

tentacles; besides the marginal, one oral tentacle and one intermediary are placed on the disc. In the intra-mesenterial chamber of the second order the former (oral) was wanting; in those of the third order, the intermediary tentacle was also wanting, or rather was replaced by a peripheral tentacle. From all the inter-mesenterial chambers, and also from the supernumerary intra-mesenterial chamber, spring only marginal tentacles.

Histologically our *Corynactis* is closely related to the *Corallimorphi*. The mesogloea is homogeneous, branched stellate cells are richly scattered in it, while the modified bladder cells, which occur in *Corallimorphus obtectus*, are wanting. Beneath the endoderm runs a fibrous layer, sometimes closely under it, sometimes separated from it by a homogeneous layer, giving off bundles which run to the endodermal surface. The musculature of the oral disc and tentacles is weak and ectodermal; there is no special sphincter, and the mesenteries are provided with only weak muscles on both sides. On the other hand, I was surprised at the occurrence of longitudinal muscles on the outer side of the body-wall. They are not very strong, and are mostly composed of short spindle-shaped fibres, the lamella being always slightly pleated here and there. This discovery made it necessary to study *Corallimorphus obtectus* anew, with reference to the body-wall. The epithelium having been preserved only at exceedingly few spots, constituted the reason why I had not previously observed the muscle, but a renewed study yielded figures by which I arrived at the following definite opinion, based on numerous preparations from different parts of the body.

At the basis of each epithelial cell lies a small body, staining in carmine, and resembling, in sections accurately transverse to it, a muscle fibril. If the section be taken at an angle of about 30°, these bodies appear elongated and somewhat spindle-shaped; but I have seen no such obvious longitudinal fibres as in *Corynactis*. I am therefore of opinion that *Corallimorphus* possesses longitudinal muscles, but that they are extremely rudimentary.

The observation of ectodermal longitudinal muscles on the body-wall of *Corynactis* is an exceptionally interesting discovery. Among all Anthozoa, we know of a similar condition in *Cerianthus* alone, and, as I may here mention, anticipating future investigation, in *Arachnactis*, a genus very closely allied to *Cerianthus*: while in the typical Anthozoa the ectodermal musculature is confined to the tentacles, the oral disc, and the stomatodæum. On the other hand, all Hydroids in the hydra-form (i.e. Hydroid-polypes and Scyphostomæ) possess ectodermal longitudinal muscles of the body-wall, which are prolonged directly into the tentacles and oral disc (peristome). We have here, throughout the whole body, circular muscles on the endodermal side, and longitudinal, i.e. radial, on the ectodermal.

On the ground of previous researches on the sexual organs, I have published the view, since defended by Götte, that the Scyphomedusæ are ancestral forms of the