

The elongated spicules which form the root-tuft are either smooth or beset with barbs, disposed in various ways. While the upper end, which is concealed in the parenchyma, always runs out to a simple point, the free inferior extremity usually bears an anchor-like structure, which varies greatly in form and morphological significance. A knob-like terminal swelling may occur, from the sides of which a few prongs, arranged in a whorl, project obliquely upwards and outwards; or again, four cruciate rays may be present, lying in two typical axes, or rarely two rays in one transverse axis. These rays are bent upwards in hook-like fashion. In the first case we have usually to deal with diacts, in which the axial-canal cross is usually recognisable on the stalk, at some distance above the anchors, while the anchor-teeth do not exhibit any axial canal (Pl. XIV. fig. 5). In the other cases, however, we have to do with pentacts and triacts, in which four cruciate or two curved transverse rays lie in the same plane, with axial canals usually distinctly recognisable (Pl. III. fig. 23, and Pl. LIV. fig. 9).

The arrangement of the barbs on the anchor-stalk, and the form of the anchor-teeth, are often generically characteristic. In many root-tufts besides the anchor-spicules, simple pointed diacts frequently occur.

*Pleuralia*.—The spicules that project markedly from the lateral walls of the Sponge sometimes exhibit an essential similarity to the basalia, from which they cannot, indeed, be sharply separated even in regard to position. In *Pheronema giganteum*, for instance (Pls. XLV., XLVI.), bundles of long spicules with round swellings are radially distributed, with tolerable regularity, over the whole outer surface; and those directed downwards (basalia) differ from those placed in a more lateral position (pleuralia), only in their greater length, slight curvature, and union in a basal tuft. In the *Polylophus philippinensis* (Pl. LIV. fig. 1) numerous pleural spicules assist in the formation of a local tuft, by bending down and becoming approximated to the basalia. The outermost termination of these pleuralia exhibit the same anchor-structures as are present in the basalia of the same form. Thus, both in pleuralia and basalia, in *Pheronema giganteum*, for instance, two slightly bent hooks, lying in the same transverse axis, occur (Pl. XLV. fig. 9), and in *Polylophus philippinensis* four intersecting transverse rays with a gentle curvature (Pl. LIV. fig. 9).

In other cases the prominent radial pleuralia, which occur either in bundles or isolated, have the form of simple, terminally pointed diacts. This is the case, *e.g.*, in *Acanthascus* (Pl. LVI. fig. 2). In *Euplectella suberea* the long, slightly bent radial rays of the large principal pentacts of the quadrate lattice-work extend radially beyond the side walls (Pl. V. figs. 1, 15). In *Rossella velata*, on the other hand, the external end of the large pentact is that at which the four tangential rays intersect at right angles. All these pentact pleuralia project for nearly equal distances from the surface, and almost touch each other laterally, so that a delicate veil is formed, enveloping the whole Sponge.