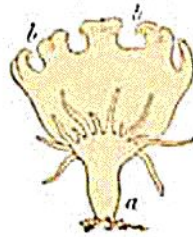


single disk, as in *Fig. 13*. These free disks are genuine Medusæ, and have long been known as Ephyræ (Pl. XI<sup>a</sup>).—*Figs. 58, 59, and 60*, below, represent a summary history of this mode of reproduction.—The Ephyræ are, in course of time, transformed into common Medusæ: those of our *Aurelia flavidula*, *Pér. and LeS., Fig. 60*, assume the characters of that genus, consisting in innumerable small tentacles all along the margin of the disk, with four long, pendent so-called arms around the mouth, etc. (comp. Plates VI., VII., and VIII.); while those of *Cyanea arctica*, which at first hardly differ from those of *Aurelia*, are transformed into the largest Jelly-fish of our coast, and end in having the appearance of Pl. III., III<sup>a</sup>, IV., and V.

*Fig. 58.*

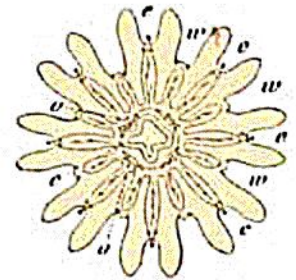
Scyphostoma of  
*AURELIA FLAVIDULA*, Pér. & LeS.

In this stage of growth, *Aurelia* is simply a Hydroid.

*Fig. 59.*

Strobila of  
*AURELIA FLAVIDULA*, Pér. & LeS.

*a* Scyphostoma reproduced at the base of a Strobila *bb*, all the disks of which have dropped off but the last.

*Fig. 60.*

Ephyra of  
*AURELIA FLAVIDULA*, Pér. & LeS.

*c* Mouth.—*ee* Eyes.—*oo* Ovaries.—*ww* Tentacular spaces.

We have thus a *complete metamorphosis of an Ephyroid animal into a perfect Medusa* entirely different from it both in form and complication of structure, and this metamorphosis is the sequel of another series of genetic phenomena, during which *one single being* arising from an egg of *Aurelia* or *Cyanea*, at first free and afterwards attached, *ends in dividing into a dozen and more, may be twenty and more, distinct free Ephyræ*, without ceasing to live, for the Strobila reproduces tentacles below the last Ephyra (*Fig. 59*) before this drops off, and resumes its Scyphostoma or Hydra form. Now, this part of the process is neither a metamorphosis proper nor an alternate generation comparable to that of the ordinary Hydroids, for here the body of the Hydra is partially lost in the formation of the Ephyræ. The crown, or row of tentacles, at its actinal end, after separating, dies and decomposes; while the central portion of the Hydra, intermediate between the tentacles and its abactinal end, divides into numerous free, active Ephyræ, which continue to live until they have completed their metamorphosis, and laid an immense number of eggs. The base of the Hydra, with its new tentacles, also survives, and may live for years. Its further history, to which I shall allude again hereafter, still presents, however, some mystery.

In the Hydroids proper, which also produce free Medusæ, the origin of the free brood is entirely different, and truly leads to a succession of alternate generations. Arising from the eggs of their free Medusæ, these Hydroids, when mature,