

spicules of various sponges, &c.). These are disposed in the horny fibres of the skeleton, but sometimes also in the clear maltha or the ground-mass of the mesoderm. Sometimes the spongin is developed very scantily, and forms only thin sheaths, partially covering the xenophya connected by it, or saccular envelopes around them.

The external form in the Spongelidæ is very variable, as also in the Euspongidæ. The canal-system is formed on the Leuconal-type (the third type of Vosmaer), with roundish or oblongish flagellated chambers of variable size, usually rather large, but sometimes very small. It is impossible to retain the relative size of the flagello-chambers as the essential difference between the Spongelidæ and Euspongidæ. Among the Deep-sea Keratosa collected by the Challenger, there are five distinct species belonging to the Spongelidæ. They represent two different new genera, both of special interest. Their peculiar organisation is probably due (to a certain extent at least) to the symbiosis with a Hydroid, the reticular hydrorhiza of which traverses the whole body of these sponges.

The first genus, *Cerelasma* (Pl. VI.), is distinguished from all other Spongelidæ (and probably from all other Keratosa hitherto described) by the peculiar mode of the spongin-secretion. The yellow horny substance of the skeleton forms in the two species of this genus not a framework of anastomosing cylindrical fibres, as usual, but saccular envelopes around the innumerable xenophya which compose the pseudo-skeleton; these are connected by irregular branched lamellæ, which are expanded in the meshes between the branches of the symbiotic hydrorhiza. The sponge itself represents in the two species of *Cerelasma* a globular or tuberose body composed of numerous anastomosing branches, which are either lamellar or cylindrical.

The second genus, *Psammophyllum* (Pls. IV., V.), is represented by three species, which are very similar in external shape to the Stannomid genus *Stannophyllum* (Pls. I., II.). The body is invariably a pedunculated flabelliform leaf. Its spongy substance is supported by the reticular hydrorhiza of a symbiotic Hydroid, and overladen with xenophya. But the essential difference between the two similar genera is, that the simple (rarely branched) spongin-fibrillæ of *Stannophyllum* do not anastomose, form no network, and do not include the xenophya. In *Psammophyllum*, however, as in all true Spongelidæ, the anastomosing spongin-fibres form a network, and include (partially or totally) the foreign bodies of the pseudo-skeleton.

*Psammophyllum* is closely allied to that remarkable Spongelid described by Esper as *Spongia papyracea*,<sup>1</sup> by Ehlers<sup>2</sup> and Hyatt<sup>3</sup> as *Phyllospongia papyracea*. But if the description of this latter be correct, it differs from *Psammophyllum* in two essential points. The two sides of the flabelliform leaf are the same in *Psammophyllum*, whereas in *Phyllospongia* the upper and lower sides have a very different structure. In the

<sup>1</sup> Esper, Spongien, Forts., Bd. ii. p. 38, Taf. lxxv.

<sup>2</sup> Ehlers, Die Esperschen Spongien, pp. 22, 30, 1870.

<sup>3</sup> Hyatt, Revision North Amer. Porif., part ii. p. 73, pl. xvii. fig. 31, 1876.