Zoology Part LIII: Report on the HEXACTINELLIDA. By Professor F. E. Schulze. Bound in Volume 21,1887.

predominate, and indeed the anchor-like forms may decline to such an extent, that they are only found here and there.

I have taken special pains to try to elucidate the characters of the soft body and especially the system of chambers in those specimens which are best preserved. Neither the dermal nor the gastral membrane exhibits any special peculiarities. Where the dermal network has been in any way preserved, it exhibits meshes of variable width, sometimes very narrow as represented in Pl. LXXI. fig. 3 and Pl. LXXII. fig. 5, and sometimes so wide, that the whole rectangular region between four adjacent pentacts exhibits only one large round aperture. The gastral membrane exhibits similar relations.

In the younger portions, which are supported only by a single reticulate layer of the dictyonal framework, the chambers form a simple, or slightly folded layer of large saccular or thimble-shaped diverticula of variable size. Below the rectangular meshes of the dictyonal framework, they unite to form a wide excurrent space (Pl. LXXI. fig. 3), so that, on looking down from the gastral surface, below each mesh, one finds a large excurrent aperture. When the thickening of the wall towards the base of the stock results in a dictyonal framework of several layers, broad canals traverse this thick wall. The chambers, which are directed obliquely, then appear rather as lateral and terminal diverticula of the wide principal canals, and seem to be continuous with them without any marked boundary (Pl. LXXIII. fig. 2).

The number of chamber-wall pores varies greatly in the different regions of the body and in different specimens. The thin layer of connective substance which forms the walls of the chambers bears internally the epithelial cells, arranged in rectangular fashion as in *Euplectella*, and also united by the same lateral processes into a rectangular network. The trabecular framework which extends between the two bounding membranes and the chamber layer consists of delicate strands with fine expansions at the points of insertion and union.

In many cases the external surface of the chamber wall exhibits numerous groups of small, crowded cells, with nuclei which stain with special readiness. It is possible that these groups of six to twelve cells are concerned with reproduction; I have at least remarked their total absence in several specimens which contained numerous sperm balls at various stages. I have unfortunately found no ova or larvæ. It is true indeed that in one fragment from Sagami Bay, the subdermal trabecular space contained numerous blastulæ in some regions, but whether these belong to the *Farrea* or to some commensal, or perhaps to some quite unconnected form, it is difficult to determine, since the state of preservation of the specimen was by no means favourable. The minuteness of the larvæ (0·03 mm. in diameter) seemed, however, noteworthy.

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