

the former and each of the latter possess on the middle of their upper surface an external aperture (the stigma of the exumbrella). Only in the possession of this hydrostatic apparatus is this *Disconula* distinguished from an ordinary eight-rayed entirely regular *Hydromedusa*. Certain *Trachomedusæ* (*Trachynemidæ*, *Pectyllidæ*) present a most striking resemblance. Even in another further advanced larval stage, which we may call a *Porpula*, the regular structure of a simple *Craspedote* person is still retained. The *Porpula* is distinguished from the *Disconula* in this, that the number of marginal tentacles has increased from eight to sixteen, and several concentric annular air-chambers are apposed to the primary circle of eight. In a still later stage the number of concentric air-chambers is greatly increased, and the tentacles form several rows at the margin of the umbrella. Then between the margin of the umbrella and the central siphon, eight or sixteen conical buds grow out from the subumbrella—the subsequent bearers of the gonophores. They remain closed in the monogastric *Discalidæ*, but acquire a mouth opening in the polygastric *Porpitudæ* and *Velellidæ*. The youngest larvæ of the *Velellidæ* are hardly to be distinguished from those of the *Porpitudæ*; the difference between them only becomes distinct when in the former the vertical skin-fold of the exumbrella begins to be developed (*Rataria*), in the base of which is formed the diagonal crest of the pneumatophore which determines the *amphitheat* ground-form of the *Velellidæ*. Their youngest larvæ, however, are as octoradial as those of the *regular Porpitudæ*. At an early stage they are distinguished by this, that in the *Porpitudæ* each of the eight radial air-chambers forms a stigma, in the *Velellidæ* only two lying obliquely opposed. The resemblance between these larvæ and the *Pectyllidæ* suggests that the *Disconanth*s have been originally developed from this group of *Craspedotæ*. If the eight sac-shaped gonads, hanging down from the subumbrella of the *Pectyllidæ*, were not themselves reproductive organs, but medusoid gonophores, and if above these in the gelatinous substance of the disc, a glandular depression or exumbrellar invagination led to the constriction of an air-sac, then from a *Pectyllid* or *Trachynemid* there would be derived a very simple *Discalid*.

SIPHONULA LARVA OF THE SIPHONANTHÆ.

Entirely different from the first stage in the development of the *Disconanthæ*, is that of the second legion—the *Siphonanthæ* (*Calycophoridæ*, *Physophoridæ*, *Pneumatophoridæ*, *Aurophoridæ*). Different as are the *Siphonophoræ* of this manifold legion in their fully developed form, their primary larval forms are very similar, at least so far as their ontogenetic history is yet known. The *Siphonula*—or the primary medusiform larva—is in this legion from the first not octoradial and regular, but bilaterally symmetrical. The original circle of tentacles on the umbrellar margin has disappeared; in all cases only a single capturing filament (*Fangfaden*) persists, the *primary unilateral*