spermatic particles in the sperm cells has been observed; their special homologies with the highest Discophoræ have been made out; and nothing is wanting to prove that the naked-eyed Medusæ, in their adult condition, are genuine Acalephs, closely allied to the covered-eyed Discophoræ. The naturalists who, having identified them with the so-called sexual bunches of the Siphonophoræ, would consider them as free sexual organs because these bunches appear to them to be sexual organs, and not clusters of sterile Medusæ, are bound to show that spermaries and ovaries may have the structure of perfect Medusæ, that is, a gelatinous bell, radiating and circular chymiferous tubes, and a proboscis; not simply by affirming that certain low sessile Medusæ are sexual organs, but by adducing the evidence of a similar structure of the sexual organs in other Acalephs. The burden of furnishing that proof rests with them, because other naturalists have already shown that these supposed free sexual organs, including the gonocalyx of the Diphyidæ and the androphores and gynophores of the Physophoridæ, not only exhibit all the characteristic structural features of genuine Acalephs, but are themselves either male or female individuals provided with ovaries and spermaries.

As the divergence of opinions upon this point has arisen from the peculiar phenomena known as alternate generations, it is proper that we should now turn our attention to this subject for a moment, and examine critically the distinctive features of the various facts now generally considered as constituting one peculiar mode of reproduction; since, from the beginning, heterogeneous phenomena have been confounded under that name. Without stepping beyond the limits of the class of Acalephs, we have, in the first place, the case of the higher Discophoræ, in which, as for instance in Aurelia and Cyanea, the young born from eggs (Pl. X. *Figs.* 1 and 2, and Pl. X^{a}. *Figs.* 16–24) as independent, locomotive, single individuals (Pl. X. *Figs.* 3 to 10, and Pl. X^{a}. *Figs.* 25 to 36), become attached (Pl. X. *Figs.* 11, 12, 13, and 14), and then tentacles appear gradually (Pl. X. *Figs.* 13 and 14), the young thus assuming the form of Hydræ, with an increasing number of tentacles (Pl. X. *Figs.* 16 to 37, and Pl. X^{a}. *Figs.* 11 to 15). The body is next furrowed by transverse grooves, and assumes an annulate appearance, and the rings thus formed (Pl. XI. *Fig.* 19) become gradually more distinct and more numerous, until the Hydra is changed into a Strobila, which is only a Hydra undergoing a process of transverse segmentation. As the process of isolation resulting from a deeper and deeper contraction of the ambulacral segments becomes more complete, the whole resembles a pile of scalloped saucers, with a fringe of tentacles; next, the uppermost segment drops off; then the next disk, then the next, and so on until in the end, each disk has separated successively from that below (Pl. XI. *Fig.* 29), and the base of the original Hydra, having reproduced tentacles, remains alone, perhaps with a few disks attached to it (Pl. XI. *Figs.* 1, 4, and 17), or with a