

method of grinding. The integument is composed, as was stated above, of an internal softer zone, and an external zone penetrated by accessory deposits. The latter consist mainly of clear angular fragments of sand; but there occur also various indeterminable mineral splinters of different colours, and finally, more sparingly, Sponge-spicules and Foraminiferal shells. All these particles lie confusedly mingled, and so closely together as to form a stout external rind; between them they allow of only thin mesogloea-lamellæ, in which are embedded fine nucleated fibres, as well as a few stellate mesogloéal cells. The zone of mesogloea, which is soft and free from deposits, consists of a homogeneous matrix, in which sharply circumscribed lenticular cell-islets are embedded in large numbers and of various sizes. They are especially plentiful in the neighbourhood of the endoderm; but, in passing outwards, every gradation of size, up to fine fusiform structures, is met with. The plane of the long axis of these cell-islets is always circumferential. The nucleated fibres are extremely abundant in the mesogloea; they extend from the endoderm outwards, their course being sometimes straight, but more generally undulating, with close coils almost like a cork-screw. Besides the contents already mentioned, one observes also the existence of stellate mesogloéal cells, which are sparsely scattered and emit fine processes into the homogeneous matrix.

“The supporting lamina of the mesentery is well developed, and presents an antler-like muscle-pennon. At its base passes a canal, filled with cells, and penetrating the mesenteries for their whole length; in transverse sections through the micromesenteries this appears simple and cylindrical, but forms on the macromesenteries a longer cavity divided up by cross anastomoses. This quite subordinate character accompanies the microtype through all the genera, however different both externally and anatomically; no macrotypal form showing even a trace of this mesenterial canal.

“The sphincter of *Sphenopus* is mesodermal and simple, and is so far characteristic that it commences incomparably deeper than in any other known Zoanthean; it extends so deeply downwards in the outer part of the body-wall, that, even in the contracted animal, its lowest point lies in the same horizontal plane as the lower end of the stomatodæum. In longitudinal section one can see how, at its deepest point, the bundles of fibrillæ, like small circles, are laid so closely together that they appear almost to form a continuous line. Above they are more extended, and place themselves with the long axis perpendicular to the endoderm, from which they are only separated by a narrow lamina of homogeneous mesogloea. In this condition the sphincter forms a system of bacillate fibrillæ-bundles, which are arranged extremely regularly in the form of a palisade. At the edge of the infolding of the body-wall the bundles begin to bay out irregularly, and finally set themselves, on the indrawn part of the body-wall, to form the sphincter proper, a plait of delicately branching and anastomosing bundles. This circular muscle increases in bulk downwards, and terminates below with a rounded