Family II. Psamminidæ, Lendenfeld (Pl. VII.).

Definition.—Keratosa without spongin-fibres. Pseudo-skeleton composed of xenophya (or manifold foreign bodies), which are cemented together and enclosed by the transparent maltha. Canal-system vesicular, developed on the Leuconal-type (similar to that of the Spongelidæ).

The family Psamminidæ comprises those Keratosa (or rather "Pseudo-Keratosa") in which no trace of spongin-fibres is developed, the skeleton being composed only of manifold foreign bodies, which are enclosed in the maltha or the mesodermal ground-mass of the connective tissue. Lendenfeld, who founded this family in 1886 (as Psamminæ, a subfamily of the Spongelidæ), gives the following definition of it:—"The skeleton consists of foreign bodies cemented by spongin, which, however, is not distinctly visible; without flesh spicules."[1] Three genera are distinguished by him, *Psammopemma*, *Psammella*, and *Holopsamma*. *Psammella* (Lendenfeld) has not yet been described. The first genus, *Psammopemma*, described by Marshall in 1880, was placed by him in the family Spongelidæ or Dysideidæ. I think, however, that the complete absence of a horny spongin-skeleton is quite sufficient to separate the Psamminidæ from the Spongelidæ. No trace of true spongin or horny substance is to be found either in those species described by Marshall as *Psammopemma* in 1880, nor in those described by Carter as *Holopsamma* in 1885. Both these genera are represented by several new deep-sea forms in the Challenger collection, and it contains besides three new species of a new interesting genus, *Psammina*, the discoidal body of which is remarkable for its simple structure.

The Psamminidæ must be separated from the true Spongelidæ for the same reason as the Halisarcidæ and Chondrosidæ. They are indeed—regarded critically—skeletonless, like the two latter families; for the impregnation of the mesoderm with manifold xenophya, or hard foreign bodies, produces only a pseudo-skeleton,—a solid supporting mass in a physiological sense,—but not to be compared with a true internal skeleton produced by the mesodermal connective tissue itself, as is the case in the Keratosa proper. It would, therefore, perhaps be better to separate the Psamminidæ as "Myxospongiæ arenosæ," or Psammospongiæ, from the true Keratosa, and to unite them with the skeletonless Myxospongiæ (Halisarcidæ and Chondrosidæ).

Dr. N. Poléjaeff, in his Report on the Keratosa,[2] describes two species of *Psammopemma* collected by the Challenger in shallow water. The first is the form illustrated by Marshall (*Psammopemma densum*), dredged at Station 49, in 85 fathoms; the second is a new form (*Psammopemma porosum*)[3] found at Bahia in shallow water. Dr. Poléjaeff gives the following definition of *Psammopemma*:—"Spongelidæ without any

[1] Lendenfeld, Classification of Sponges, *Proc. Zool. Soc. Lond.*, p. 589, Dec. 21, 1886.
[2] Zool. Chall. Exp., pt. xxxi. [3] *Loc. cit.*, pp. 45–50, pl. iii. figs. 3, 4.