

between *Stannophyllum* and the other species of *Psammophyllum*, which in structure approach more to *Spongelia*.

Family IV. STANNOMIDÆ, n. fam. (Pls. I. -III.).

*Definition.*—Keratosa with a fibrillar spongin-skeleton composed of thin, simple or branched, spongin-fibrillæ, never anastomosing or reticulated. Pseudo-skeleton composed of xenophya (or diverse foreign bodies), which are crowded in the transparent maltha, never in the homogeneous fibrillæ. Canal-system vesicular, developed on the Leuconal-type (similar to that of the Spongelidæ).

The new and most remarkable family Stannomidæ comprises those Keratosa hitherto unknown, which produce true horny fibrillæ in the mesoderm, and besides possess a pseudo-skeleton composed of various xenophya; but these foreign bodies are enclosed in the clear maltha or the ground-mass of the connective tissue, not in the spongin-fibres (as in the Spongelidæ). All Stannomidæ are inhabitants of the deep sea; they are very dissimilar in external form, while they all agree in internal structure. Three different types of external form may be distinguished, viz.—(1) *Stannophyllum*, with foliaceous or laminar flabellate body (Pls. I., II.); (2) *Stannarium*, with a branched body, composed of several free or coalescent foliaceous wings (Pl. III. figs. 6–14); and (3) *Stannoma*, with a branched arborescent or coralliform body, the branches of which are cylindrical, either free or connected by anastomoses (Pl. III. figs. 1–5). The size of these two latter Stannomidæ is usually between 30 and 60 mm., while the large flabelliform leaflets of *Stannophyllum* reach a diameter of 100 to 200 mm. and more.

The Stannomidæ discovered by the Challenger have all been found in the central part of the Tropical Pacific, in depths between 2425 and 2925 fathoms. The majority of the specimens collected were taken at Station 271, in the equatorial central Pacific (depth, 2425 fathoms); some other forms were captured in the neighbouring Stations 270 and 272. The Stannomidæ are the most important and most interesting of all the Keratosa collected by the Challenger. Their structure is so strange and so peculiar that several distinguished spongiologists, to whom they were submitted for investigation, said they were not sponges. Some naturalists declared that they were gigantic Rhizopods. Nevertheless I am now quite convinced that they are true horny sponges; some new forms of *Psammophyllum* (Pls. IV., V.), which form an uninterrupted continuous series of modifications and connecting links between *Stannophyllum* and *Spongelia* (*Phyllospongia*), leave no room for doubt.

Unfortunately, the state of preservation of all the Stannomidæ collected, as well as of the peculiar Hydroida living in symbiosis with them, was very imperfect, and not sufficient for the examination of the finer structures. It is natural that “these delicate things, drawn up rapidly through the water from a depth of nearly four statute miles,