

spots. The supporting lamella projects like a papilla, and so reaches within a little distance of the cuticle, and the epithelial cells are shortened correspondingly, but thickly compacted; their bases sink a little way into the supporting lamella, so that the contour of the latter is notched, whilst at the same time they converge from their broader basis towards a small spot of the cuticle which has a different appearance. The outer cuticular layer pierces the inner layer, and extends to the top of the epithelial cells; it thus forms a conical projection, the central part of which is stained deep red by carmine, whilst the periphery only preserves the yellower colour, so on the whole it shows in transverse section the figure given in Plate XIII. fig. 1.

The cone of the outer cuticular layer is sometimes forced apart from the epithelium by a thin stratum of the inner layer (fig. 8), but in this case the projection of the supporting lamella is also wanting, and the epithelium has the same nature as usual.

I consider myself justified in explaining the conditions of structure of the cuticle described above by the supposition that the cuticle undergoes a periodical change, a kind of desquamation. The outer, yellow layer is the hardened cuticle; this probably becomes detached after a time, and is replaced by the inner cuticle, which stains so easily in carmine. The circumscribed spots at which the yellow cuticle reaches the epithelium, indicate the points at which it is more firmly attached to the surface of the body; they are the fastening nodes of the cuticle. The connection is gradually dissolved when the yellow layer is forced apart by a fresh layer, even from the points of attachment to the epithelium, in the manner just described.

The number of the fastening nodes in each transverse section is very large; I counted more than twenty in one section, including those in process of retrograde formation, all on the whole of equal size. I also examined these peculiar formations in longitudinal sections, and found the same figures as in transverse sections. I lay stress on this fact as it proves that we are not dealing with long streaks.

The cuticle passes on to the inverted part of the wall, which in the contracted animal projects downwards more than 0.5 cm. into the inside of the body; it becomes thinner, especially the superficial yellow layer.

A sharply defined circular muscle, such as I have described in most true Actiniæ, is wanting in *Scytophorus striatus*; instead of it, there is a peculiar differentiation of the endodermal layer of muscular fibres. The layer of fibrillæ is raised at short intervals into folds, which are strengthened by the supporting substance, and produce branched figures in transverse section. These bushes of muscles, which are covered by epithelium only, project freely into the gastric space: they are most strongly developed in the upper contracted and inverted section of the wall, where they are thickly branched and placed closely together so as to replace the absent sphincter.

The ectodermal muscular fibres of the small oral disk and its, to all appearance, equally small tentacles are very weak. The tentacles partly hang down into the œsophagus, are