

The dermal membrane of *Farrea occa* is supported by the four rectangularly intersecting tangential rays of simple pentacts, whose fifth rays penetrate into the parenchyma at right angles to the surface of the tube, while here and there a tubercle or knob-like distal elevation remains as the persisting trace of a sixth (distal) ray. While the proximal ray is always perfectly straight and slightly narrowed into a conical form towards the pointed end, the four tangential rays are usually bent gently inwards, and end in a slight usually blunted thickening, or in a somewhat knob-shaped swelling (Pl. LXXI. fig. 6). The proximal ray usually exceeds the tangential in length, is always cylindrical, and generally smooth with the exception of a slight roughness at the point. The tangential rays, on the other hand, are somewhat flattened on their outer side, and beset with smaller or larger tubercles which are sometimes pointed, sometimes rounded and boss-like. These tubercles or spines are usually strongly developed only on the gently convex and somewhat flattened side; on the lateral edges they are more weakly developed, and are altogether absent on the inner side of the tangentials. In some cases they have an isolated occurrence on the internal side. Towards the end of the rays the spines increase in height, and occur more densely and all round.

The disposition of these pentacts in the dermal membrane is frequently after this fashion, that the quadratic framework, which is formed from their apposed tangential rays, corresponds exactly to the subjacent dictyonal framework, each proximal ray being apposed to a distal prominence of the latter, and the tangential rays lying parallel to the beams of the dictyonal lattice-work. The meshes of the dermal lattice-work thus of course correspond in size to those of the dictyonal framework.

In other cases, as for instance in that on which the figures on Pl. LXXII. fig. 5 and Pl. LXXIII. fig. 1 were based, each distal prominence of the dictyonal framework corresponds indeed to the proximal ray of a dermal pentact, but besides this there is above the middle of each mesh of the dictyonal lattice-work a dermal pentact; and the tangential rays of all the dermal pentacts do not lie parallel to the beams of the dictyonal lattice, but diagonally to the quadratic or rectangular meshes. Often enough, however, no definite relation between the dermal pentacts and the dictyonal lattice can be determined except this, that above most of the distal rays of the latter there occurs a pentact of the dermal skeleton. The extent to which the corresponding opposite tangential rays of two adjacent dermal pentacts may overlap one another, varies in the different regions of the sponge. Each tangential ray frequently reaches almost to the nodes of intersection of the neighbouring pentact (Pl. LXXII. fig. 5).

Besides the pentacts above described, the dermal skeleton of *Farrea occa* contains clavulæ, which are so far in connection with the former since they always lie close beside the proximal ray. While they form an externally divergent tuft, the inferior pointed ends of the long stalk are usually in contact with the proximal ray of the related pentact, and the heads with their convex terminal discs lie about the level of the dermal membrane or