however by any means form a regular lattice-like framework with cubical mesh-spaces. A framework with predominantly three-sided meshes is in fact formed, on the one hand by the diversion of some rays from their original position at right angles to one another, on the other hand by quite irregular fusion of the rays of adjacent hexacts. In older portions these meshes appear distinctly compressed and rounded. The surface of the beams may be completely smooth, or may be roughened by the development of more or less numerous small pointed tubercles. The pegs projecting outwards towards the dermal membrane, or inwards towards the gastral membrane, are always beset with numerous tubercles and are frequently swollen in a knob-like manner. While the freely projecting dermal pegs are usually straight, that is to say, usually stand at right angles to the surface, the projecting pegs on the gastral side are found to be mostly incurved or thickened into short knobs (Pl. LXXXIV. fig. 1). The ends of the free rays of the dictyonalia which project from the surface of the septa into the lumen of the meshes also exhibit rough conical pegs which are seldom directed quite at right angles to the wall of the canal, but project as a rule obliquely.

The dermal skeleton consists of hexacts which form a regular quadrate network and are provided with a fir-tree-like distal ray (Pl. LXXXIV. fig. 8), and very variously formed scopulæ. The four equally long transverse rays, as well as the usually distinctly shorter proximal ray of the dermal hexacts, are either smooth or somewhat rough on the truncated extremities.

In the dermal scopulæ I observe that the shaft, which is of variable length, runs out at the inner extremity to a point, while the outer extremity, which is moderately swollen, or more rarely provided with a knot-like thickening, gives off four (more seldom three or five) prongs which either terminate in a point or are provided with a knob-like or club-like terminal expansion. Both on the pointed extremities and also on the terminal clubs or knobs small lateral barbs usually occur (Pl. LXXXIV. figs. 4, 5). The branches of most of the scopulæ possess the usual length of about 0·07 mm. Scopulæ also occur here and there which have the branches twice as long, and either terminate in points with small smooth knobs, or are beset beneath the extremity with small barbs (Pl. LXXXIV. figs. 3, 5).

In contrast to the Dictyonina hitherto described, the *gastral skeleton* of *Aphrocallistes bocagei* differs very essentially from the dermal. On the surface of the gastral wall I find neither hexacts nor pentacts, nor any trace of scopulæ, but only diacts of variable length, more or less rough, sometimes even pronged, with rounded extremities and central knots variously developed. These diacts lie properly in the gastral membrane, but they also extend into the subgastral space, and seem not unfrequently to fuse with the projecting, but frequently incurved and club-like swollen pegs of the dictyonal framework.

The loose parenchymalia include the uncinates, which are disposed at right angles to the bounding surface, and vary greatly in length and strength. The inner extremity