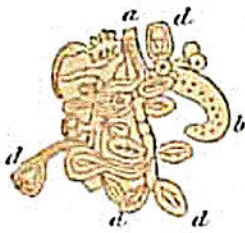


with the larger so-called Polyps, and smaller ones connected with the smaller individuals (*Fig. 28 c o*). These two kinds of individuals seem to be always distinct, and some of them never even gape at their outer end. The individuals of these two kinds form large clusters, small communities as it were, connected with the larger community. There is a third kind of individuals, smaller than either (*Fig. 27 d d*), which are fertile, and upon the neck of which arise numerous Medusæ buds, presenting all the characters of the naked-eyed Medusæ; that is, having, like them, four radiating tubes and a circular tube (*Fig. 29 d d*). These Medusæ form clusters

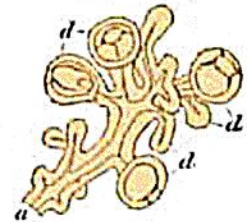
Fig. 29.

Bunch of Medusæ of
PHYSALIA AETHUSA, Til.

In various stages of development.

a Common hollow base of attachment of the whole bunch, communicating with the chymiferous cavity of the alaræ. — *b* So-called Polyp, or sucker. — *d d d d* The Medusæ buds.

so similar to the bunches of Medusæ that hang from the genuine Tubularia, that they might easily be mistaken one for the other (*Fig. 30*). (Compare Pl. XXIV. fig. 1 with *Fig. 29*.) Here, then, is a Siphonophorous community, in every respect similar to a Hydroid community, consisting of various kinds of Hydroids, from some of which are produced Medusæ buds, as in ordinary Hy-

Fig. 30.

Bunch of Medusæ of
TUBULARIA COUTHOUYI, Ag.
a Common axis. — *d d d* Mature Medusæ, already withering.

droids. The fact that in *Physalia* these Medusæ buds do not separate from the community but wither upon the stock from which they arise, is not peculiar to this group of animals; since we have already seen, that, in the family of Tubularia, we have those that produce free Medusæ, the genus *Hybocodon* and others, the genera *Tubularia* (*Fig. 30*), *Thamnocnidia*, and *Parypha*, the Medusæ of which do not separate from their parent stock. These facts are in themselves sufficient to show that the *Physalia* community does not consist of aggregated Polyps, but of aggregated Hydroids; and that in a natural classification they cannot be referred to any other order than the Hydroids, though in that order they constitute a distinct family.

The idea of considering the Medusæ buds of these communities as the sexual organs of the Hydroids is not admissible; for we have seen that these buds may become independent and free, and that in due time they acquire themselves distinct sexual organs, some individuals being provided with ovaries the eggs of which undergo all the changes through which ordinary eggs pass until new individuals are formed in them, while other individuals are provided with spermaries which at the time of spawning are filled with spermatic particles. Now, unless sexual organs can themselves have distinct sexual parts of both sexes, all these so-called sexual organs of the Hydroids must be considered as naked-eyed Medusæ, which are not freed from their parent stock as is the case with others.

Velella and *Porpita* consist of compound communities like *Physalia*, only that here the diversity of the Hydroids attached to a common base is not so great,