

Colour.—Pale greyish-yellow ; skeletal fibres dirty greyish.

Habitat.—Station 186, September 8, 1874, lat. 10° 30' S., long. 142° 18' E. ; depth 8 fathoms ; coral mud.

Psammoclema foliaceum, n. sp. (Pl. III. fig. 7).

Like *Psammoclema ramosum*, the species in question was brought home in fragments, all, however, in both cases belonging to one specimen. When put together, the fragments of the Challenger *Psammoclema foliaceum* form a whole which may be compared with my drawing of *Carteriospongia radiata*, but which is approximately four times as large, with walls from two to four times as thick in different parts of the body, and with surfaces of a rather shagreen-like appearance and not distinguished by the system of longitudinal ribs. The resemblance in the form ; the fact that, as regards the anatomical structure of the canal system, *Psammoclema* is closely allied to *Carteriospongia* ; and again, that most of the representatives of this latter genus also possess fibres full of foreign enclosures ; all render the form I am now describing extremely interesting from a phylogenetic point of view. This has led me to make greater endeavours to find out its histological structure in the hope of discovering in it the anastomosing "Stränge" of F. E. Schulze, the function of which is of course doubtful, but which are so very characteristic of *Carteriospongia* and of all the Spongidae generally. The specimen proved, however, to be so very badly preserved that I had to be content with making out its anatomical organisation, and thus assigning to it a definite systematic position.

A portion of its skeleton is represented on Pl. III. fig. 7 ; like that of *Psammoclema rosmaeri*, it is of a dirty-greyish colour, due to the abundance of foreign enclosures in its fibres, but the meshes are larger, and when seen against the light the primary fibres become very clearly visible. I characterise the species exceptionally by its external shape, but of course I am uncertain whether I am right in this proceeding. Later investigations will decide the question.

Colour.—Black ; skeleton grey.

Habitat.—Station 162, April 2, 1874, off East Monceur Island, Bass Strait ; depth 38 fathoms ; sand and shells.

Psammopemma, Marshall.

Spongeliidae without any differentiated skeletal fibres, the supporting skeleton being represented by foreign enclosures lying separately in the parenchyma, and the secretion of the horny substance having been reduced to the formation of only a thin envelope around the enclosed foreign bodies.