

apex a tuft of divergent pointed spicules, which project freely for 2 cm. or more. The general form of the body, and the occurrence of these spherical elevations at approximately equal intervals on the outer surface, and especially the tufts of spicules projecting from their apices, produce a close resemblance between this sponge and certain prickly cactuses. I have for this reason given this form the specific designation *cactus*.

While the whole external surface of the body is covered with a fine meshed dermal network, the simple, smooth internal surface is covered with a firm gastral membrane, which is abundantly perforated by numerous round apertures, about 1 mm. in breadth.

The parenchymal skeleton exhibits numerous thickly distributed oxydiacts in variable disposition. These are, for the most part, surrounded by oxydiact comitalia of but slight development. Near the conically pointed ends these diacts are usually somewhat rough, but are otherwise smooth. In the middle they are usually quite smooth, though less frequently exhibiting a median thickening, or else four cruciate or two opposite elevations. Besides the slender comital oxydiacts, numerous isolated spicules of the same sort occur.

I have not observed in the parenchyma any simple hexacts of medium size, but only small, slender, isolated oxyhexacts, resembling in size the rosettes about to be described.

There is an abundant occurrence of the familiar oxyhexaster forms with short principal rays, and long, smooth, diverging terminals, which are here somewhat strongly developed (Pl. LVII. fig. 3). Between these, spicules occur of similar size and structure with six undivided rays, each of which exhibits, at the same distance from the common node of intersection as the point where the principals divide in the oxyhexasters, a sharp flexure, succeeded by a small curve, and finally by a straight portion continued on to the point. Spicules thus modified may be regarded as reduced derivatives of the above described oxyhexasters.

There is besides a not unfrequent occurrence of irregular rosettes, which seem at first sight to be quite distinct from the Hexactinellid type of spicule, since they almost always exhibit eight principal rays. These somewhat thick, but *not exactly cylindrical* rays, which spring from a thickened central node, are often beset with knot-like protrusions. Each bears a bundle of four to eight thin straight terminals of equal length, which diverge slightly from one another, without being sharply marked off from the principals. Each terminal ray bears on its extremity a minute disc (Pl. LVII. figs. 4, 5; cf. Pl. LXV. fig. 3). I am of opinion that some of these apparent principals have arisen by the splitting of real or primary principal rays. This is suggested, for instance, by the fact that at their base they are not cylindrical, but somewhat convergent and flattened. From the base of one ray a smooth link may be seen passing to the base of