between all Radiates, from the Echinoderms down to the Polyps, without losing the connection between their organic systems; nay, even the form and special disposition of certain organs in the two most remote classes of Radiates are intimately linked together by peculiarities characteristic of some of the Acalephs. For instance, the system of radiating tubes in the lower part of the disc of the genuine Medusæ, and still more strikingly in the Rhizostomes and Cassiopeiæ, presents the most striking resemblance to the distribution of the ambulacral tubes in the lower wall of the spherosome in Clypeaster, Scutella, and Echinarachnius; so much so that the difference between the two types is reduced to the difference there is between a soft wall and a solid wall, and that of an ambulacral system with and without external suckers. But since there are Holothuriæ — the Synapta and allied genera — in which these external suckers are wanting, the whole difference amounts only to a different degree of complication in one and the same system, similar to the various degrees of complication observed throughout the animal kingdom in the differentiation of the organs. The comparisons I have been able to make between Cassiopeia and Echinarachnius and Clypeaster are conclusive upon this point, as will be shown in the sequel.

After tracing so close a correspondence and so many connecting links in the structure of the Echinoderms, Acalephs, and Polyps, I may be permitted to ask what there is left to support the idea of a typical difference between the Echinodermata and Cœlenterata, now so generally and so strongly insisted upon by German naturalists. The truth is that the Cœlenterata do not constitute a primary division in the animal kingdom, but must be united with the Echinoderms as members of one and the same type, including three, and only three, natural classes, equally distinct one from the other, — the POLYPS, ACALEPHS, and ECHINODERMS.[1]

I need hardly remind anatomists of the importance, for their own special studies, attaching to every improvement in the classification of animals; for it is only when their natural affinities are satisfactorily known, that it is possible to give a comprehensive account of their structure.

[1] If this be so, then the name of *Cœlenterata* as designating a distinct type, as well as that of *Anthozoa* as designating the Polyps in contradistinction to the Hydroidea, and that of *Hydromedusina* as including the naked-eyed Medusæ with their polypoid congeners, must be dropped from the system of Zoölogy, and the older names Radiata, Polypi, Acalephæ, and Echinodermata, restored.