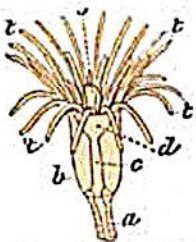


from these facts, that the classes of Polyps and Medusæ must be united into one? That there is a considerable difference between the Medusæ arising as buds from Hydroids and the other Discophoræ appears plainly from the fact, that Eschscholtz has already separated them into two groups, calling the former Discophoræ Cryptocarpæ, and the latter Discophoræ Phanerocarpæ; while Forbes, grouping them in a similar manner, calls the former Gymnophthalmata and the latter Steganophthalmata, and Gegenbauer, Craspedota and Acraspeda. This distinction, it is true, is mainly founded upon differences in the structure of the ovaries and spermaries, of the eye-specks of the margin of the disc, and of the radiating tubes, which are much fewer in the naked-eyed Medusæ, and generally simple; but now the striking peculiarity of their mode of reproduction may be added to separate them with more precision.

It is important here to remark, that the so-called Hydro-Medusæ have generative organs only in their Medusa state, and that the Hydroids themselves show no sign of sexuality; for I shall show hereafter that what has been considered as sexual organs in some Hydroids are themselves Medusæ, differing simply from the ordinary naked-eyed Medusæ in not separating from the Hydroid stem upon which they bud. The Hydroids appear, then, as a kind of larval condition of the Hydro-Medusæ; and, in my opinion, can no more be considered as genuine Polyps, than the wormlike larvæ of Insects can be considered as genuine Worms. For, just as by a series of transformations the worm-like young of the Insect pass into the state of perfect Insects, so also are the Hydroids a state of the naked-eyed Medusæ preceding the maturity of the latter, and standing in a definite relation to them, even though that relation be not exactly the same as that which exists between the Insect larva and the perfect Insect. The Hydroids are no more a distinct group of animals than the larvæ of Insects, and while they bear a certain resemblance to Polyps, they can no more be united with the Polyps than the larvæ of Insects with the Worms, except in as far as they belong to the same branch; for the Worms, as a class, stand in the same relation to the Crustacea and Insects

Fig. 10.



CAMPANULARIA, expanded.

a Axis of the body. — b Calyx. —
c and d Digestive cavity. — o
Mouth. — t t t Tentacles.

as the Polyps to the Acalephs and Echinoderms. The structural peculiarities that essentially distinguish the Insects from the Worms appear already in their larvæ, which are provided with trachææ as well as the perfect Insects. And so also is the structure of the Hydroids a Medusa structure (*Fig. 10*), and not a Polyp structure. The margin of the mouth spreads outward, and is not inverted to form a digestive cavity distinct from the main cavity of the body. Moreover, the main cavity of the body in the Hydroid has no radiating partitions, as that of the Polyps has; and this is true of all Hydroids without exception. Those from which the Medusæ