

phore, and underneath that a (simple or multiple) horizontal corona of swimming-bells, and in the middle of the latter (in the dorsal median line of the nectosome, opposite the ventral row of buds) a large aurophore, a new, hitherto unknown organ, which is to be regarded as a swimming-bell modified into a large gas-gland.

### NECTOPHORES OR SWIMMING-BELLS.

(*Nectocalyces*, *Nectozoids*, *Schwimmglocken*, *Schwimmhöhlenstücke*.)

The swimming-bells generally exhibit so clearly the structure of the *umbrella* of a simple hydromedusa person, that there can be no doubt as to their morphological import as the locomotive organ of such a person—in the sense of the poly-organ theory. The cavity of the gelatinous disc is clad throughout by the circular muscle layer of the subumbrella, and its distal margin protrudes in the form of a true velum, at the base of which runs the circular canal which unites the four radials. The poly-person theory interprets these facts, however, in this way, that each swimming-bell is to be regarded as a medusoid *person* or “locomotive zoid,” in which the locomotor umbrella is well developed, but the nutritive manubrium degenerated. To this the medusome theory has to reply that such a phylogenetic interpretation is not corroborated by the known ontogenetic facts. The protocodon, or the “*primary swimming-bell*” of the Siphonula is only an *organ* of this medusoid person. It does not remain as such in most (if not all) of the Calyconectæ, but becomes thrown off, and replaced by metacodons or *heteromorphic* “*secondary swimming-bells*.” In the monogastric Calyconectæ the protocodon is modified into the covering bract of the Eudoxia, while in the Physonectæ, Cystonectæ, and Auronectæ it becomes the pneumatophore. The numerous metacodons, which in the Physonectæ and Auronectæ, as well as in the Polyphyidæ, form the two-tiered, many-tiered, or radially disposed swimming column, are either displaced umbrellas of medusomes, which are repeated metamerically in the several cormidia, or are simply *vicariæ* or “reserve bells” (“Ersatzglocken”) which arise by the multiplication of such umbrellas, and are often present in great numbers.

### PNEUMATOPHORE OR SWIMMING-BLADDER.

(*Air-Chamber*, *Luftkammer*, *Schwimmlase*.)

The hydrostatic organ of the Siphonophoræ, which is known as *pneumatophore*, is only absent in one order, that of the Calyconectæ. In the other Siphonophoræ it is generally present and that in two different forms; the Physonectæ, Cystonectæ, and Auronectæ possess a simple swimming-bladder at the superior or apical pole of the stem;