

The stomodæum is similar in structure to that of *Parantipathes larix*. An ectodermal muscular layer has not been observed in the stomodæum.

Mesoglaea.—In *Aphanipathes sarothamnoides* the mesoglaea is unusually thick, and in *Aphanipathes cancellata*, the zooids of which are smaller, it appears to have a similar relative development. In the former species it has an average thickness of 28 μ . This layer appears to be especially thickened in the peristome and body-wall and also in the interzooidal areas (*cf.* Pl. XIV. fig. 2). The mesoglaea is, however, homogeneous throughout, and no fibres or connective-tissue cells have been observed within it, such as occur in that of *Cladopathes plumosa* and many Actiniaria.

Entoderm.—The entoderm varies from 11 to 28 μ in thickness, and presents no features of especial interest. It appears to consist largely of small cubical cells, and is not so richly supplied with hyaline gland cells as that of many other genera. An entodermal muscular layer has not been observed.

Pteropathes fragilis.

The stomodæum of this species is very much folded, and may be best studied by means of a series of horizontal sections. In the upper portion of the oral cone there are usually eight radiating folds, and the lumen is longer in the transverse than in the sagittal axis. At a lower level the lateral folds are much more pronounced, and one or two near each extremity of the sagittal axis become much elongated and are curved inwards, so as to take up a transverse position. Each fold contains a lumen which communicates with the general stomodæal cavity, but this is usually very narrow, and the ectodermal walls are often in contact. In the middle section of the stomodæum the lumen becomes narrowed, and is much elongated in the sagittal axis, so that the directive mesenteries have only a short course in this region. An oblique section of the stomodæum is shown in Pl. XIV. fig. 4, which also shows one pair of directive mesenteries. I am not aware of the existence of such a complicated system of folds in the stomodæum of any other Antipatharian.

Ectoderm.—The ectoderm of the tentacles is papillose, and the papillæ are frequently constricted at the base and appear club-shaped in transverse sections. Each papilla contains a central battery of elongate nematocysts, and a number of large granular gland cells are distributed irregularly around the periphery. The gland cells of the surface ectoderm stain more deeply in hæmatoxylin than those of any other part. Ectodermal muscular fibres are present, but not very well developed.

In the stomodæum the surface layer consists chiefly of ribbon-like "Stützzellen" and slender fibres, both of which apparently extend from the surface to the nervous layer adjoining the mesoglaea. The former appear to have the nuclei contained within the surface dilation of protoplasm, whilst the nuclei of the fibrous cells usually occupy the