

figure at the same time reveals the presence of a conspicuous cuticula covering the free surface of the œsophageal cells. It is not streaked, as the figure erroneously indicates, but homogeneous. On it the cilia are implanted.

Concerning the behaviour of the intestine in the posterior body-regions of *Carinina*, nothing can be said, as only anterior fragments were preserved.

In *Eupolia* the œsophagus has become more independent of the body-musculature than in *Carinina*, and in addition to this a separate œsophageal musculature—at least in *Eupolia giardii*—is present (Pl. VI. fig. 9, *oe.m*). In this œsophageal muscular investment an inner longitudinal and an outer circular layer may be distinguished; between the latter and the body-wall there is the gelatinous tissue, only locally interrupted by the lacunar spaces of the vascular system (in which the nephridia [*np*] are suspended), by the dorsal blood-vessel, and by the proboscidian sheath. I mention this, because there is no evidence that this splanchnic musculature has directly evolved out of hypoblastic elements, whereas the evidence that it is enclosed in one continuous stroma with the “somatic” musculature—which in *Carinina* was the only musculature noticed—and not separated from this by a body-cavity, is very complete. It should, moreover, be remarked that where this more prominent intestinal musculature makes its appearance (certain Schizonemertea, *Eupolia giardii*, &c.), the internal circular muscular layer of the body-wall of the Carinellidæ ( $\delta$ , Pl. XI.) is no longer present in that situation. How far these two may be considered as homologous, must be left undecided as long as we do not possess more complete ontogenetical data. This œsophageal musculature was not noticed in all species of *Eupolia*, and it is certainly curious that it should be present in *Eupolia giardii*, where the body musculature is so exceptionally thick, and might be expected to serve the purpose of compressing and dilating the œsophageal wall quite as efficiently as we must suppose this body musculature to do in the Carinellidæ. M'Intosh, who detected it in *Cerebratulus corrugatus*, suggests (XXII) that the œsophageal musculature might assist in a partial protrusion of the œsophagus.

In *Eupolia nipponensis* and *Eupolia australis* this special musculature is absent, and we find, on the contrary, a much more considerable development of the deeper cellular layers of the œsophageal wall (Pl. VII. fig. 12), and a comparatively sharp demarcation between the internal ciliated epithelium (*Je*) and this thick cellular coating (*Jm*), this demarcation even sometimes rising to the importance of an apparent basement membrane (*B*). Between these cells radial fibres, starting from the body musculature, penetrate, and solitary tangential fibres may be observed, but a separate muscular investment of the œsophagus can never be shown to exist. I am not inclined to believe that this difference may be caused by the age or the size of the individual, one of the specimens of *Eupolia nipponensis* being indeed of considerable size and nearly as thick as *Eupolia giardii*.

The same deep cell-layer is met with in the œsophagus of the Schizonemertea (Pl. XIII. fig. 6), and is no doubt of glandular significance. Generally many of the