular octoradial. Blastostyles without mouth, . . 1. Discalidæ.
2. Umbrella circular, in the centre octoradial. Blastostyles with a mouth, . . 2. Porpitidæ.
3. Umbrella elliptical or bilateral. Blastostyles with a mouth, . . . 3. Velellidæ.

[1] System der Siphonophoren, Jena, 1888.