inferred that its diameter is here considerably greater than that of the two openings. The radial mesodermal muscle-fibres pass into its walls with a longitudinal trend.

On the stomatodæum are placed the two siphonoglyphes, which are of a very characteristic appearance, as being more powerfully developed than in any Actinia which I have as yet seen; each projects over the mouth edge and upwards with two long ear-shaped cones. The groove itself is correspondingly deep and broad, pleated, and of a cartilaginous consistence. Between the two siphonoglyphes run on each side about ten strongly-marked longitudinal ridges, terminating in rounded knobs on the lip.

In investigating the mesenteries, I could at least prove their arrangement in pairs, but could not convince myself that the Hexactinian symmetry was carried out. Neither by microscopic preparations of a sector, nor by dissection of individual mesenteries, could I arrive at a definite law of arrangement; this point therefore requires investigation.

The mesenteries dissected bore no generative organs; these appeared to me to be confined entirely to one mesentery, and to possess a tubular structure unparalleled in the whole class of Anthozoa, a fact which decided me to choose for the genus the name *Aulorchis*. Even before dissection it had struck me that at a spot on the edge of the lip, and by a pore specially present for the purpose, was the opening of a cylindrical organ; this organ had obviously once been longer, as at its end a fracture was clearly recognisable. By splitting up the opening and the adjacent stomatodæum, the organ, which I will term in future, for reasons to be mentioned, the genital tube, could be clearly followed into an inter-mesenterial chamber (Pl. I. fig. 9). It meets one of the complete mesenteries, lies at this point embedded in the tangle of mesenterial coils, and, as appeared later from sections, ends at the mesentery in a horseshoe-shaped curve. The curved portion was firmly united with the mesentery. Transverse sections yielded further conclusions relative to its structure; but, unfortunately, owing to bad preservation, no exhaustive account of this is possible. For instance, I have not been so fortunate as to determine how far the structure of the genital tube can be referred to that of the ordinary Actinian ovary (Pl. IV. figs. 1–6).

The genital tube is superficially clothed by epithelium, which is limited externally by a border resembling a cuticle, but perhaps produced only by mucous secretion; then follows the mesoglœa with the ova embedded in it; internal to these lies a cavity, more or less spacious according to the mass of the ova. The mesoglœa is divided by a narrow granular layer into inner and outer zones, which here and there, by failure of the intermediate layer, join together. The outer zone is narrow, and exhibits what appear to me to be circular muscle-fibres referable to the epithelium, which in longitudinal sections through the organ (fig. 3) resemble narrow laminæ placed close together. The state of preservation was inadequate for the determination of the histological character of the granular median layer; in transverse