

parts are very differently constituted. The former, which is the only part externally visible, is covered with transverse wrinkles, crossed here and there with longitudinal furrows. It terminates above in twelve knobs which are placed like a corona round the entrance to the orifice of invagination, and lie close together so as to greatly contract the opening.

In order to understand the construction of the upper part, it is necessary to open up the animal longitudinally, then we see that it extends about 1 cm. inside the animal; it is covered with twelve strongly projecting sharp-edged longitudinal ridges, which begin at the twelve knobs, become higher as they run downwards (upwards in the natural position), till each of them ends in a nose-like projection. This projection is again divided by a longitudinal furrow into a larger and a smaller process. The ridges and their bifurcated ends are extremely smooth, very soft, and of a whitish colour. They consist, however, only of connective tissue, like the rest of the wall.

The varied aspect of the surface of the body is caused by the varying character of the epithelium; on the invaginated part of the wall (Pl. VI. fig. 5) it is a ciliated cylindrical epithelium, such as we find in most Actiniæ; in the other parts it is without cilia, but instead of cilia is covered with a deposit, which may be divided into two layers. One of these (Pl. VIII. fig. 1) is an irregular, fibrous cuticle, which is stained an intense red by carmine, the other is a mucous layer permeated by foreign bodies, lying outside the cuticle.

The mesoderm consists of extremely fine fibrillæ which cross one another in all directions, so that it appears as a finely granulated mass in transverse section. It is partially laid in strata parallel to the surface; in it there are small roundish concretions, which are strongly coloured by carmine, and the structure of which recalls that of granules of starch; they are made up of indistinct concentric layers, frequently appear in section like a figure 8, and are limited to the superficial layer of the mesoderm.

The existence of a strong circular muscle, which is indeed easily discovered, might be inferred merely from the high degree of contraction. It is mesodermal, and the chief bulk of it lies in the invaginated section of the wall, where it begins close to the commencement of the oral disk, or, to speak more accurately, to the origin of the tentacles (Pl. VI. fig. 5); it extends a considerable way into the outer section of the wall, into which it gradually passes. It is separated from the endoderm by a broad layer of connective substance, so that it lies nearer to the ectoderm than to its place of origin, and consists of numerous very small bundles of fibrillæ grouped together into bundles of the second order (Pl. VIII. fig. 10). The latter are usually flattened, and in transverse section show bands lying perpendicular to the surface of the endoderm.

The compartment of the oral disk is the same as that formerly described in *Calliactis parasitica*. The muscular fibres are still chiefly ectodermal, and the lamella is not thickly pleated, though at the same time single fibrillæ and groups of fibrillæ have passed into the mesoderm. The boundary line between the mesoderm and the ectoderm is therefore indistinct as in *Calliactis*.