

fibres, which partly connect, partly include, the xenophya. These foreign bodies are in the latter species principally siliceous spicules of different sponges; in the first species principally Radiolarian tests, and in the second species both these forms of xenophya are found. The chitinous tubes of the hydrorhiza of the symbiotic Hydroids replace in all the three species the stout main fibres which are characteristic of *Spongelia*.

*Psammophyllum reticulatum*, n. sp. (Pl. V. figs. 1-4).

*Habitat*.—Tropical Pacific, Station 198; October 20, 1874; lat. 2° 55' N., long. 124° 53' E.; depth, 2150 fathoms; bottom, blue mud.

Sponge foliaceous, reniform, pedunculate, very thin, felty, with undulate distal margin. Surface reticulate, without concentric zones. Framework of the spongin-fibres very scanty and loose, mainly composed of very thin and solid anastomosing fibres, which connect siliceous spicules of different sponges and other xenophya. The same foreign spicules also fill up the maltha.

*Psammophyllum reticulatum* has the shape of a broad reniform leaf, which attains, in the largest specimen preserved, a height of 50 to 60 mm. and a breadth of 80 to 90 mm. or more. The majority of the specimens preserved are about half that size or less; there are a few small leaves in the collection, which are only 3 to 4 mm. in height and 5 to 6 mm. in breadth, but the form and structure is the same as in the largest leaves. The thickness of the leaf is between 1 and 5 mm., usually 2 or 3 mm., and nearly equal throughout the whole extent, but several leaves are thinner in the middle part (only 0.4 to 0.5 mm.) and thicker on the club-shaped base of the pedicle (7 or 8 mm.). The pedicle is cylindrical, usually about half as long as the leaf itself, gradually broadening toward both ends; the basal end is thickened and expanded into an irregular foot-plate for attachment.

The colour of the leaves is brown, the consistence very soft and fragile, little elastic. The entire surface is felty or woolly, and the aspect of the body at first sight is that of a thin felt-sole or hair-sole. It is very loose in texture and easily torn to pieces. The woolly aspect and the felty consistence of the surface is produced by the numerous large spicules of siliceous sponges everywhere prominent and matted together.

*Symbiontes*.—The characteristic reniform leaf-shape of the sponge is evidently produced by the dense network of the symbiotic Hydropolyp (*Spongoxenia*), which is growing in a vertical plane, like a *Rhipidogorgia*. The sponge itself is only a thin woolly mantle, which covers both sides of the foliaceous polyp-corm and fills up the meshes of its loose network. The chitinous tubes of this latter are cylindrical, often varicose, 0.1 to 0.2 mm. broad; the meshes between them are 1 to 3 mm. in diameter. The tubes are irregularly curved, broadened on the nodal points of the network, and