

*Psammopemma densum*, Marshall (Pl. III. figs. 3, 4).

*Psammopemma densum*, Marshall, Zeitschr. f. wiss. Zool., Bd. xxxv. p. 116, 1880.

When characterising this species, Dr. Marshall did not feel quite certain whether he was really describing a sponge and not a worm-tube or something of that kind. Of course, I have scarcely the right to express an opinion on this delicate question, still I believe it to be a sponge; at any rate I can state with the greatest certainty that such sponges, *i.e.*, sponges without any differentiated skeletal fibres but still secreting horny substance, do really exist. Sanctioning thus the establishment of the genus *Psammopemma*, I adopt also Dr. Marshall's species *Psammopemma densum*, since its specific designation is very characteristic of two specimens in the Challenger Collection, and especially of that from Port Jackson.

This last specimen is represented in Pl. III. fig. 3, and it will be obvious from this drawing that the original is probably not the whole animal but only a fragment of it. Now even if this fragment give no precise idea as to the shape of the whole animal, it must still be assumed that this latter was of a plate-like compressed form, supposing the fragment in question was not merely an outgrowth; while the external shape of the second Challenger specimen, represented also only by a fragment, must have been either crust-like or massive, the plane of the fracture being parallel to its outer surface.

So far as this latter is concerned, it is in both specimens uneven and throughout its whole extent rough, owing to prominent sand-grains, often 1 mm. in diameter. In the Australian specimen, at one point on its surface, I found a shallow depression, which I am inclined to regard as the osculum; but I refrained from trying to prove it by immediate dissection lest I should destroy the specimen in vain, the sponge presenting such a compact aggregation of sand-grains that only very thick sections could have been obtained from it by the microtome. Besides, the question is of little consequence.

In contrast to the specimens which Dr. Marshall had for examination, both the Challenger specimens proved to be free from any parasitic inhabitants, as well as from any skeletal fibres, either foreign or produced by the sponge itself. Nor can I say that the foreign enclosures are held together by protoplasm as stated in Marshall's definition of the genus (*loc. cit.*, p. 113); each of them, though surrounded by a thin horny envelope, having been found lying separately in the parenchyma. That the envelope just mentioned is of a horny nature I judge from the fact that it does not differ from the envelopes to be found around foreign enclosures in other Spongelidæ, lying free in the "sarcode," these latter in their turn not differing from the envelope of true skeletal fibres overcharged with foreign bodies. Contrarily to Marshall (*loc. cit.*, p. 114), I find this envelope to be