The mesoderm of the choanosome is a sarcenchyma in this as in the preceding individual, and in both the flagellated chambers are aphodal. The aphodal canals have not the appearance of metamorphosed folds, and are more probably produced by the growth of the surrounding mesoderm converting the original eurypyles into narrow canals.

The ectosome evidently does not share in the folding of the choanosome; the two regions appear to behave as independent structures. We may imagine their separation to be produced in one of two ways: either an invagination of ectoderm may occur at various points on the surface of the sponge and there initiate the inwardly directed folds, or an actual cleavage may occur along the lines now occupied by the subdermal cavities.

The ectosome in this sponge consists of collenchyma, excavated by a few inconspicuous vesicles, which, on close examination, are found to communicate both with the exterior and the subdermal cavities.

The third young sponge examined (Pl. XVI. fig. 19) measured about 2·0 by 2·6 mm. The subdermal cavities are now well marked off from the incurrent canals, owing to the continued folding of the choanosome; they form an almost continuous cavity about 0·214 to 0·36 mm. thick beneath the ectosome, which is twice as thick as in the preceding stage (0·214 mm.). It consists of collenchyma containing fibre-cells, partly more or less irregularly dispersed, partly forming a thin layer immediately beneath the subepithelial spherasters, and partly arranged as a thin felt over the inner face of the ectosome. This last-named felted layer is the rudiment of the thick fibrous part of the adult cortex.

The vesicular cavities which appear in the ectosome in the preceding stage have now acquired a comparatively large size, and present a striking feature in the young cortex (Pl. XVI. fig. 20). They extend completely across it, and are evidently destined to become the chones of the adult. The cortex is thus formed by the growth and differentiation of a dermal membrane or ectosome, the subcortical cavities are the remains of subdermal cavities, and the chones independent structures, not produced by the original folding of the sponge, but arising subsequently, in connection with the thickening and differentiation of the ectosome.

Subfamily 3. Sanidasterina.

Heterasterose Stellettidæ, in which the additional microsclere is a sanidaster.

Genus 6. *Tribrachium*, Weltner.

Sponge produced into a special cloacal tube, the megascleres of which are orthodiænes. The microscleres are sanidasters.