

Hydroids proper have no radiating tubes, while their Medusæ buds have them fully developed. I suppose the case to be this: That a perfect Medusa has two distinct structural elements, the disk or bell with its radiating tubes, and the proboscis with the mouth, and that in Hydroid communities the different individuals present one or the other of these two elements, singly developed or more or less combined; while their Medusæ buds have always the characteristic features of perfect Medusæ, and are always sexual, whereas the Hydroids are never so, whether the proboscidal or the bell element be the more prominent. If this be true, then the characteristic feature of a Diphyes community consists in the more Medusoid character of some of its Hydroids, while the more numerous individuals resemble the common Hydroids more, and, like those, produce the sexual Medusæ buds. We have already seen, in the family of Tubulariæ (p. 45), analogous combinations of characters; some of the fertile buds of these Hydroids being more Medusoid in their structure than others.

The peculiarities of the genus *Abyla* (*Calpe*) seem to confirm this view. We have here also, as in most Diphyes, two so-called swimming-bells, only that the first is much smaller and less Medusa-like than the second, and that the so-called Polyps of the pendent string are not protected by simple scales, but by a cap resembling the first swimming-bell, with this additional peculiarity, that the tentacles are more or less removed from the base of the Polyps.

The genus *Praya* is very closely allied to the genus *Diphyes*, but its two swimming-bells are placed side by side, and the pendent string consists of Hydroids with a distinct helm-shaped bell, from which arise the Medusæ buds. This string of twin individuals, one of which is a Hydroid with a helm-shaped bell and another a genuine Medusa, has been described as a string of single individuals, the Medusa buds being considered as their sexual organ, but with as little propriety as in the genuine *Diphyidæ*, for these buds again are themselves sexual. The so-called single individuals of all *Diphyidæ* are not single beings, but twins, one of which is Hydroid, and the other Medusoid, in its structure; and these twins drop together and swim about freely as independent individuals.

In the genus *Vogtia*, the so-called swimming-bells have a quadrangular shape, somewhat like a contracted *Staurophora*, and though no radiating tubes have been described in them, I doubt not that they will be found when sought for. Below the pyramid of these Medusoid Hydrae, there are a few simple, sucker-like Hydroids, and from the lower part of the axis arise the sexual Medusæ buds, with enormous proboscides, covered either with eggs or spermatie cells, projecting far out of the Medusa bell, as is sometimes the case with those *Sarsias* that are not detached from their stem. (Pl. XVII. *Figs.* 13, 14, 15, and 16.) In the genera *Hippopodius* and *Elephantopus*, which are certainly distinct, though frequently considered as