

(Pl. XXXIII. figs. 11, 12), is continued into the fenestrated membrane, which crosses the aphodal face of the chamber, as in nearly all Tetractinellida; it is here very conspicuous, so that I first discovered its existence in this sponge.

The fenestræ are round or oval, and from 0.004 to 0.006 mm. in diameter; sometimes a small, round, deeply stained body is seen occupying their centre. This appears to me to be the body of one of the choanocytes detached from the wall of the chamber, and drawn by the contraction of the collum into the middle of the fenestra.

Coating the desmas of the skeleton is a thin lamella, which stains with hæmatoxylin; it is to be frequently met with detached from both the desma and the surrounding sarcenchyma. It appears to be fragile, breaking readily into polygonal fragments. It was eagerly searched for associated cellular elements or scleroblasts, but as a rule no structure of any kind could be discerned in it. In a few instances, however, the appearances represented in the illustrations (Pl. XXXIII. figs. 15, 15*a-d*) were observed; they were so rare and exceptional, however, that I hesitate to attach any importance to them. That the lamella is in some manner connected with the formation of the desma appears however to admit of little doubt, and it is just possible that it may represent an exudation from surrounding but hypothetical scleroblasts that has since become hardened by treatment. It is also possible that the lamina represents a stratum of organic matter destined to receive a deposit of silica, and so to add to the thickness of the desma, and in this case the apparent cellular structures associated with it may be exhausted scleroblasts, though, judging from the homogeneous nature of the outer layers of the desma, this seems unlikely.

Demus II. RHABDOSA.

Hoplophora in which the ectosomal spicules are microstrongyles or modified microstrongyles (discs). The desmas are monocrepidial.

Family II. SCLERITODERMIDÆ.

Rhabdosa in which the ectosomal spicules are microstrongyles, and the other microscleres sigmaspires.

Genus 1. *Scleritoderma*, O. Schmidt.

Scleritodermidæ of plate-like form, bearing simple oscules on one face, and simple pores on the other.