

that the epithelium of the body-surface sinks like a funnel into the mesoderm, where it is prolonged into a broad or narrow canal which soon begins to throw out branches (fig. 2).

The ectodermal epithelium is covered by a fibrous cuticle, which recalls the "epidermis" of *Phellia pectinata* and *Cereus spinosus*. The endodermal epithelium has produced a thin, circular muscular layer, and is traversed by small, roundish, sharply-contoured bodies. I consider these bodies as parasitic, unicellular organisms of the same kind as those which my brother and I have already observed in various species of Actiniæ. There was no visible trace of the usual yellowish and greenish colour, but this was probably owing to the preservation in spirit.

In the inverted part of the wall I found a sphincter of a very peculiar nature (Pl. XIV. fig. 1). It consists of two perfectly separate portions, a larger, which begins at the outer part of the wall, bends round at the inverted edge, and extends a little way into the invaginated part, and a smaller, which lies at the boundary between the wall and the oral disk. When the animal is expanded, this second portion of the sphincter will lie above the larger portion of the muscle; when the animal is contracted it occupies the lowest part of the invaginated wall. A space without muscles, which does not contract, and, therefore, becomes pleated, lies between the two portions.

Both parts of the sphincter are mesodermal and placed at an equal distance from the endoderm and the ectoderm; their bundles of fibrillæ are arranged irregularly and repeatedly crossed and interwoven in their course, so that the same transverse section passes obliquely through some, transversely through others. The bulk of them lies in the inverted part of the wall, whilst the muscles merely form a thin layer in the outer part of the wall.

The oral disk bears a double corona of small tentacles, corresponding in number to the septa, in that part of its periphery which is contiguous to the wall. The inner tentacles communicate with the intraseptal spaces, the outer tentacles with the interseptal spaces, the two are therefore placed alternately. The muscular system of the oral disk and of the tentacles is ectodermal and extended in a smooth layer.

The distribution of the muscles can be very well recognised in the septa of the strongly contracted polyps. The longitudinal muscular lamella is pleated both in the small rudimentary septa and in the large septa so as to form a small muscular pennon, whilst the fibrillæ which rise obliquely are less strongly developed (Pl. XIV. fig. 2). The paired grouping of the septa is consequently very distinct, and we can also easily distinguish the two pairs of directive septa from the ordinary pairs. The number of the latter varies according to the size of the animal. In the largest polyp examined, there were in all twenty-nine pairs of septa (Pl. XIV. fig. 3). Of the two pairs of opposite directive septa, one pair is rudimentary, does not bear mesenteric filaments, and does not reach the œsophagus, whilst the other pair is perfect, bears mesenteric filaments,