

shells. Having dissolved the calcareous matter by cautious application of dilute hydrochloric acid, I was able to examine in a rather satisfactory manner the delicate remains, consisting of a scarce, clear maltha, and of the branched canals traversing the latter. The canals have often a distinct *membrana propria*, the wall of which is supported by small xenophya (fig. 7C). Numerous rather large flagellated chambers, of an ovate or oblong form, were visible between the smaller branches of the canal-system, and partly connected with them; here and there, too, the small inhalent canals could be recognised coming from the small dermal pores. The choanocytes were exceedingly small, on an average 0.001 mm. in diameter; the same was observed by Poléjaeff in *Psammopemma porosum*. The best preparation of the canal-system was obtained by vertical sections through the discoidal *Psammina plakina* (Pl. VII. figs. 1C, 1D). In this remarkable preparation were also found single eggs, some in segmentation (figs. 1C, 1D, e). Their structure and disposition are similar to those in *Plakina monolopha*.

The excurrent part of the canal-system exhibits in the deep-sea Psamminidæ three different types. The discoidal *Psammina* possesses a girdle of oscula, or of large exhalent openings (usually between ten and twenty) on the peripheral margin of the medal-shaped body (Pl. VII. fig. 2B). The tuberoso *Holopsamma* bears either a single osculum on the top of each prominent lobe (fig. 6B, o), or a series of oscula (or several series) on the projecting crests of the massive body, between the conical depressions which bear the dermal pores (fig. 7A). The true *Psammopemma* has no distinct oscula at all (figs. 4, 5).

Symbiontes.—The majority of the deep-sea Psamminidæ are not associated with a symbiotic Spongoxenia. Two species only of *Psammina* exhibit this symbiosis, viz., *Psammina globigerina* (Pl. VII. fig. 2C) and *Psammina nummulina* (fig. 3). Between the two parallel hard dermal plates of these discoidal sponges (which in the former are composed of Globigerina ooze, in the latter of Radiolarian ooze) is placed a soft medullar mass, with the canal-system of the sponge, and within this is expanded a network of anastomosing chitinous tubes, filled with dark brown cells (figs. 2C, 3). This is probably the hydrorhiza of a symbiotic Hydroid (*Stylactis?*); its hydranths and gonophores, however, could not be seen.

Genus 4. *Psammina*,¹ n. gen.

Definition.—Psamminidæ with a discoidal body, forming a thin and flat crust or plate, the margin of which is provided with a series of oscula. The canal-system is expanded horizontally in a soft medullar mass, which is enclosed between two hard cortical plates (upper and lower plate), both full of xenophya.

The genus *Psammina*, represented in the Challenger collection by three new and

¹ *Psammina* = Sandy, ψάμμινα.