(*Stannophyllum*), whilst all the others are secondary wings, budding from its two parallel faces (compare Pl. I. fig. 5B). The internal structure as well as the external form of these leaves are the same as in the ancestral *Stannophyllum*, and the material of the pseudo-skeleton is variable in a similar way.

Two different species of *Stannarium* were found in the Challenger collection, the first (*Stannarium alatum*) with free wings, the second (*Stannarium concretum*) with united wings, so grown together that funnel-shaped cavities remain between them. The pseudo-skeleton of the former is composed mainly of Radiolarian ooze, while in the latter more or less Globigerina ooze is intermingled. The spongin-fibrillæ are more regular, equal, and thin in the former, coarser and unequal in the latter, so that the differences between these two species are similar to those between their ancestral forms, *Stannophyllum radiolarium* and *Stannophyllum globigerinum*.

Stannarium alatum, n. sp. (Pl. III. figs. 6–9).

Habitat.—Central Pacific, Station 272; September 8, 1875; lat. 3° 48′ S., long. 152° 56′ W.; depth, 2600 fathoms; bottom, Radiolarian ooze.

Sponge rather consistent, with several vertical, free, foliaceous wings, which are not grown together, and arise from a primary flabelliform leaf. Skeleton composed mainly of Radiolarian ooze.

There are several specimens of *Stannarium alatum*, varying in diameter from 30 to 60 mm. From a thick basal pedicle arises vertically a primary flabelliform leaf (*Stannophyllum*), and this produces by lateral budding several secondary leaves, which also stand nearly vertical. Usually there are two larger secondary leaves arising obliquely from the two sides of the primary leaf, so that the sponge seen from above represents an irregular four-winged cross (fig. 8). Sometimes several smaller lateral wings arise between the larger. The wings are ovate, or semicircular, of the same thickness as the primary leaf, between 1 and 2 mm. The distal margins are integral or slightly lobulate.

The surface of the leaves is finely arenaceous (from the conglomeration of Radiolarian shells), and at the same time felty (from the irregular web of the fine spongin-fibrillæ). Innumerable very small pores pierce the thin dermal membrane, which may be stripped off from the dense, felty, medullar mass. This is rather compact, traversed by the same canal-system and the same network of the symbiotic Hydroid as in the ancestral *Stannophyllum radiolarium*.

Skeleton.—Amongst the xenophya or foreign bodies which compose the pseudo-skeleton, siliceous Radiolarian shells are predominant, but sometimes spicules of siliceous sponges and also fragments of calcareous *Globigerina* shells are intermingled, the latter mainly in the basal pedicle. All the xenophya are surrounded and connected by the