

filaments; side by side with these fusiform cells, cylindrical forms occur, with a broad outer end, and an inner end produced into long tail-like processes not more than two in number. It was not found possible to trace these processes into connection with any other cellular elements. These elongate cells are not uniformly distributed below the epithelium, but occur in patches, which can be generally recognised by a more than usually deep stain; frequently they converge towards the middle of the patch. Sometimes they are found below an even surface of epithelium; sometimes in ridges, which look like papillæ, but which are probably only wrinkles produced by the contraction of the muscular oscular tube. Immediately below this outermost layer follows a tissue-complex which is somewhat difficult to interpret. Most conspicuous and lying nearest the surface are little roundish granular bodies, 0.004 to 0.005 mm. in diameter, with a nucleus and nucleolus, lying in distinct cavities of a stained material. They appear to be the most visible portion of cells which are extended into processes difficult to distinguish. Lying deeper are granular irregularly branching cells, which look like collencytes. Next to these follows the layer of concentric myocytes. Scattered irregularly through the tissue of the oscular tube are numerous oval cells about 0.015 mm. in diameter, consisting of granules 0.003 mm. in diameter, some of which stain much more deeply than others.

The detailed structure of the layer of concentric myocytes is best made out in teased specimens mounted in glycerine. Each myocyte (Pl. XXXIX. fig. 9) is then seen as a fusiform thread-like cell, 0.4 mm. long by 0.0035 mm. thick; in the middle is an elongated oval vesicular nucleus, 0.0118 by 0.003 mm., containing a minute nucleolus, and surrounded by granular protoplasm, which extends 0.04 mm. along the axis of the cell on each side of it. The rest of the cell consists of structureless stained material. Associated with the myocytes are abundant collencytes (Pl. XXXIX. fig. 10) produced into very numerous branching thread-like processes, which unite among themselves into an intricate network which pervades the whole muscle. Not only do they unite with one another, but with the myocytes also, so that all the constituents of the muscular mass are in protoplasmic continuity. Though this structure is best made out in teased specimens it can also be traced in tangential sections (Pl. XXXIX. fig. 5), appearing particularly evident at those places where the pillars of fibre from the cloacal chamber enter the muscular tube of the oscule; the constituent myocytes of these fibres diverge to the right and left on entering this tube, and thus render the collencytes readily visible. From the foregoing description it would appear not impossible that a communication extends from the subepithelial columnar cells, through the underlying collencytes, to the collencytes of the muscular mass, and thence to the myocytes themselves, and thus the stimulus provoked by a foreign body touching the sides of the oscule, might extend to the muscle and bring about its contraction.

*Cloacal Chamber.*—The walls of this chamber (Pl. XXXIX. figs. 1–4) are formed