

which is gradually enlarged and elongated and from which hang all the other secondary buds, and the secondary Hydræ, which are more or less similar to one another and remain small through life.

The next step in the complication of these communities consists in the appearance of other kinds of Medusæ and other kinds of Hydroids, variously combined in different genera: the additional Medusæ being genuine sexual Medusæ, and the additional Hydroids partaking also, more or less, of the character of Medusæ. A comparison of these sexual Medusæ buds of Siphonophoræ with the Medusæ buds of ordinary Hydroids must satisfy any one, equally familiar with the mode of development of the two types, that there is no essential difference between them. The illustrations published by Kölliker in the "Schwimmpolypen" (Pl. VIII. *Figs.* 4 and 5) afford the best example on record for a comparison with *Figs.* 13, 14, 15, and 16 of Pl. XVIII. of this work. *Fig.* 4 of Kölliker represents what he calls the testis of *Vogtia pentacantha*; it is the exact counterpart of my *Figs.* 13 and 14, which represent a male Medusa of *Coryne mirabilis*. Kölliker's *Fig.* 5 represents what he calls the ovary of the *Vogtia*; it corresponds exactly to my *Figs.* 15 and 16, which represent the female Medusa of *Coryne*. Now this so-called testis and this so-called ovary consist of a genuine Medusa bell, with four radiating chymiferous tubes and a circular tube, identical in their structure and arrangement with the chymiferous tubes of all the naked-eyed Medusæ. The resemblance extends even further: Kölliker's *Fig.* 4 shows distinctly the proboscis of this supposed testis; it is marked *c* in his figure and described as sperm sac, and its vibratile cavity is marked *d*. The proboscis of the supposed ovary is not less distinct in *Fig.* 5; it is marked *c*, and described as an egg sac. But had Kölliker examined more fully these prominent sacs arising from the centre of their Medusæ bells, he would have satisfied himself that the sperm cells and the eggs are not contained in the cavity of the sacs, but arise, as the eggs and sperm cells of the *Coryne*, in the outer wall of the sacs; that is, upon the proboscis of the Medusæ, as in *Coryne* and a large number of other genera of naked-eyed Medusæ.

The second kind of secondary Hydræ, upon the actinal prolongation of the axis of the primary Hydra of many Physophoridae, differs from those already described in having a so-called covering scale (Deckblatt, Hydrophyllium) by the side of their pendent proboscis. As I have already shown (pp. 54 to 56), this is a kind of open bell, intermediate in its character between the calyx of an ordinary Hydroid and the bell of an ordinary Medusa, more medusoid than the calyx of a Hydroid but less so than a Medusa proper, having no radiating chymiferous tubes, and differing from both in being one sided and more or less flattened. But as one-sided calyces occur also among Hydroids, this does not constitute an important difference, nor a distinguishing feature for Siphonophoræ.