and places the interior of the umbrella in free communication with the surrounding water.

This account of the development of the Medusa-bud agrees in almost all points with that previously given by Agassiz, who regarded the radial canals of the umbrella as the result of the non-adhesion of the two layers of the endodermal cup along definite longitudinal lines, while it differs from the view formerly urged by myself, in which I regarded the radial canals as growing out in the form of tubular processes from the basis of the manubrium.

The theory of the formation of the canals by arrested adhesion of the two endodermal layers along the lines of these canals will satisfactorily explain the phenomena, and the truth of this explanation seems to be placed beyond doubt by the discovery of the endoderm lamella shown by the Hertwigs to exist as a persistent structure in the umbrella of the Medusa.

It must not be supposed, however, that radial canals are never formed by an outgrowth of tubes from the base of the manubrium into the walls of the umbrella. Though the primary canals may be always formed as described above, there are instances (*Æquorea*, &c.) in which the canals increase in number after the detachment of the Medusa, and in such cases it is certain that the newly formed canals extend themselves in the umbrella walls from the base of the manubrium in order to open into the circular canal round the margin.[1]

The formation of the medusoid also takes place through the medium of an endocodon, and is similar to that just described for the Medusa, except in the fact that the radiating canals are in most cases entirely suppressed, and that in those rare instances in which they may be seen in a rudimental or even completely developed form the umbrella does not present the wide codonostome of the Medusa, and is not developed so as to be employed as an organ of natation.

In the sporosac, on the other hand, the development does not take place through the formation of an endocodon, and no endoderm lamella being formed, the walls of the sac retain the condition presented in the early stages of the bud, being simply composed of two layers, an internal endodermal layer, and an external ectodermal layer, these two being subsequently separated by the presence between them of the generative products.

Between the medusoids and those gonophores, which as planoblasts have attained the condition of true Craspedote Medusæ, there is a close parallelism, the various parts in the one having their representatives in a more or less modified form in the other. In the medusoid, passing from without inwards, we meet with the following layers:— Most externally a layer of ectoderm; then a thin lamina of endoderm in which gastrovascular canals may or may not be developed, and which though present in the early stages of the bud is not always demonstrable in the mature gonophore. To this

[1] Gymnoblastic Hydroids, p. 79, fig. 35.