general mass is composed of smaller fibres in somewhat pinnate rows, the central region having a larger amount of translucent myolemma (Pl. I. fig. 5). Moreover, between each ovate mass a smaller bundle of longitudinal fibres exists, the tip apparently being prolonged into the radiate strands which occupy the usual position. In the succeeding part of the body the muscular layers diminish in proportionate bulk, and towards the posterior end the pennate arrangement of the longitudinal fibres disappears, and they form a comparatively thin layer under the basement-tissue, the circular fibres being internal. The arrangement of these longitudinal fibres in this region is peculiar—little spaces or lacunæ often appearing on their inner aspect (Pl. I. fig. 6). Terminally again they form a closely interwoven series, as shown in Pl. III. fig. 4, *dm*.

It is interesting to note the gradations existing between the lax pinnate arrangement of the longitudinal muscular bands in *Peachia*, the somewhat coarse pennate system in *Phoronis*, and the more finished plan of the muscles in the Eriographididæ.

In young examples the radiate muscles anteriorly are more perfectly seen than in the adult, and they fill up the body-cavity of the region to a considerable extent.

Strethill Wright was of opinion that the muscular system of *Phoronis* consists of a layer of flat longitudinal bands immediately beneath the integument, while within these a series of fine circular fibres could with difficulty be traced. He had thus probably misinterpreted the arrangement in optical section. Schneider, again, observes that the larval sac (which becomes the elongated "body" of the adult) before extrusion shows a cellular layer with nuclei, then a longitudinal coat and apparently a few small cells, followed by a transverse or circular layer. The inner coat, the future epidermis, was indistinct. Kowalewsky mentions under the epithelial layer of the body a circular coat, and an inner layer of longitudinal muscular fibres—a structure which corresponds generally with the typical condition.

A feature of considerable importance in the group is the presence of a peculiar glandular apparatus, seen in section in Pl. II. figs. 3–5, communicating with the exterior by a definite channel with well-formed walls. This structure lies quite behind the alimentary system as well as the mesenterial septa. Anteriorly it seems to end in a mass of tissue having no very definite environment in some of the preparations, and apparently having a granular glandular structure, the greater part of the area being coarsely granular, with numerous opaque bodies like folds or wrinkles towards the centre of the mass. In others, again, it leads to the posterior end of the reproductive organs. As we proceed backward, this peculiar streaked glandular region is differentiated from an outer and somewhat coarsely granular layer. The inner region then presents larger gland-cells with nuclei and granules, and the wall becomes more definite. In the condition shown in Pl. II. fig. 3, the outer surface is covered with the granular mass (probably consisting of the perivisceral corpuscles and endothelium) which is found coating the inner surface of the body-wall. Beneath are some definite circular fibres, then a