indicate the presence of ectodermal muscular fibres in this species. In some cases, in transverse vertical sections stained in borax-carmine, I have noticed at the base of the ectoderm of the body-wall what appear to be a few slender muscular fibres cut rather obliquely, but the point requires further study. It is interesting to note that this is precisely that part of the ectoderm which does not contain a muscular layer in Actiniaria according to the brothers Hertwig. Such a layer is undoubtedly present in the ectoderm of the body-wall of *Antipathes dichotoma* (*cf.* Pl. XIV. fig. 6, *f*), and other forms, and may therefore be presumed to have a greater or less development in *Antipathella*.

I have failed to recognise any ciliated epithelial cells (Stützzellen) in the external ectoderm of *Antipathella subpinnata*, but such cells appear to be present in the ectoderm of the stomodæum, although they are not recognisable in borax-carmine preparations. The surface of the ectoderm is probably ciliated, but it is difficult to study such points in specimens which have been preserved for a long time in strong spirit.

Stomodæum.—In Actiniaria the ectoderm of the stomodæum has a similar general structure to that of the peristome, but the muscular layer is absent. The epithelial layer is of considerable thickness, but is only one-layered, and contains "Stützzellen," nematocysts, and two kinds of gland cells. The nervous layer is readily recognised, but the ganglia are not numerous. The stomodæum of *Antipathella subpinnata* presents an interesting structure, and differs in one or two important points from that of Actiniaria. In the first place, nematocysts are entirely, or almost entirely, absent. The stomodæum of Antipathinæ may readily be distinguished from the ectoderm of the external surface, on account of the fact that it stains more deeply with borax-carmine or hæmatoxylin than any other portion of a section, with the exception of the free margins of the mesenterial filaments. The ectoderm consists here chiefly of two kinds of glandular cells, the one hyaline, the other densely stained. In borax-carmine preparations (Pl. XIII. fig. 10) the greater part of the layer is seen to be occupied by large oval hyaline gland cells, each with a deeply-stained nucleus. They rest on a delicate layer of nerve-fibres adjoining the mesoglœa, and fill up the lower half or two-thirds of the epithelial layer. The cell plasma does not stain, but here and there indications of a semigranular coagulum may be noticed. Thread-like cells are placed between the large gland cells, as in the ectoderm of the tentacles and body-wall, but are not so easily seen. The hyaline cells are similar to those in the epithelial layer of the tentacles, but are broader, and do not usually reach the surface. The surface of the ectoderm in this region is apparently occupied by a large number of small lens-shaped cells, which stain very deeply in borax-carmine; some of them belong to a second and smaller type of gland cell filled with granules. In many cases wedge-shaped clusters of these small and deeply-stained cells extend for some distance