

which is thin as paper, and through which the insertions of more than one hundred and fifty septa are visible. The cinclides form a single circle at a little distance from the pedal disk; they are placed irregularly, sometimes higher, sometimes lower and closer to the disk. Their walls rise above the surface in places like an hour-glass; where this is not the case they cannot be seen from the surface, and only become visible after the superficial layer of the wall has been removed by a section parallel to the surface in the manner already specified. Their number seemed to amount invariably to twenty-four; they open into the intraseptal spaces of the first three orders of septa.

The circular muscle at the upper end traverses the entire mass of the wall, which is trebly thickened at this point, but is separated from the endoderm by a narrow layer of connective substance, from the ectoderm by a rather broader layer of connective substance; it is most powerful in the middle, and becomes weaker above and below; above, it reaches as far as the origin of the oral disk, where at the same time it most closely approaches the two layers of epithelium.

The bundles of muscular fibrillæ show a tendency to arrangement in parallel layers, placed one above the other as in *Phellia pectinata* (Pl. VI. fig. 5) and *Cereus spinosus* (Pl. VI. fig. 1), though not so distinctly as in the latter species. Each layer again consists of a number of smaller and larger groups of bundles of fibrillæ, placed in a line one behind the other, and each bundle, in transverse section, is divided by constrictions of its surface into lobes which are sometimes more, sometimes less distinctly separated from one another. The muscular fibres which occupy the periphery and enclose the protoplasmic axis in an undulating layer, are of medium strength.

The arrangement of the bundles of fibrillæ in layers becomes less distinct above and below; above, because the bundles are so pressed together that only a scanty framework of the separating connective tissue trabeculæ remains; and below, because, on the other hand, the bundles become very small and are isolated from one another. Finally, the bundles of fibrillæ become flatter from the outside towards the inside, but this is merely in consequence of the contraction of the animal.

The circular muscle of *Calliactis polypus* described above, is chiefly distinguished from the circular muscle of *Calliactis parasitica*, which we have already investigated (*Actinien*, p. 180), by not being divided into two distinct parts. There are also differences in the muscular system, which enable us to distinguish the two species in a preserved condition. I refer to the radial muscles of the oral disk, and to the similarly constructed longitudinal muscles of the tentacles.

The radial muscular fibres in *Calliactis polypus* form a thick layer which is always thinned away above the insertions of the larger septa, and so divided into broader and narrower radial bands. Their figure in transverse section is difficult to make out; at first sight it gives the impression that masses of compacted muscular fibres, placed in repeated layers the one above the other, have been deposited between the