

Spicules.—*Megasclera*; (1) small, slender, very slightly curved, sharply and gradually pointed tylostyli (Pl. XLII. figs. 8*g*, 8*h*) with not very well-developed oval heads, size about 0·16 by 0·0045 mm.; these spicules occur in the outermost layer of the cortex. (2) Much larger, very stout, sharply pointed, fusiform tylostyli (Pl. XLII. figs. 8*e*, 8*f*), with roundish heads; size variable, about 0·22 by 0·0189 mm.; occurring in the lower cortical layer and passing gradually by spicules intermediate in form and size into (3) the long styli (Pl. XLII. fig. 8) of the fibres; these are smooth, straight, fusiform and sharply and gradually pointed at the apex; size about 1·2 by 0·03 mm. (4) The grapnel spicules (Pl. XLII. figs. 8*b*, 8*c*, 8*d*); long, very slender, with more or less expanded base and tapering very gradually to hair-like fineness towards the apex, ending finally in a small knob provided with recurved teeth which do not seem to be quite constant in number; commonly there are about four teeth, but owing to the minute size it is not easy to make out details; sometimes the teeth are absent, leaving only the knob. Length of spicule about 0·52 mm., thickness at thickest part of shaft about 0·0063 mm.

Locality.—Simon's Bay, Cape of Good Hope; depth, 10 to 20 fathoms. One specimen.

Genus *Trichostemma*, M. Sars (Pl. XLIII.).

1872. *Trichostemma*, M. Sars, Remarkable Forms of Animal Life, pt. i. p. 62.¹

1870. *Radiella*, Schmidt, Spong. Atlant. Gebiet., p. 48 (not *Radiella*, Sollas, Ann. and Mag. Nat. Hist., ser. 5, vol. ix. p. 162).

Sponge free living, with definite, symmetrical, external form; discoid or hemispherical; with a marginal fringe of long, hair-like spicules serving to maintain the sponge in its position in the mud. Oscula, one or more at the ends of short oscular tubes on the upper surface. *Megasclera* mainly tylostylote.

The original diagnosis (*loc. cit.*, p. 65) runs:—"Spongia silicea, simplex, libera, in limo demersa et hic fimbria spiculorum setiformium, flexibilium, radiantium sustentata, cortice crasso compacto circumdata, interiore multo minus compacto, parenchymatoso, lacunis numerosis irregularibus trajecto. Oscula numerosa tubiformia in facie superiore libere prominentia. Sceletum ex spiculis acuformibus fasciculato-radiantibus compositum, aliis brevissimis capite globoso in cortice densissime accumulatis, aliis multo longioribus, fasciculos tenues parenchyma et corticem trajicientes formantibus."

The original type of the genus is *Trichostemma hemisphaericum*, Sars, which "occurs not rarely at Lofoten . . . in a depth of 120–300 fathoms on soft clay bottom." The Challenger adds two new species, both from a very great depth and a bottom of ooze or mud. It is essentially a deep-sea genus, and forms another example of the manner in which deep-sea sponges commonly assume a definite, symmetrical external form; in this

¹ The genus and species are first described in this place as *nov. gen. et spec.*, but the name is used by Sars so far back as 1869 (*Forhandl. Vidensk. Selsk. Christiania*, 1869, p. 250), without, however, any description.