The same questions recur in the tentacles, which are merely evaginations of the oral disk. Here the endodermal circular muscular fibres are always uniform, whilst the ectodermal longitudinal cords vary. Moreover, there are usually, if not always, openings present in the tentacles through which water is ejected when the animal becomes contracted; they occupy the point of the tentacles, and are easily observed in the living animal. In order to find them out in the spirit material I fastened a tentacle, which had been cut off, to a tube and inflated it with air under water; if an opening were present the air bubbled out through it.

According to their shape the tentacles are distinguished as "knobbed," "club-shaped," "branched," "conical," &c., terms which do not require further explanation. Their mode of arrangement, of which I shall speak in connection with the septa, is also of importance. On the other hand, their length and shortness is a characteristic which is not capable of exact definition, and cannot be determined with any certainty in the spirit specimens, as it is impossible to judge to what extent the length has been influenced by a greater or lesser degree of contraction. This characteristic cannot, however, be dispensed with for systematic purposes.

Whether the tentacles in the Actiniæ may be entirely wanting, without being morphologically replaced in some way or another, seems to me questionable, as no such case is known up to the present time. The tentacles may, however, undergo a peculiar retrograde metamorphosis, progressing so far that only the terminal opening is left in the form of a fissure, which is enclosed by thickened lips, and, lying in the periphery of the oral disk, shows the spot where we might have expected to find the tentacle. I have observed different stages of this retrograde formation in species of Actiniæ coming from great depths. We see the beginning of it in *Polysiphonia tuberosa* (Pl. II. figs. 7, 9), also *Sicyonis crassa* (Pl. IV. fig. 4), and the advanced stages in *Polyopis striata* (Pl. II. fig. 11), and *Polystomidium patens* (Pl. V. fig. 6).

The oral opening is only exceptionally round; it has usually the form of a fissure whose longitudinal diameter lies in the same direction in all Anthozoa. It is therefore of the greatest importance for distinguishing the axes which may be drawn through the body of the Actiniæ. If the Actiniæ were animals possessing perfect radial symmetry, then the longitudinal axis, determined by its passing through the oral and aboral poles, would be the only constant one, and all radial axes lying perpendicular to the longitudinal would then be perfectly equivalent to one another. By the constant form of the oral opening, the radially symmetrical fundamental form becomes more definite, and is at least transformed into the biradially symmetrical form. In all cases, two of the radial axes strike us as specially distinguishable, the sagittal axis running in the direction of the oral fissure, and the transverse axis perpendicular to it. We can even exceptionally recognise a dorsal and a ventral side at the ends of the sagittal axis, and a right and a left side at the ends of the transverse axis, and hence the