

and the origin of the numerous holes which pierce its leaf. But this as well as the characteristic lobulation of the distal margin may be due also partly to the mode of growth, which follows that of the symbiotic Hydroid, partly to the different development of the spongin-fibrillæ (compare p. 64).

The Spongoxenizæ, or the different forms of symbiotic Hydropolyps, which are always present in *Stannophyllum*, expand in the soft medullar mass between the two parallel dermal plates, which may be separated more or less easily from the former. The hydranths seem to proceed usually from the distal margin of the flabelliform leaf, but sometimes also from its two faces and also from the base of the pedicle. Usually the imperfect state of preservation prevents the accurate examination of the disposition and structure of these symbiontes, but in a few specimens (principally of *Stannophyllum globigerinum*) they were well preserved and could be recognised as two species of *Stylactella* (*spongicola* and *abyssicola*, Pl. II. figs. 6, 7), compare below p. 78. The canal-system of *Stannophyllum*, unfortunately, is in most of the specimens badly preserved. I was able, however, to recognise in all the species of *Stannophyllum* the small dermal pores of the surface, but not with satisfaction the larger openings, which may be regarded as oscula. In *Stannophyllum zonarium* there are series of larger openings (twice as broad as the usual pores) in the thickened proximal margin of each zone; in *Stannophyllum globigerinum* sometimes apparent oscula are scattered on the two faces of the leaf, but in the other species they were not distinctly recognisable. It may be that the water entering by the pores of the two parallel faces issues by the oscula of the distal margin (compare Pl. IV. figs. 7, 8). The internal canal-system is of variable shape. Larger or smaller subdermal cavities seem to lie immediately below the dermal plates, and to be connected with groups of flagello-chambers, which are disposed in the spongy medullar substance; these, however, were not distinctly recognisable (compare Pl. II. figs. 3, 4).

*Stannophyllum zonarium*, n. sp. (Pl. I. figs. 1A-1C; Pl. II. figs. 1-4).

*Habitat.*—Tropical Pacific, Station 271; September 6, 1875; lat. 0° 33' S., long. 151° 34' W.; depth, 2425 fathoms; bottom, Globigerina ooze, containing many Radiolaria.

Sponge with an elastic brown coriaceous leaf of subcircular or kidney-shaped outline, with a thin and flat pedicle. Distal margin semicircular, integral. Surface soft, velvet-like, without branched ribs, but with distinct concentric zones of subequal breadth parallel to the distal margin. Skeleton composed mainly of interwoven bundles of spongin-fibrillæ, and forming a dense felty network, in the meshes of which many shells of Radiolaria and a few fragments of *Globigerina* are imbedded.

*Stannophyllum zonarium* is the most elastic and flexible among the species here