

from 1.3 to 11  $\mu$  in breadth. Between the clusters of hyaline cells, and only rarely occupying the most prominent part of a ridge, bundles or batteries of nematocysts occur, which are usually arranged in well-defined groups. The nematocysts are slender spindle-shaped cells varying from 14.9 to 16.7  $\mu$  in length, and about 2  $\mu$  in diameter. They extend from the surface to about the middle of the ectoderm; those forming one battery may be subparallel, or their distal ends may be closely pressed together so as to form a fan-shaped group. Extremely delicate fibres may frequently be distinguished between the nematocysts, which probably reach the surface, but this is difficult to make out in sections. Beneath the nematocysts the fibrous cells are seen to be more numerous; each contains a round or oval nucleus, which stains deeply. On this account the ectoderm appears in sections to be divided into alternate dark and light areas, the former corresponding to the nematocysts and the nucleated fibres, which extend beneath them to the base of the layer. The nematocysts are most numerous near the apex of a tentacle, where only one or two hyaline cells are interposed between each group. Lower down the nematocysts are more distinctly collected into batteries. In this species the hyaline cells usually project somewhat beyond the batteries of nematocysts, and so form the most prominent part of the ectoderm. Towards the middle of the body-wall the elevated ridges become lost, and the batteries of nematocysts are considerably larger. The deeply-stained nuclei beneath them are numerous, round or elongate, and are frequently pressed in between the nematocysts. It appears probable that these may represent young nematocysts in the process of differentiation. Some of them show a division of the chromatin into transverse bands. The formation of new nematocysts in such a position has already been observed by Jourdan in Actiniaria.

The ectoderm of the peristome and oral cone is not papillose, but has a similar thickness to that of the tentacles. The batteries of nematocysts are here smaller and more distant. Between them, and apparently connected with the hyaline gland cells, a number of sensory threads occur, which are connected with nucleated ganglia situated near the base of the ectoderm. Similar ganglia have not been observed in the ectoderm of the tentacles, but it is probable that they may have been overlooked. So far as could be ascertained the arrangement of the nervous elements is similar to that of Actiniaria, but it is desirable that this point should be studied further from specially prepared material.

Towards the base of a polyp the ectoderm becomes gradually reduced in thickness, and its surface is quite smooth. The tendency of the nematocysts and hyaline gland cells to become collected into alternate groups, which is so well marked in the tentacles and upper portion of the body-wall, is here scarcely noticeable, and the appearance presented is therefore more readily comparable with the usual condition in Actiniaria.

The ectodermal muscular system of *Antipathella subpinnata* appears to be extremely rudimentary, indeed, I have rarely recognised any appearance which might