

are furnished with numerous small tubercles and pointed elevations. The portions of the main beams, on the other hand, which lie within the space enclosed by the buttresses are perfectly smooth, and are not inconsiderably thinner than the outer portions of the beams (Pl. CIV. fig. 3). As Marshall and Meyer have noted in detail in the *Mittheil. d. Zool. Museums, Dresden* (1877), the oblique buttresses round about the nodes of intersection are really spine-like processes of the main beams, growing out in a given direction from the external surface of two adjacent beams, until they finally meet and fuse with one another. That they are in fact simple spines is further demonstrated by the fact, which Marshall and Meyer have emphasised, that they have no axial canals, which can be distinctly detected, on the other hand, in all the beams of the main framework, and even on those thin portions which are enclosed by the lantern-like arrangement of the buttresses.

It need hardly be noted that here also the entire quadrate lattice-work is built up of single hexacts, in which the corresponding parallel rays are enclosed in a common siliceous sheath, and thus united.

Here and there, especially near the bounding surfaces, there are also simple, solid, slightly thickened nodes of intersection in the dictyonal framework.

The covering plate which encloses the sponge as in a capsule, apparently arises from the outward bending of the tube-wall at right angles, or in a trumpet-like curve. This is distinctly seen in the macerated specimen represented in Pl. CIV. fig. 2. In the two larger specimens it contains no connected skeleton, while in that trawled off Banda Islands (Pl. CIV. fig. 2), it is supported over a large extent by a dictyonal framework, which corresponds exactly to that of the tubular network, and is in fact a direct continuation of the latter.

In this form, better than in those obtained off Little Ki Island, a double principal canal can be seen, which seems to have opened with a free margin at the narrower end (Pl. CIV. fig. 2).

Sections through the wall of the tube show distinctly in many cases the structure of the soft parts. The deeply folded chamber layer is connected to the dermal membrane by a somewhat uniformly developed external trabecular framework, which extends also into the afferent clefts and passages. The internal trabeculæ, on the other hand, only extend between the sieve-like gastral membrane and the internally projecting folds of the chamber-layer (Pl. CIV. fig. 3), without being to any marked extent continued into the efferent canals. The chambers themselves are comparatively small and simply thimble-shaped.

The capsule has an average thickness of 0.3 mm., and exhibits between the outer and the inner porous limiting membrane numerous passages and vesicular cavities, but in the Little Ki specimens, at least, no chambers.

As to loose spicules, I found in the parenchyma between the chambers in the tra-