

but he was unable to satisfy himself upon this point. The Naples variety of *Antedon rosacea*, upon which he worked, is about the worst type that could have been chosen for delicate observations of this kind, the quantity and character of the pigment-granules which the lip contains almost totally obscuring the other tissues.

This pigment-substance is altogether different from the yellow and brown pigment masses so common in all Echinoderms. It is apparently related to the calcareous spicules which are so abundant in the under part of the perisome and in the intervisceral connective tissue. When these have been removed by acid their outlines are seen to be well defined by streaks of pigment-granules, which appear black by transmitted, and yellowish-white by reflected, light. They are especially abundant in the lip, and in some individuals almost entirely conceal the blood-vascular plexus which it contains;¹ while in specimens from other localities, and in *Antedon eschrichti*, it is scarcely developed at all, and I have found no difficulty in tracing the connection of the plexiform gland with the oral ring. This is very evident in all the other Comatulæ, including *Antedon*, *Actinometra*, and *Promachocrinus*, which I have examined, as well as in *Pentacrinus* (Pl. LVII. fig. 3; Pl. LXII.).

The branching tubules depending from the oral ring which much resemble the visceral blood-vessels, open into a dense plexus of more glandular looking tubules that is supported by connective tissue, and extends right round the lip (Pl. LVII. figs. 1, 3, 4; Pl. LIX. fig. 5; Pl. LX. figs. 1, 2, 4—*lp*).

It is connected with (1) the ventral branches of the plexiform gland (Pl. LVII. fig. 3, *xv*); (2) with the genital vessels of the rays (Pl. LX. figs. 1, 2, *gv*); and (3) with some of the intervisceral vessels (Pl. LVII. figs. 1, 3, 4; Pl. LX. figs. 2, 3, 5, *ib*; Pl. LXII.). These last form an extensive network over the coiled digestive tube, and are also directly connected with the plexiform gland (Pl. LVII. figs. 2, 5; Pl. LVIII. fig. 6, *ib*). This labial plexus is most abundantly developed beneath the south and south-east portions of the peristome, *i.e.*, in the neighbourhood of the left posterior ambulacrum. It lies between the hind-gut forming the last coil of the digestive tube, and that part of the capacious fore-gut which lies between the two lateral ambulacra of the right side. It is always pretty sharply defined from the surrounding connective tissue, and is usually a somewhat prominent object in a well-stained section which is examined with the naked eye or a simple lens. This is partly owing to the relatively thick walls of its component tubules, and partly to the delicacy of the connective tissue holding them together. Its relations are easily made out by the study of series of transverse and longitudinal sections through the disk.

It is not very specially developed beneath the origins of the anterior and antero-lateral ambulacra, the plexiform genital vessels of which may be traced into it; though it is somewhat denser on the left (east) than on the right side, where it is connected

¹ I have found the same equally impracticable pigment in the disk of *Actinometra pectinata* from Singapore, and also in some individuals of *Actinometra parvicirra* from Bohol, although others from the same locality are totally devoid of it.