

opposites likewise. This is, however, better expressed in the figures of corresponding spicules in other species, e.g., *Hyalonema apertum* (Pl. XXXVIII. fig. 5).

The dermal skeleton is composed of large, strong, hypodermal pentacts, of autodermal pentact pinuli, and of autodermal amphidiscs of various kinds. The rays of the hypodermal pentacts are quite smooth and are directed at right angles to one another. They either run gradually to a sharp point or terminate conically. There is no hint whatever of the missing distal ray. The proximal ray is usually larger than the four equal-sized tangentials, but is sometimes smaller, and sometimes of equal length. The autodermal pinuli are pentacts. The proximal ray is no longer recognisable, but the distal is drawn out into a slim fir-tree-like form, about 0.3 mm. long, and beset with obliquely inserted and somewhat bent and pointed branchlets (Pl. XXVII. fig. 21). The basal end of the distal ray usually remains perfectly smooth. The four tangential rays, which lie at right angles to one another and to the distal ray, are straight and of equal size. Only near the somewhat blunt distal extremity do they exhibit some distally directed protuberances, while the large proximal portion of each ray is quite smooth (Pl. XXVII. fig. 21).

The very large kind of amphidisc which occurred in *Hyalonema sieboldii* is not present in this species. The largest form of amphidisc has a length of 0.14 mm. and a breadth of 0.06 mm. The axial rod is covered with protuberances, the highest of which are in the middle, and arranged in a circle. The eight terminal umbel rays on each side, which are disposed in a bell-like form, have a leaf- or spade-like shape, and terminate in a somewhat rounded lancet-like point. The basal plate is comparatively short. The individual terminal rays are sometimes laterally separated at their base by grooves, but sometimes, on the other hand, they are laterally united. The terminal arching of the bell-shaped umbel is not very broad, though strongly marked as the result of the divergence of the umbel rays. The extremities of the opposite umbel-rays approach one another to within a fourth of the whole length of the amphidisc. These larger amphidiscs always have their median portion inserted in the dermal membrane, so that the one half lies within the body of the sponge, while the other projects freely above the surface of the skin; but, besides these, several other smaller forms occur as represented in Pl. XXVII. figs. 15, 16, 17. These all exhibit a relatively broad arching of the much shorter terminal umbels, some of which consist of more than eight umbel rays. I have observed as many as thirteen umbel-rays in some of the medium-sized amphidiscs (Pl. XXVII. figs. 16, 17). The axial rod either exhibits a few small, irregularly distributed tubercles, or in addition to these four coarser, cruciately arranged, median prominences, which may also occur alone. The umbel-rays have narrow bases, they end in lancet-like fashion, and approach one another to the extent of not more than one-third of the total length (0.03 mm.) of the amphidisc. I never found these median and smaller amphidiscs except lying flat, that is, parallel to the surface of the dermal membrane.