the centre of the head, radiate a large number of dense, stout spiculo-fibres (Fig. 3, *a*); each runs out to the surface of the sponge and is continued to the end of one of the conical processes already mentioned. Each conical process is thus supported by an axial fibre. (3) At about one-third of the distance between the surface and the centre of the head is a reticulate layer of megasclera, which forms a kind of capsule (Fig. 3, *ca*), dividing the soft parts of the sponge into an inner and an outer portion. This capsule is, of course, pierced in numerous places by the stout radiating fibres already mentioned.

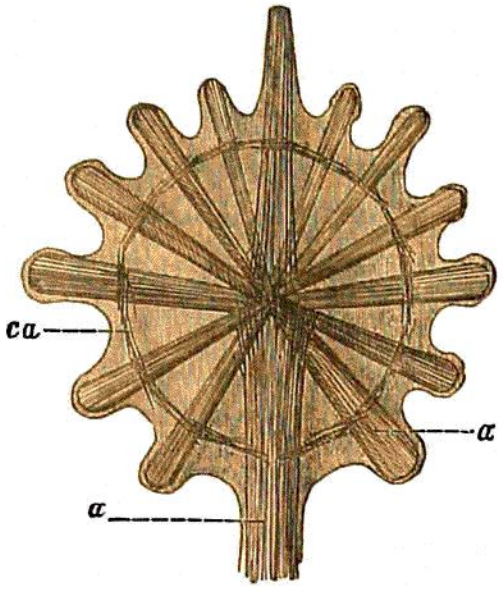

FIG. 3.—*Cladorhiza moruliformis.* Longitudinal section of the head, showing the arrangement of the skeleton; *a*, axis of stem and radial bands of fibres; *ca*, capsule of loosely disposed spicules. × 4.

Spicules.—(*a*) *Megasclera;* long, slender, very straight styli (Pl. XXI. fig. 1), which may reach a length of over 2 mm.; diameter about 0·05 mm. They are broadest in the centre and taper gradually towards each end, are flatly rounded at the base and hastately pointed at the apex. (*b*) *Microsclera;* (1) anisochelæ (Pl. XXI. fig. 19), of moderate size, length 0·063 mm.; these spicules have a slightly curved shaft, much expanded laterally towards the large end; the ends are of very unequal size and each has three sharp, prominent teeth. (2) Large, very sharply pointed, contort sigmata (Pl. XXI. fig 15), measuring up to 0·35 by 0·0145 mm.

The anisochelate spicules are especially abundant in the small conical processes, forming a dense crust around the axial fibre, with their large ends directed outwards. They are also very abundant in the tissues both inside and outside the "capsule." The sigmata appear to be very much more abundant outside the "capsule" than inside it.

Unfortunately this sponge was dry when the bladder was removed from its bottle, and we have therefore been obliged to confine our observations to the arrangement of the hard parts. It is a form of the very greatest interest, and affords a good example of radial symmetry in a Monaxonid sponge. It was a question with us whether or not this species should form the type of a new genus, but we finally decided not, as no essential changes are necessary to derive it from the more typical species, such as *Cladorhiza abyssicola*, Sars. Imagine an unbranched *Cladorhiza abyssicola* in which the points of attachment of the lateral pinnæ to the axis come close together; if the pinnæ are all of the same length the sponge will then have a globular form, and little further change is needed to convert it into *Cladorhiza moruliformis.* The chief difficulty is the capsule, and this is not an insuperable one. In some of the "Porcupine" *Cladorhiza's* (viz., *Cladorhiza abyssicola*, var. *corticocancellata*, Carter), there is an irregularly reticulate skeleton, chiefly placed at some distance beneath the surface, between the main radial fibres, and if we imagine this to become concentrated into one