

between the distal ends of the hyaline gland cells, and sometimes nearly reach to the base of the layer. The outline of the individual cells is, however, not well defined in borax-carminé preparations. In sections stained with hæmatoxylin the appearance is quite different, and some of the small granular gland cells are well defined. In such cases the structure of the stomodæal ectoderm closely resembles that of Actiniaria, excepting for the apparent absence of nematocysts. The surface of the stomodæum is composed of slender, ribbon-like, ciliated cells, usually separated from one another by delicate, thread-like, sensory cells. The nuclei of both these types of cells are situated about the middle of the layer, and on account of their great affinity for the stain, appear as an irregular dark band across the middle of the ectoderm. Just beneath the surface numerous small oval gland cells are pushed in between the ciliated "Stützzellen" at irregular intervals. These vary from 8.75 to 10.3  $\mu$  in length, and from 3.2 to 6.75  $\mu$  in breadth. They stain deeply in hæmatoxylin, and are seen to be filled with comparatively large rounded granules. On this account this type of cell will be distinguished as the granular gland cells. The granular gland cells appear to be connected by a delicate stalk or fibre to the base of the ectoderm. Between the proximal ends of the non-glandular cells, large, oval, hyaline gland cells occur in considerable numbers, forming the chief feature of the lower portion of the epithelial layer of the ectoderm, and resting directly on the nervous layer. The hyaline gland cells vary from 24.3 to 37.5  $\mu$  in length, and from 10.7 to 12.5  $\mu$  in breadth. No ectodermal muscular fibres have been observed in the stomodæum.

*Mesoglaea*.—The mesoglaea in Actiniaria consists of a moderately thick layer, presenting a uniform ground substance in which numerous fibres are distributed. In Hexactiniæ the layer also includes numerous stellate or spindle-shaped connective-tissue cells, but these are either absent altogether or much reduced in importance in Cerianthidæ and Zoanthidæ. In the Antipathinæ the mesoglaea is usually very thin, and does not contain any stellate or spindle-shaped connective-tissue cells. In *Antipathella subpinnata* this layer has an average thickness of 3  $\mu$  in the tentacles, and does not attain a greater thickness than 9  $\mu$  in any part of the polyp. It usually appears structureless in section, but sometimes irregular longitudinal lines may be recognised within its substance. These may indicate the presence of fibres, or may, perhaps, be due to the action of hardening reagents. In any case such striations do not appear to be always present.

*Entoderm*.—In Actiniaria the entoderm consists largely of a layer of cylindrical epithelial cells in which symbiotic Algæ are frequently imbedded. Each epithelial cell is intimately connected at its base with a slender muscular filament. A few nematocysts are also present, and also a variable supply of hyaline and granular gland cells. Whilst a distinct nervous layer is not always demonstrable, the whole of the epithelial cells appear to end basalwards in muscular or nervous threads, and thus constitute more