

the sixth ray may also appear, occur typically in the two families of the Asconematidæ and Hyalonematidæ. Further differences between the unpaired fifth ray and the other four occasionally occur.

As in hexacts, so here curved rays often occur, and the ray may be curved throughout its whole length, or only in a particular portion. The curvature is frequently exhibited only by the four rays which form the cross, and these are usually curved towards the unpaired straight ray (Pl. LXXIV. figs. 1, 2). In many of the pentacts, which project from the sponge-body, this curvature of the four cruciate rays has been so effected that they have assumed an anchor form, and have, in fact, the function of an anchor (Pl. III. fig. 23; Pl. XXXIII. fig. 10).

Peculiar curvatures of a different kind are exhibited by the four cruciate and tangential rays of many pentact pinuli, which adhere closely to large siliceous beams of hypodermal spicules (Pl. LII. fig. 6).

The four rays, which lie at right angles to the two radials, form an acute angle with each other, and are sharply curved just at their origin in those large pentacts of *Rossella antarctica* (Pl. LV. fig. 9, 13), which have been protruded from the outer skin of the lateral wall.

In the fork- or broom-like spicules (*scopulæ*), which frequently possess four outwardly directed teeth in addition to the long stalk, I was, like O. Schmidt, unable to trace into the teeth the fine axial canals, though their cross of intersection is often very plainly visible just below the forking. It seems to me improbable, therefore, that the teeth can be regarded as principal rays, and all the more since their number is by no means always four or five, but sometimes six or more (Pl. XCII. figs. 4, 6; Pl. XCIV. fig. 5). I should be more inclined to compare them with the terminal rays of the rosettes. The invariably simple and straight stalk of the *scopulæ* either ends in a point, or is truncated, or exhibits a knob-like thickening. It is usually smooth, being but rarely provided, terminally or throughout, with tubercles or transversely directed prongs. The teeth, on the other hand, exhibit manifold variations in number, length, form, and position. They usually arise in whorls from, or just above the knot-like swelling on the stalk which contains the axial cross. They usually vary in number from four to six, but in individual cases more may be present. Sometimes they diverge but slightly at their point of origin (Pl. LXXXIV. fig. 5), and, in other cases, somewhat widely (Pl. XCVIII. fig. 8). After their original divergence they may also become parallel to one another, and to the chief axis (Pl. XCVIII. fig. 9). They are frequently simple in the gastral part, but exhibit in the dorsal part an S-like curvature (Pl. XCII. fig. 6), or are sharply bent somewhat above their origin, so that the outer portion is considerably divergent (Pl. LXXVII. fig. 10; Pl. XCIV. fig. 5). Some are pointed (Pl. LXXVIII. figs. 3, 5), and others truncated (Pl. XCII. figs. 5, 7), but most of them bear a knob-like or even spherical terminal swelling, which is usually provided with numerous fine backwardly