

affinity to Salamanders and to Ichthyoid-Batrachians could never have been determined with the same precision; but for our knowledge of the development of the Comatulæ, that family would for ever have remained associated with the Starfishes; and it seems to me that the inference is unavoidable, that the various modes of development of the Acalephs, as far as their embryology has already been traced, must afford the surest clue to the natural affinities of these animals, and, perhaps, furnish a standard also by which we may determine to what group certain polyp-like Radiata, alternately placed among Polyps and among Acalephs, truly belong. Should their special homologies coincide with the indications furnished by their embryology, all doubts on this point would seem to be removed; for, if the conclusions arrived at in those types of the animal kingdom which are now best known have any analogy with the phenomena observed in other types, we should be able to trace special homologies between all the representatives of the class of Acalephs, in the same manner as between all Insects, or between all Mammals.

In this way, it would scarcely seem difficult to determine whether those animals which have been at different times referred to the class of Acalephs and to that of Polyps truly belong to the one or the other, if the Polyps and Acalephs indeed constitute two classes, or if not, to demonstrate satisfactorily that they should form but one class. Again, all the representatives of the different classes of one branch are found to agree in their general homologies, as far as they have been thoroughly studied,—the Fishes with the Reptiles, Birds, and Mammals; the Insects with the Crustaceans and Worms; and the Acephala with the Gasteropods and Cephalopods. On the other hand, should there be any animals, thus far referred to the class of Acalephs or to that of Polyps, which do not agree in their general homologies with the true Polyps and the true Acalephs and Echinoderms, we should not hesitate to remove them from the type of Radiates. Thus we may also settle the question, whether the Ctenophoræ are true Radiates or Mollusks, as Quoy and Vogt have maintained.

In order to avoid any hasty conclusions, let us examine successively all the leading representatives of every group that may have been associated with either the Acalephs or the Polyps, both with reference to their homologies and their mode of development. Beginning with the Medusæ proper (Pl. III., IV., V., VI., VII., VIII., IX., XII., XIII., and XIV.), we find them to be animals which move freely, presenting an hemispheric gelatinous disk, in the centre of which a digestive sac is hollowed out. From the margin hang numerous filaments, and the central opening is surrounded by four larger appendages. From the central cavity arise many tubes radiating towards the periphery, where they anastomose. The essential feature of this structure consists in the central cavity hollowed out of a continuous mass,