

this body wall, and not the mouth, which is surrounded by radiating appendages outside of the central opening.

This comparison is in itself sufficient to show, that, while every part in a Medusa is homologous to every part in an Actinia, these homologies are only general homologies; that is, indications that these two animals belong to the same branch of the animal kingdom, but that special homologies cannot be traced between them. The body of the Actinia has a flat disk at the lower end, which, though contiguous with the outer wall, differs from it so much as to constitute a base of attachment entirely wanting in the Medusa. The upper part of the lateral walls of the Actinia is thinned in a manner which forms a sort of circular neck below the fringes, facilitating the inversion of the whole margin towards the centre in a manner impossible to the Medusa. The central opening of the Actinia is not circumscribed by the margin of the upper part of the walls of the body, but that margin is turned inward; while in the Medusa it hangs free, outward. The radiating hollow spaces are limited in Actinia by radiating partitions, the inner margin of which is free, and suspended vertically in the main cavity; while in the Medusa, what may be compared to the partitions of the Actinia is a continuous gelatinous mass, between which simple tubes are left, communicating only through narrow openings with the central cavity, or in other words, the homologous parts of the Actinia and Medusa exhibit a structure special to each.

We find the same special homologies in all the Actinoid Polyps. They all have a cylindrical body with a central cavity, divided into chambers by radiating partitions, marginal fringes communicating with these chambers, and a digestive cavity hanging free into that cavity below the central opening; while in all Medusæ we find the same continuous gelatinous body with a simple central cavity and radiating tubes, and a margin of the central opening turned outward. Now, if the classes of each branch of the animal kingdom, as has been shown in the first volume of this work, are natural divisions exhibiting the same plan of structure, but built respectively in different ways and with different means, we have, in Actinia and in Medusa, the types of two distinct classes; and it only remains for us to examine what are the natural limits of these classes, and what different kinds of animals belong to each. I hold, however, that the preceding remarks are in themselves sufficient to show that it is an exaggeration of their affinities to unite, as Leuckart has done, and as most German naturalists now do, the Polyps and Acalephs in one and the same great division under the name of Cœlenterata.¹

¹ LEUCKART (R.), Ueber die Morphologie, und die Verwandtschafts-Verhältnisse der wirbellosen

Thiere, Braunschweig, 1848, 8vo. p. 13. Full of original investigations and suggestions.