that the lacunæ of one canal are in communication with those of that adjoining. Numerous fusiform cells are present in the collenchyma as well as the usual branched collencytes, and large round or oval vesicular cells occur as well. These cells (Pl. XVIII. figs. 20, 21), which vary in abundance, sometimes lying so close together that they touch, are about 0·04 mm. in diameter, with a very definite outer wall, appearing in optical section as a thin double-contoured line; circular when seen face on; and, since they are much depressed, oval when seen in transverse section. Their thickness as shown in such sections is about 0·015 mm. Excentrically situated is a small circular nucleus, 0·005 mm. in diameter, containing a small spherical nucleolus, and surrounded with a small irregular heap of granular protoplasm, from which irregular, branching, and often anastomosing granular threads extend to the outer wall, within and over which they expand into a continuous, granular, protoplasmic layer. These cells lie close to the epithelium of the lamella within which they occur, in a single layer facing the surface; occasionally the layer may become double.

The fusiform cells, often over 0·296 mm. long, are variously arranged: some run radially through collenchyma from the spicular wall to the inner wall of the canals, entering a layer of concentrically arranged fibres with which the inner wall is surrounded. At varying intervals (Pl. XVIII. fig. 17), on an average about 2 mm. apart, the lumen of the canal is crossed by a membranous diaphragm (homologous with the usual velum of the water canals), centrally perforated; around this perforation dark gray, highly granular, fusiform cells are concentrically arranged, forming a powerful sphincter.

The spicular fibres are encircled by sheaths of concentric fibres, and similar fibres wrap round individual spicules; the spicules also serve as points of attachment for the fibres which radiate through the collenchyma; when these fibres pass on to the spicules they appear to expand into a finely fibrillated film; between the filmy ends of adjacent fibres, large oval cells with granular protoplasmic contents are developed close to the sides of the spicules (Pl. XVIII. fig. 24); the meaning of this arrangement is not obvious, as the cells do not appear to be scleroblasts. Between the spicular columns, running parallel with them longitudinally, are strong fibres about 0·04 mm. thick, composed of fusiform cells, which on reaching the distal disc of the cloacal tube enter it divergently, and radiate towards its margin and surface, terminating partly by enveloping the spicules of the disc, partly by entering a fibrous layer which coats its distal face.

The outer wall (Pl. XVIII. fig. 20) of the cloacal tube consists of a collenchymatous layer faced with epithelium on both sides, and continued on the inner face into the strands and lamellæ of collenchyma before mentioned. Parallel longitudinal fibres of fusiform cells traverse it, bulging it on the inner side; they are about 0·028 mm. wide, and on an average lie about 0·08 mm. apart. The outer wall is thus ruled out, as it were, into a number of longitudinal strips separated by the fibrous tracts; beneath these strips lie the lacunæ of the canals. Transverse thickenings of collenchyma, containing trans-