

almost invariably collected into batteries, as in many Madreporaria. Such an arrangement of the nematocysts is not usual in the Actiniaria, but is found in the marginal spherules of certain forms. The batteries of nematocysts are usually surrounded by a more or less complete ring of gland cells. The gland cells may be either hyaline or granular, but the two types are apparently not found in the same species. A nervous layer connected with a row of slender fibres, which are probably sensory in function, is always present near the base of the ectoderm, and ganglia have been demonstrated in it in many instances. An ectodermal muscular layer is apparently always present, but has a variable development. In some genera it is quite unimportant, whereas in others (*e.g.*, *Leiopathes* and *Cirripathes*) the fibres are of considerable thickness and are applied to the dentate surface of the mesogloea, so that the layer is then somewhat convoluted. The ciliated epithelial cells (Stützzellen) do not form so important a feature of the ectoderm as is the case in Hexactiniæ. The ectoderm of the stomodæum is, so far as my observations go, entirely devoid of nematocysts. It contains granular gland cells of variable size and usually also a number of the hyaline type, which are situated near the base of the layer. The "Stützzellen" are here more important, and are separated from one another by elongate fibrous cells. Unlike the Hexactiniæ the stomodæal ectoderm of Antipathinæ frequently has a muscular layer at its base. A similar layer is also generally present on the body-wall beneath the insertion of the tentacles, in that part namely, where, according to the researches of the Hertwigs, ectodermal muscular fibres are absent in Hexactiniæ.

The *mesogloea* has a similar structure in all the Antipathinæ examined. It consists of a hyaline or subfibrous layer of variable thickness, and has never been observed to contain isolated connective-tissue cells as in Hexactiniæ. In Cerianthidæ these rounded or stellate connective-tissue cells are, however, rare. In *Cladopathes*, amongst the Schizopathinæ, the mesogloea is relatively very thick, and is furnished with isolated stellate cells of the Actinian type.

The *entoderm* usually contains only the hyaline type of gland cells. Apparently the glandular elements are more numerous than in Hexactiniæ, and the Stützzellen are less so. The surface of the entoderm frequently consists of an irregular cubical epithelium similar to that of many Madreporaria. No nematocysts have ever been observed in any part of the entoderm. The nervous layer is apparently always represented, but the entodermal muscular system may be rudimentary or absent. In most types the inner surface of the mesogloea is flat, and a more or less important layer of entodermal muscular fibres may be applied to it, which appears first recognisable in vertical sections of the stomodæum. In *Leiopathes* and *Cirripathes* the inner (as well as the outer) margin of the mesogloea is dentate, and bears a more or less convoluted layer of entodermal muscular fibres. These are the only genera in which an approach to the entodermal muscular system of Hexactiniæ has been observed. No muscular fibres have as yet been observed in the