

&c. My description is therefore necessarily restricted to the siliceous spicules, which in delicacy and variety of form are not surpassed by those of any other sponge.

The spicules of the parenchyma are long, filiform, slightly curved, smooth diacts; the ends are always knobbed and beset with fine spines. The middle point is generally marked by a swollen ring, or by *four* cruciate, or less frequently, *two* opposite bosses (Pl. LXX. figs. 6, 7). Between these long diacts which are isolated and disposed in strands, separate, peculiarly curved oxydiacts occur, and in some situations (*e.g.*, just below the skin) they are even more abundant. They measure about 0.3 mm. in length, and are covered not all round, but on one side, with minute tubercles and warts. Except on this side they are smooth. The curvature of these drawn-out spindles may be generally described as like that of a corkscrew, but both the pointed ends are slightly bent outwards (Pl. LXX. figs. 5, 8). I was not able to detect the axial canal, probably on account of the roughness of part of the surface. Besides the above, the parenchyma contains four different kinds of rosettes. One extremely rare form exhibits at the end of the comparatively short, simple, principal ray, six somewhat markedly diverging, long, straight terminals, arranged in a corona. The basal half of these terminal rays is very thin and delicate, while the outer, terminal half consists of a thicker, cylindrical, terminally rounded portion, like a *Typha*-spike (Pl. LXX. fig. 2). Another somewhat common rosette bears on the short, simple, principal ray a bundle of long S-shaped terminals, with toothed terminal plates which project outwards (Pl. LXX. fig. 3). The filamentous terminal rays, which are slightly thickened at their outer ends, are arranged like petals, but of unequal length—the median being longer than the external.

A third form of rosette is characterised by the inverted bell-shaped umbels formed by the long terminal rays, six of which diverge from the end of each of the short simple principals. These terminal umbels exhibit on the margin of a small, flatly convex, transverse disc, at the end of the terminal ray, about eight fine umbel rays, which extend parallel to one another towards the centre of the rosette, and form along with the terminal umbel an inverted bell-shaped structure (Pl. LXX. fig. 11). The fourth and most frequent form of rosette bears at the end of each of the short, simple, principal rays a bundle of long, thin, radiately disposed terminals, which gradually increase in diameter away from the base, and terminate in small, slightly convex, transverse discs with toothed margins (Pl. LXX. fig. 12). The number of terminal rays on this, often apparently spherical, discohexaster varies greatly. Each principal ray may bear from twenty to forty distinct terminals.

The dermal skeleton consists of smooth hexacts, mostly of median size. Their strong, freely projecting distal ray is club-shaped, *i.e.*, gradually increases terminally into a swollen knob, and occasionally exhibits several tubercles on its outer end (Pl. LXX. figs. 4, 6). The four tangential rays, which are always disposed at right angles, are also thickened terminally, and the conically pointed external end is roughened. The proximal ray is