

in shape; the smallest is a prolate ellipsoid, 2.85 by 2.1 mm. in size, the next a little larger is egg-shaped, about 5 mm. high by 4 mm. in width, both are provided with the characteristic oscules of the species, but without anchoring filaments; these are present, however, in specimens but very slightly larger (Pl. III. figs. 2, 3); and by the time the sponge has attained a length of 20 mm., they are already matted together into a compact basal lump. The largest specimen in the collection presents a somewhat cylindrical body, 70 mm. high by 85 and 70 mm. in breadth and width, it is seated on a basal spicular mass 50 mm. high, and 100 by 70 mm. in breadth and width; another large specimen is 47 mm. high, 52 mm. wide, and 43 mm. broad; with a basal mass 29 mm. high by 56 mm. broad and 49 mm. wide. In a few large specimens the basal mass is absent, and the anchoring spicules confined to a few ragged tufts; in one case a sponge with the form of a long prolate ellipsoid presents scarcely a trace of roots.

On cutting open the sponge a yellowish choanosome is exposed, surrounded by a whitish cortex, the thickness of which varies somewhat in different specimens, but on the average, in full-grown forms, is about 1.75 mm.; near the base it is produced into conical thickenings around the anchoring fibres as they pass out through it.

The spicular fibres proceed from a spicular core or so-called nucleus, which is situated excentrically within the choanosome, so as usually to lie much nearer one side of the sponge than the other. The core is a somewhat spherical mass of radiating spicules, with very little associated tissue, and consequently of great hardness; as the spicular fibres leave the core they become flexed somewhat sharply, particularly so on that side of the core which lies nearest to the exterior of the sponge; they then continue in a spiral course, but with a much gentler curve towards the exterior, from which they emerge usually more or less obliquely. The obliquity of emergence is often diminished by a slight change in the direction of curvature, sometimes amounting to a reversal, tending to bring the spicules into a position more nearly normal to the surface. The spiral curvature of the fibre is often so great that in a sponge of 30 mm. radius a single fibre may attain a length of 50 mm. It is different in amount in different directions within the sponge; being least, and indeed sometimes vanishing, along an axis which may, but which more frequently does not, correspond with the axis of symmetry of the sponge, and attaining a maximum in a plane at right angles to this. We may most readily picture this arrangement by supposing the spicular fibres to have originally a radiate direction, and subsequently to become twisted by a rotation of the cortex, carrying with it their outer ends, around any axis passing through the sponge.

The downwardly directed fibres of the sponge are usually less twisted than those ascending, so that they emerge normally to the surface to form the anchoring roots.

The direction of the spiral curvature of the fibres is sometimes left- and sometimes right-handed, in nineteen cases it was found to run counter to the hands of a watch, and in twenty-two with them; in three other cases, so far as one could judge from the direc-