

similarly as in *Stannophyllum venosum* (Pl. I. fig. 4). The ribs are lighter in colour, grey or whitish; they disappear in the distal part of the leaf, which exhibits distinct concentric zones of nearly equal breadth (3 to 4 mm.). The zones are more prominent than in the following species, and more thickened in the proximal part, so that the vertical section is cuneiform (Pl. IV. figs. 7, 8). Each zone therefore covers with its thickened proximal edge the thinner distal part of the neighbouring proximal zone; the thickened edge exhibits an irregular row of large openings, probably the oscula (fig. 7, *o*), whilst the felty dermal membrane of the surface is pierced by the smaller dermal pores (fig. 7, *p*). The outermost distal zones exhibit oscula also on the two faces (fig. 8, *o*). Scattered in some parts of the mesoderm were found amœboid egg-cells, similar to those of other *Keratosa* (Pl. V. fig. 5, *e*).

*Symbiontes*.—The spongy parenchyma between the two parallel dermal plates is traversed by numerous anastomosing cylindrical tubes, which form a rather dense network. These chitinous tubes belong to the hydrorhiza of a symbiotic Hydroid, *Halisiphonia spongicola* (Pl. IV. fig. 9). After long continued researches, I was successful in finding in some portions of the sponge the club-shaped gonangia (fig. 9, *g*) as well as the urn-shaped hydrothecæ (fig. 9, *p*) of the symbiotic Spongoxenia. The cellular contents of the chitinous tubes were rarely distinct (Pl. V., fig. 5, *h*); usually they were destroyed, their remains forming a dark granular mass of an olive or brown colour.

*Xenophya*.—The foreign bodies which compose the pseudo-skeleton in this species are more varied than in the preceding and following species. Siliceous spicules of sponges, tests of Radiolaria, and various mineral particles characteristic of the red clay, occur intermingled. They are partly crowded in the clear maltha, partly enclosed by the meshes of the network of the spongin-fibrillæ (Pl. IV. fig. 6, *r*), and the smaller xenophya are enclosed in the horny fibres, as in *Spongelia*.

*Horny Skeleton*.—The spongin-fibres in this species are more developed than in any other Deep-sea *Keratosa* here described. They form a dense irregular network, exhibit numerous ramifications and anastomoses, and are of very unequal thickness (Pl. IV. fig. 6, *f*). The thinner fibrillæ (0.001 to 0.01 mm. in diameter) are equal to those of *Stannophyllum*, whilst the thickest fibres (0.02 to 0.06 mm.) approach those of *Spongelia*. The axial thread is very distinct.

*Psammophyllum annectens*, n. sp. (Pl. IV. figs. 1–4).

*Habitat*.—North Pacific, Station 244; June 28, 1875; lat. 35° 22' N., long. 169° 53' E.; depth, 2900 fathoms; bottom, red clay.

Sponge foliaceous, reniform, pedunculate, rather compact and elastic. Surface with concentric zones of equal breadth. Framework of spongin-fibres very irregular,