

cates by tubular offsets with the axial cavities of the tentacles, and at the periphery of its base it becomes continuous with the cavities of four large canals. These canals subdivide almost immediately into smaller trunks which anastomose with the general cœnosarcal meshwork.

The gastrozooids are structurally composed of the same number of layers as the dactylozooids. The ectoderm forms on these zooids a somewhat thinner layer than on the dactylozooids. Definite cell structure was not made out in it. It is, however, full of nuclei, and is no doubt definitely cellular in the living condition. It is not, as in the case of the dactylozooids, thickly beset with nematocysts, but contains very few of these bodies (Pl. X. figs. 1 and 5).

On the inner surface of the ectoderm, in combination with the basement membrane, occurs a muscular layer which is very highly developed. The layer is composed of a series of longitudinally disposed muscular slips, which are set side by side with narrow interspaces, so as to form a thick layer (Pl. X. fig. 6). This layer is extremely thick and dense towards the base of the zooid, as will be seen from Plate III. M, and becomes gradually thinner and less conspicuous towards the hypostome. The muscular slips are stout and closely set towards the base of the zooid, and are prominent objects in transverse sections of it in that region (Pl. X. fig. 5), whilst they are widely separate and fine and far less numerous towards the upper regions of the zooid (Pl. X. fig. 1, M), where little is to be seen but the transparent basement membrane. The muscular slips are composed of very distinctly differentiated cells which have mostly a fusiform shape (Pl. X. fig. 8), with the tails of the cells usually somewhat bent. Many cells are found to occur amongst the mass which are apparently in the act of division, two fusiform bodies being connected together by a string, or broad mass, of protoplasm. Such cells are so numerous that possibly a considerable proportion of the muscular elements remain permanently in this compound condition. The cells are closely fitted together side by side to form the muscular slips which, where most developed, have a breadth of three or four cells (Pl. X. fig. 7).

The longitudinal muscular slips pass from the basis of the zooids to spread out beneath the ectoderm of the four main canals of the cœnosarc in which the cavities of the zooids terminate inferiorly.

Fused with the muscular layer occurs, as in the dactylozooids, a continuous layer of membrane. This basement membrane is transparent, and the only structure which I have seen in it is a striation transverse to the longer axis of the zooids, which, as already stated in reference to the dactylozooids, I at first believed to give evidence of the existence of circular muscular fibres in the zooids. Such fibres I have, however, been unable to discover on closer examination.

Beneath the membranous layer lies the endoderm. This is composed, towards the