in their structure with the true Medusæ. This agreement is complete; and there is no room left for a distinction between Hydroids and Medusæ, any more than for a reunion of Polyps and Hydroids.

The essential structural peculiarity of the Acalephs, as a class, consists in the presence of a central cavity, hollowed in the mass of the body, without radiating partitions, but with an external central opening, the edge of which is turned outward and more or less prolonged, in the shape of oral appendages or fringes. Tentacular appendages may also exist outside of this central opening, or so-called mouth, or may be wanting; but when they do exist, their cavity, if they are hollow, communicates only indirectly, through radiating tubes, with the main cavity of the body, the radiating tubes themselves uniting with a circular tube that follows the outline of the periphery. This is certainly an essentially different structure from that of the Polyps. Again, while the Polyps are always sexual animals, and frequently hermaphrodites in their adult age, the Hydroids are uniformly destitute of sexual organs, but produce, by budding, an alternate generation, the individuals of which, like ordinary Medusæ, are always, when adult, either male or female. When considering in detail the structure and mode of reproduction of the Acalephs, I shall have occasion fully and conclusively to show that the parts generally considered as generative organs in the Hydroids are truly individual animals, in every way homologous to true Medusæ, and themselves provided with the sexual organs that are wanting in the Hydroids. For the present I must limit myself to the assertion that it is so.

As to the homology between Polyps and Acalephs, it must be apparent, from what precedes, that the comparisons which have been instituted between them are not accurate. If the central opening between the tentacles of the Polyps is not homologous to the so-called mouth of the Acalephs, but simply an aperture arising from such an inversion of the body-wall that the opening at the bottom of the digestive cavity is in reality the external opening of the body, it is plain that the name *mouth* has been applied to very different parts in these animals. It must further appear, that, from the position of this opening and its relation to the whole structure of the animal, the name *mouth* can hardly be applied to it. Indeed, the more we study the lower animals, the more are we impressed with the imperfection of the nomenclature used to designate their parts. To me it now seems quite inappropriate to designate the opening through which the food is introduced into the body by the same name in all animals. Since the study of homologies has become a safe guide in the appreciation of the true nature of the parts of an animal, I can no longer see why we should use the name *mouth* to designate a simple opening in the centre of a radiated structure, when that name was originally applied to a cavity circumscribed by a bony frame, with a muscular