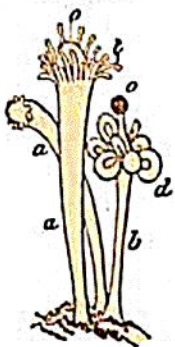


Hydroids; and also under what common name they should be designated. The answer to these two questions is not difficult.

Since the free Medusæ known to originate from Hydroids all belong to the type of the *Discophoræ Cryptocarpæ* of Eschscholtz, the *Gymnophthalmata* of Forbes, or *Craspedota* of Gegenbaur, there is presumptive evidence that the final investigation of the true affinities of these Medusæ will lead to a natural association of all those which are really and closely related to one another, to the exclusion of the possible foreign admixtures now left in this group, and that such a natural group will in the end embrace all the Medusæ originating from Hydroids. It is also possible, however, that such a natural group of Medusæ may embrace genera undergoing a direct metamorphosis from the egg to the perfect Medusa without intervening Hydra stock, as we already know that there are higher Discophoræ, such as *Pelagia*, which reproduce themselves without passing through the Strobila state. But this would not alter the case of the affinity of such Medusæ: it would only show that the natural group to which they belong exhibits a wider range in its modes of development. The systematic position of any Medusa must be determined by an investigation of its special structure, and if there are any Medusæ, not arising from Hydroids, but growing up directly from eggs to their permanent form, and presenting the same special structure as those that arise from Hydroids, there is no reason why they should be separated. Upon this view we shall hereafter consider the affinities of the *Æquoridæ*, the mode of development of which is not yet fully ascertained, and those of the *Æginidæ*, some of which are known to undergo a direct metamorphosis. As to the Polyp-like Acalephs already known to produce free Medusæ, they have all been united by Johnston into one natural

Fig. 61.



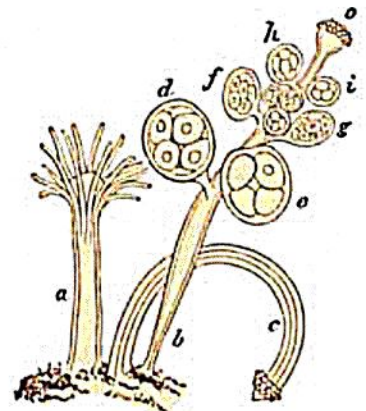
HYDRACTINIA POLYCLINA, Ag.

*a a* Sterile individuals. — *b* Fertile individual, producing male Medusæ. — *d* Clusters of male Medusæ. — *o o* Proboscis, with the mouth at the apex. — *t* Elongated tentacles of the sterile individuals; in the fertile one *b*, they are simple knobs *o*.

resemblance to Siphonophoræ, Hydractinia (Figs. 61 and 62) affords an excellent example of this type.

division, which he has called *Hydroidea*. But among these Hydroidea there are those which produce no free Medusæ, and yet as Hydroids in no way differ from those that produce them. There is, therefore, no reason why they should be separated: the less since, instead of free Medusæ, they produce sessile Medusæ buds identical in their structure with the free Medusæ originating from the other Hydroids. On account of its re-

Fig. 62.



HYDRACTINIA POLYCLINA, Ag.

*a* Sterile individual. — *b* Fertile individual producing female Medusæ. — *d e* Female Medusæ, containing advanced eggs. — *f g h i* Cluster of female Medusæ with less advanced eggs. — *o* Peduncle of the mouth with short globular tentacles. — *c* Individual, with globular tentacles, upon which no Medusæ have as yet appeared, or from which they have already dropped.