

verse fibres, which lie deeper than the longitudinal tracts, cross these at intervals, subdividing them into a number of oval areas, the thin roofs of which are perforated by one or more pores (Pl. XVIII. fig. 2). The external poriferous wall of the cloacal tube extends on to the under surface of the conical plate which distally closes it.

This plate is formed by a trumpet-like expansion of the axial columns of cloacal cladoxeas with their associated tissues, covered externally by a similar expansion of the outer wall, as just mentioned. Its distal face and margin are hispidated by radiating, slender, oxeate spicules which project as far as 5 mm. beyond it.

In the large cloacal tube (stage of sixteen) it is absent, and a thin poriferous membrane, at the end of one canal perforated by an oscule, alone closes the distal ends of the excurrent tubes. The absence of the disc appears to be the result of some injury which the sponge sustained during life.

The plate is composed of collenchyma, supported by monænes, the cladi of which lie radiately parallel with the distal face which they support. It is invested with the epithelium and associated sanidasters which are present over the whole free surface of the sponge. Its substance is excavated by numerous vesicular spaces which are in direct communication with the canals of the excurrent tubes; those vesicles which lie immediately beneath the membrane covering the distal end of the disc appear to communicate with the exterior by a few pores. The poriferous membrane of the under or proximal surface of the disc is not traversed by longitudinal fibres of fusiform cells like those of the wall of the cloacal tube. The epithelial margin of each pore, from 0.0118 to 0.0276 mm. wide, is bare of sanidasters for about 0.004 to 0.008 mm.; they then set in and mark out a framework with rounded meshes, within each of which a single pore, or may be two pores, are situated. The width of the bars of this framework is about 0.016 to 0.02 mm., so that the pores lie very close together.

*Relation of the Incurrent to the Excurrent Canals.*—If the incurrent canals of a sponge are to be regarded as the outer sinuses, and the excurrent canals as the corresponding inner sinuses, of the folds of a folded choanosomal plate, it follows that for every excurrent canal there must exist a corresponding incurrent canal, and further, that the two kinds of canals must be alternately arranged with respect to each other. In the present instance, where both the excurrent and incurrent canals are symmetrically arranged, we are provided with an exceptionally excellent opportunity of determining whether this relation actually exists; and a mere inspection of such a specimen as is shown in the illustration suffices to show that it does (Pl. XLI. figs. 3*a*, *c*), the four excurrent canals at one pole being alternately arranged with respect to the four incurrent at the other. Here, however, the two sets of canals are separated from each other by the intervening sponge-body; if, however, we cut the sponge-body across transversely, we may expect to find both sets of canals present in the same section; such a section is represented in the illustration (Pl. XLI. fig. 4), and it will be seen that the alternate