

*Psammaplidium spongiforme*, n. sp. (Pl. XXXII. figs. 1-5).

*The Colony* is an irregularly lobed mass of large size. It is attached by a comparatively small area, and from this base rise several closely placed large flattened expansions with irregularly lobed free ends. All of the edges and processes are rounded. The surface is irregular, rough, and sandy. The colour is a yellowish-grey, the colour of the sand.

The length of the entire colony is 6 cm., the greatest breadth is 10 cm., and the greatest thickness 4 cm.

*The Ascidiozooids* are very minute, and are not visible on the outside of the colony; and, on account of the enormous quantity of sand imbedded throughout all parts, it is rather difficult to discover them even when the colony is dissected. They do not seem to be arranged with regularity, but circular common cloacal apertures are present, chiefly on the upper parts of the expansions and lobes. The bodies of the Ascidiozooids are about 1 mm. in length and 0.3 mm. in breadth. They are not divided externally into regions.

*The Test* is solid and firm, but very brittle. It is closely packed in all parts with imbedded sand-grains. The test cells are numerous but very small. The matrix is clear and homogeneous. No bladder cells are present.

*The Mantle* is moderately thick and muscular. The muscle bands are all longitudinal in direction, and are not distant.

*The Branchial Sac* occupies about one half of the length of the body. The stigmata are not large, and they are rather inconspicuous. They are of an elliptical form with rounded ends.

*The Endostyle* is large and conspicuous. Its course is undulating.

*The Alimentary Canal* forms a loop of considerable size. The stomach is globular and smooth walled. The rectum is relatively wide.

*The Post-Abdomen* is very short and is not separated from the intestinal loop. It contains both male and female reproductive organs.

*Locality*.—Port Jackson, Australia, April 1874; depth, 7 fathoms.

A single specimen and some fragments of this large and striking species were obtained at Port Jackson, Australia, from shallow water. The colony is very like a Sponge. It consists of four large irregular flabelliform expansions united at their lower ends where they have a common base of attachment (Pl. XXXII. fig. 1). The upper ends and free edges of these expansions bear irregularly rounded lobes or knobs. The imbedded sand-grains are so numerous that the colony looks as if it were entirely composed of sand. This is the cause of the rough surface and of the colour. A few shell fragments and other foreign bodies are attached or imbedded at the lower end of the colony near the base of attachment. The common cloacal apertures are numerous (Pl. XXXII. fig. 1).