

On the supposition that the arrangement of the parenchymalia will be least modified where the original form of the Sponge is a thin-walled sac, and the typical six-rayed condition of the spicules most distinctly persist, I will start from such conditions as occur in *Holascus* and *Farrea*. Here the chief supporting framework of the parenchyma is formed of large regular hexacts, which are disposed at right angles or parallel to the bounding surfaces. These forms, which may be termed *directalia*, simply lie in the one case with their corresponding rays apposed to one another (Pl. XVI. fig. 2; Pl. XVII. fig. 2), while in the other they are closely united into a rigid framework (Pl. LXXIII. fig. 2; Pl. LXXVI. fig. 5).

The invariably six-rayed spicules, which are concerned in the formation of the continuous dictyonal-skeleton, and which I call *dictyonalia*, are always distinctly recognisable as such, for even when they have not become connected into a regular cubical meshwork, but only in an irregular manner, they are readily recognised by their axial canals. This is not the case with the spicules indicated as *principalia*, which form the chief supporting framework of the parenchyma in the Lyssacina, for these, like the dictyonalia, do not retain their typical position, and further, by no means always exhibit the six rays, being frequently reduced to pentacts, tetracts, or even indeed to simple diacts. Thus, in *Euplectella aspergillum*, for example, tetracts occur in the formation of the quadrate lattice-work on the inner side (Pl. II. figs. 2, 5), while in *Euplectella suberea* (Pl. V. fig. 15) and in *Euplectella nodosa* (Pl. XIV. fig. 2) pentacts occur for the same purpose and in the same positions; in *Crateromorpha*, *Rhabdocalyptus*, and *Aulochone*, numerous strong diacts are found both in the body and in the stalk.

Closely apposed to the strong rays of the principalia slender elongated spicules frequently occur, with two or three rays, but seldom more (Pl. XVII. fig. 6). These I would call *comitalia*. They are sometimes straight and parallel to the corresponding ray of the principal spicule, but they usually extend in a winding and wave-like manner on or round the outer surface of the principal.

In regard to the position of the parenchymalia, which are found more or less abundantly between the dictyonalia or the principalia and their attendant comitalia, few general points can be noted. While elongated spicules of this category frequently run at right angles to the surface (as the uncinata of many Dictyonina), or are disposed in any other way with complete regularity, very numerous, small, crowded spicules often occur, like the small hexacts, the rosettes and their derivatives, which are almost always scattered quite irregularly in the parenchyma.