

case, however, the object of the flattened form and the long radiating spicules is obvious, namely, as pointed out by Sars, to support the animal in the soft mud on which it lies; in our new species, *Trichostemma sarsii*, this arrangement is brought to a much greater degree of perfection than in the original type of the genus (*vide* Pl. XLIII. figs. 1, 1a, 2, 2a, 3, 3a, and woodcut, Fig. 8).

The genus has a very wide geographical range, being found in deep water off the north of Scotland (Carter), off the coast of Norway (Sars, Hansen), Gulf of St. Lawrence (Whiteaves), off the Azores (Challenger), off the north-east coast of Australia (Challenger), off the west coast of South America (Challenger), and in the Arctic Sea (Vosmaer).

The question as to whether Schmidt's genus *Radiella* is really the same as *Trichostemma* is a very difficult one. His generic diagnosis is not very recognisable; it runs as follows:—"Suberiten mit radiärer Schichtung der Nadeln; ohne Wurzeln und ohne wahre Rinde, d. h. ohne Rinde mit Faserelementen. Oscula vorhanden."¹ The type of his genus, *Radiella sol*, is undoubtedly extremely like our *Trichostemma sarsii*, and the fact of its being also found in deep water (Cuba, 638 fathoms) perhaps strengthens the

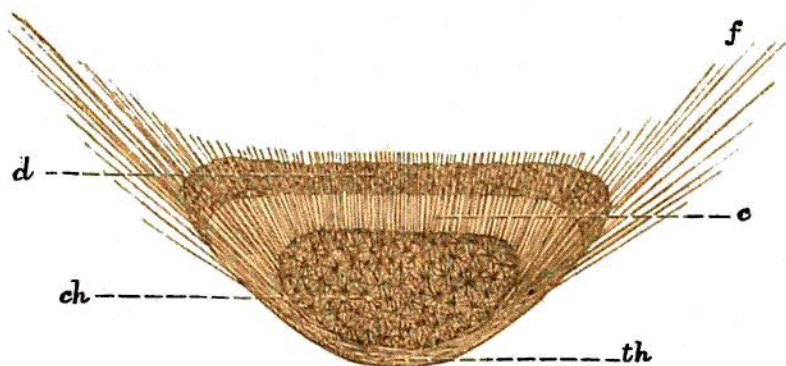


FIG. 8.—*Trichostemma sarsii*. Vertical section, showing the arrangement of the skeleton; *f*, fringe of long, projecting spicules; *c*, cortical layer of vertical spicules; *d*, external layer of foreign objects, dirt, &c.; *ch*, choanosome, containing stellate groups of spicules; *th*, "thatch" of spicules on the lower surface of the sponge. $\times 5$.

probability of their being closely allied. According to Schmidt's figure² the external form of the sponge is almost identical with that of *Trichostemma sarsii*, but judging by his description and figure there is no superior cortical layer and no internal confused mass of spicules, the smaller spicules instead running continuously from the lower to the upper surface of the sponge, beyond which they project "unmerklich." The thatch-like coat of radiating spicules on the lower surface of the sponge seems to be the same as in *Trichostemma sarsii*. In form also the spicules of the two species seem to be about the same, but Schmidt gives no measurements.

On the other hand Hansen³ states that he has examined an original specimen of *Radiella sol* and identifies it with *Trichostemma hemisphæricum*.

Considering, therefore, that the name *Trichostemma* was used by Sars so far back as

¹ Spong. Atlant. Gebiet., p. 48.

² *Loc. cit.*, pl. iv. fig. 6.

³ Norwegian North-Atlantic Expedition; Spongiadæ, p. 7.