Stylactella spongicola, n. sp. (Pl. II. figs. 5, 6).

Habitat.—Northern and Central Pacific, symbiotic with Stannomidæ, Spongelidæ, and Psamminidæ; Stations 241, 244, 270, 271, 272, 274; depths between 2300 and 2900 fathoms.

Stylactis with a reticular hydrorhiza, the anastomosing tubes of which are cylindrical and of equal breadth. Hydranths ovate or clavate, springing at short intervals from the hydrorhiza, sessile or very shortly pedunculate, with a single circlet of eight (?) tentacles. Gonophores ovate, twice as large as the hydranths, arising scattered between them from the hydrorhiza.

Stylactella spongicola is by far the most frequent among the Hydroids which live in symbiosis with the Deep-sea Keratosa. It is the usual symbiotic Hydropolyp in all the species of Stannomidæ, and occurs too in some Spongelidæ (*Psammophyllum*, *Cerelasma*) and in some Psamminidæ (*Psammopemma*). Its hydrorhiza traverses the body of these sponges in all directions, and replaces the absent strong spongin-fibres, giving to the sponge a firm support and a distinct form. Since the network of the hydrorhiza is continuous throughout the whole sponge, it reaches in the largest species of *Stannophyllum* (*venosum*) the enormous size of 100 to 200 mm. and more. The polygonal or roundish meshes of the network are of variable diameter, usually between 1 and 0·5 mm., but sometimes they are far larger, 3 to 5 mm. or more, at other times only 0·2 to 0·4 mm. The chitinous tubes of the network are cylindrical, of nearly equal breadth, usually between 0·05 and 0·1 mm., but sometimes 0·12 mm. and more (Pl. II. fig. 6, *h*). The thin, yellowish, chitinous wall is of variable thickness. The entoderm of the hydrorhiza, inside the chitinous tubes, is always dark coloured, greenish brown or yellowish brown.

The hydranths are usually developed in the superficial layers of the network only, and mainly in the distal portion of the sponge. But in many specimens they are difficult to observe, and sometimes I failed to discover them at all. They are most easily examined in those Stannomidæ in which the skeleton is for the most part composed of Globigerina ooze. After having dissolved the calcareous matter by hydrochloric acid, there remains the transparent and colourless mesoderm of the sponge, in which the dark network of the hydrorhiza is easily seen (Pl. II. fig. 5).

The hydranths of *Stylactella spongicola* are ovate or club-shaped, and spring at irregular intervals directly from the branches of the hydrorhiza. They are very small, only 0·2 to 0·3 mm. in diameter, whilst the hydranths of *Stylactis vermicola* (Allman, *loc. cit.*) are ten times as large. The small basal pedicle, which is very distinct in this latter, invested with a chitinous perisarc ("rudimental stem," Allman), is wanting in the former species. The small claviform or oviform hydranths exhibit at the distal