

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." In contradiction to this description, the figure of *Psammopemma*, given by Poléjaeff, exhibits no trace of a horny envelope, but the xenophya are imbedded immediately in the maltha or the so-called parenchyma of the mesoderm, in the same way as the flagellated chambers. The same is the case in the original specimens of *Psammopemma densum*, upon which Marshall founded the genus, and which he received from my museum at Jena. A re-examination of them has convinced me that Marshall's description is quite correct, and that there is no trace of spongin in the body, as Poléjaeff supposes. The "horny envelopes" described by the latter are the usual sheaths of xenophya, or the condensed parts of the maltha, which envelop all the foreign bodies in the ground-mass of the connective tissue. But if his *Psammopemma porosum* really possesses "fully-developed horny envelopes around the foreign enclosures, occasionally with very conspicuous outgrowths," then probably this species should be transferred to *Cerelasma* (p. 45), or to an allied genus of Spongelidæ.

The Psamminidæ often seem to inhabit the deep sea, and during the ten years in which I made my investigations on the Challenger Radiolaria, I found in many soundings from the Challenger collection irregularly formed lumps or crusts, which a closer examination proved to be fragments of arenaceous Keratosa without horny fibres. But only seven of these Psamminidæ were preserved in a manner sufficient for their description as new species. In two of these seven deep-sea Psamminidæ the pseudo-skeleton is composed of Radiolarian ooze; in four others of Globigerina ooze; in another it is built up of red clay. It therefore seems probable that all the different kinds of deep-sea bottom are accidentally employed by several Myxospongiæ for the construction of a pseudo-skeleton.

The external appearance of all these Psamminidæ is generally simple and insignificant, the general form being an irregular lump or crust; at first sight one is inclined to regard them as porous lumps of inorganic deposit. But anatomical examination, especially by means of sections through different planes, shows that the sandy body is traversed by branched canals, which are in connection with flagellated chambers, the characteristic organs of sponges.

*Canal-System.*—The state of preservation of the deep-sea Psamminidæ which I found in the Challenger collection was usually not sufficient to enable one to recognise its true structure with precision; besides, their examination is very difficult, owing to the dense sand masses which fill up the whole mesoderm. In four cases, however, I succeeded in recognising the main parts of the canal-system, and convinced myself that it is constructed on the Leuconal-type. This was recognisable in those four species of Psamminidæ in which the pseudo-skeleton is composed of agglutinated *Globigerina*