

1869 (*loc. cit.*), though his generic diagnosis does not appear till 1872, and that Schmidt's diagnosis of the genus *Radiella* is highly unsatisfactory, we think ourselves fully justified in retaining Sars' generic name, although the two seem to be probably synonymous. Upon this latter point, however, we should be very doubtful were it not for Hansen's precise statement, for the absence of the upper cortical layer of spicules in *Radiella* would be a very strong point.

Another sponge with almost identical external form is Bowerbank's *Halicnemia patera*,¹ but the genus *Halicnemia* is at once differentiated from *Trichostemma* by the presence of peculiar spicules in the dermal membrane, which Bowerbank tells us are "very numerous, dispersed, fusiformi-acerate, entirely spined, subangulated, and frequently inflated at the middle."

Probably the peculiar external form of these sponges is comparable to the "*Crinorhiza*" form found amongst the Desmacidonidæ, and may exist in very different genera when living under similar conditions; another instance being the little known *Xenospongia patelliformis*, Gray, which only wants the marginal spicular fringe to complete the external resemblance, but has a totally distinct spiculation (including stellate forms).²

Trichostemma sarsii, Ridley and Dendy (Pl. XLIII. figs. 1, 1a, 2, 2a, 3, 3a).

1886. *Trichostemma Sarsii*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 488.

Sponge (Pl. XLIII. figs. 1, 1a, 2, 2a, 3, 3a,) discoid, much flattened and usually thin. Flattened more especially on one side, which bears an oscular tube in its centre, and must therefore be regarded as the upper one. The lower side appears to be always more or less convex but usually only slightly so; in the single specimen from Station 184, however, it is strongly convex. The margin of the disk is thin, and provided with a beautiful fringe of very long, silky-looking spicules. The largest specimen is about 13 mm. in diameter (exclusive of the fringe of spicules, which is 3 mm. broad), and only just over 3 mm. in thickness at the centre. The smallest specimen has a diameter of about 5 mm. (exclusive of the fringe of spicules, which is again about 3 mm. broad). The diameter of the Australian specimen is about 8 mm. (excluding fringe), and the thickness in the centre 4 mm. On holding a specimen up to the light and looking at the flat side one sees a number of small, round, translucent patches, about 1.5 mm. in diameter, and arranged for the most part in a circle, a short distance within the margin of the sponge (*cf.* Pl. XLIII. fig. 2, &c.). The nature of these is very doubtful; we were at first inclined to regard them as pore-areas, but there is hardly sufficient evidence to

¹ Mon. Brit. Spong., vol. i. p. 184, pl. x. figs. 228-233, pl. xxxii. figs. 363, 364; vol. ii. p. 96; vol. iii., pl. xv. figs. 31, 32; vol. iv. p. 45.

² Concerning the relations of *Trichostemma* to *Polymastia* we prefer at present to keep silence. Vosmaer, however (Sponges of the "Willem Barents" Expedition 1880-81, p. 12), makes the two genera identical, but, though there is much to be said in favour of this view, we are, as already indicated, not yet satisfied about the matter. We cannot, however, at all understand how Vosmaer (*loc. cit.*) has come to the conclusion "that there is no generic difference between *Halicnemia* and *Polymastia*," and also, of course, *Trichostemma*, in spite of the differences in spiculation; a conclusion at which also von Marenzeller had previously arrived (*Denkschr. d. k. Akad. Wiss. Wien*, Bd. xxxv. p. 371).