(Hæckel), neither of the Challenger specimens exceeds 18 mm., including the collar fringed by fine linear acerate spicules 4 mm. in length.

Colour.—White and yellowish.

Habitat.—Station 36, April 23, 1873; off Bermudas; depth, 32 fathoms; mud. Station 209, January 22, 1875; lat. 10° 10′ N., long. 123° 55′ E.; Philippine Islands; depth, 95 to 100 fathoms; mud.

Sycon arboreum, Hæckel, sp. (Pl. I. fig. 4).

Sycandra arborea, Hæckel, Kalkschwämme, Bd. ii. p. 331.

There are four specimens of this Sponge in the Challenger collection, each presenting a colony of 9 to 13 individuals (Pl. I. fig. 4). The measurements of the spicules agree with those of Hæckel, the only differences being the length of the apical ray of the gastric quadriradiate spicules, which, usually exceeding the extreme length of 0·08 mm. given by Hæckel, not seldom reaches 0·25 mm., and the length of the acerate spicules of the collar, which are never longer than 1 mm., and often still shorter (0·5 to 1 mm.). The specimens were not particularly well preserved, but nevertheless, strange to say, the epithelium of the outer surface could be discerned more perfectly than I had ever seen it before, even by the aid of the osmic acid and gold methods. Accordingly, the course of the intercanals could be studied very easily, and I must state that the intercanals and the radial tubes of *Sycon arboreum*, as well as those of *Sycon elegans*, *Sycon raphanus*, *Sycon quadrangulatum*, &c., are by no means regular enough to admit of their geometric outlines being utilised for systematic purposes (Hæckel[1]), much less for the subdivision of the genus into sub-genera. Moreover, such a subdivision is unnecessary, for all the species of *Sycon* hitherto described can be very easily distinguished one from another by means of other characters.

The Challenger specimens of *Sycon arboreum*, like those examined by Hæckel, are all from the southern or eastern coast of Australia.

Colour.—Dirty yellowish.

Habitat.—Station 162, April 2, 1874; off East Moncœur Island, Bass Strait, Australia; depth, 38 to 40 fathoms; sand.

Grantia, Fleming.

Syconidæ with articulated tubar skeleton, with radial tubes which have lost every trace of individuality, owing to the existence of a thin, yet quite independent, cortex, its skeleton consisting principally of triradiate spicules.

[1] Kalkschwämme, Bd. ii. p. 290.