

bring forth buds from different parts of their axis, in different families, and even in different genera of the same family. These buds start either from the stem or from the upper part of the body, or even from the proboscis of the Hydra: they gradually enlarge, and assume the appearance of Medusæ, even while still connected with the Hydra, and free themselves finally, and become independent animals, undergoing but slight changes comparatively after their separation, except that they grow larger, develop their sexual organs, and finally lay eggs, out of which arise new Hydræ. The Hydræ themselves undergo no changes whatever in consequence of this production of free Medusæ: they neither lose their tentacles nor any part of their body, and continue to live for an indefinite period of time, and may produce other crops of free Medusæ,—although I have not traced directly such a repetition of their reproduction.

Here, as in the case of Aurelia and Cyanea, the connection of the free Medusæ and the Hydræ is unquestionable, and hardly less direct in the one than in the other; for, though the Ephyræ are parts of the body of Hydræ, the free Medusæ of the common Hydroids are buds from Hydræ, some of which differ but slightly from the Hydræ of Aurelia and Cyanea. If, therefore, the Hydræ from which Ephyræ arise, belong to the class of Acalephs as young of the highest type of Discophoræ, surely the Hydræ born from the eggs of naked-eyed Medusæ, though reproducing again the same kind of Medusæ only through buds, must equally belong to that class; and this the more since these Hydræ themselves have already been shown to be strictly homologous to Acalephs, and not to Polyps (p. 44). The doubts entertained by some naturalists respecting the systematic position of the Hydroids have arisen from a belief that Hydroids were Polyps, in connection with the fact, disclosed during the last twenty years, that they produce free Medusæ, when the following alternative seemed inevitable: either must Polyps and Acalephs be united as a class, or, if considered distinct, it must be acknowledged that Polyps produce Medusæ. But neither is true. Hydroids are not genuine Polyps, and the true Polyps may be considered as a distinct class, without forcing upon us the conclusion that they produce Medusæ; since the Polyp-like Radiates from which free Medusæ arise are themselves a low type of Acalephs, remarkable for the polymorphism of its representatives. And yet, however great the diversity of the individuals of one and the same kind of these Acalephs may be, it is easily reduced to two forms, one of which belongs to the Hydra type, the other to the Medusa type.

The genetic connection of certain Hydroids and certain free Medusæ once established, it remains only to be settled what are the kinds of Acalephs which should be considered as belonging to their type, among those Hydroids not known to produce free Medusæ and among those Medusæ not known to originate from