

the support of the softer tissues of the body, and especially for maintaining the shape of the vascular spaces anteriorly, and protecting the nervous masses. Its various concentrations as well as its delicate expansions are admirably adapted for the functions of the parts, and it is apparently of considerable elasticity. By its greater development it affords a contrast with the condition in *Rhabdopleura* and *Cephalodiscus*, as well as with *Loxosoma* and other members of the Entoprocta. It has not hitherto, perhaps, received that attention which it merits; indeed some, including Mr. Caldwell, refer to it only incidentally in connection with other parts as the homogeneous basement "membrane."

*Muscular System.*—Anteriorly the main concentrations of the muscular system take place in the centre of the whorls (Pl. III. figs. 1 and 2), the fibres radiating outward from the skeletogenous axial support, and thus readily controlling the volutions of the branchial fans. In longitudinal sections these muscles often present a scalariform appearance (Pl. III. fig. 1), being ranged in somewhat regular series one above another—each radiate series to its own branchial whorl. At the base of the latter, that is, when both branchial fans have amalgamated, the radiate muscles still occupy the centre, having at each side internally (*i.e.* towards the median line) the skeletogenous tissue, and externally the vascular space.

As soon as the body-wall is distinctly formed, a layer of circular muscular fibres (*cm*) is found within the basement-tissue, and these fibres subsequently attain greater development. In the region just mentioned, the radiate fibres, which pass from the body-wall between the pennate portions of the next coat to the alimentary canal, apparently perform the main contractile functions. The circular fibres continue to the posterior end, and aid, by amalgamation with others, in closing the body-wall there.

The next or longitudinal coat (*lpm*) is anteriorly (*i.e.* immediately behind the tentacles) rather irregularly arranged, being grouped as somewhat massive fasciculi, with or without intervening radiate fibres from the basement-tissue, or assuming the form of isolated bands—the precursors of the pennate fasciculi. As soon as the body-wall has a median neural ridge and two lateral, the longitudinal muscular layer forms a series of elongate and somewhat pennate fasciculi in transverse section (Pl. I. fig. 4), many being separated by the radiate fibres especially along the ventral curve. The intermediate radiate bands are often of considerable strength, and pass from the circular coat inward to the wall of the alimentary canal, and it is the arrangement of these that gives the somewhat sinuous outline to the ventral curve. A very strong band (*rm*) occurs on each side of the intestinal mesentery, and thus prominence is given to the intermediate region of the body-wall; and a similar disposition of the parts causes the lateral elevation on each side, that on the right containing a large vascular trunk. Proceeding backwards, the pennæ become less elongate in transverse section, the somewhat constricted external region or base presenting a pair of large fibres, while the ovate leaf-like