

and small spaces, and extended continuously over the spaces and openings. No wide gastral cavity or oscular opening is to be recognised.

The microscopic examination of the dictyonal framework reveals a somewhat irregular network of beams which are beset with moderately large smooth tubercles of irregular number and arrangement. The beams never exhibit a spherical thickening of the nodes of intersection. In dead portions the axial canals of the dictyonal hexacts are here and there greatly enlarged, and accordingly well marked. The dermal skeleton consists chiefly of moderately large, smooth, or only terminally somewhat tubercled pentacts, which form by their apposition a beautiful square meshed lattice-work. In addition to this, bundles of fine spicules pointed at both ends jut out, and scopulæ of different forms occur, but especially forms provided with rough pointed shafts and four strong, almost or absolutely parallel teeth, densely beset with barbs. These teeth spring from a simple conical expansion of the shaft, and possess no knob-like terminal swellings (Pl. XCII. fig. 5).

On the surface of the large inner strands and plates of the dictyonal fibrous framework there are no pentacts, but only scopulæ, and unpointed fine spicules which also appear to constitute the skeleton of the gastral membrane.

In the parenchyma, and between the reticulated beams of the dictyonal framework, there are uncinates, which usually exhibit a slight curvature, and further, those spicules which are characteristic of the genus *Cyrtaulon* and were first described by Oscar Schmidt, who regarded them as discohexasters with a greatly prolonged ray. These forms exhibit a simple shaft, which runs out to a fine point, and is provided on the pointed terminal portion with rough knobs; on the other extremity with a knob- or ball-like thickening, which bears a somewhat large number of thin terminal rays with terminal discs. The thickening which occurs close beneath the pointed extremity of the arrow-like shaft in *Cyrtaulon (Volvulina) sigsbeeii* is here entirely wanting. This peculiar form of spicule may be best regarded as a modification of a hexaster, but I have not found any indications of the basal parts of principal rays, except the long shaft. All the thin terminal rays originate directly from the knobbed terminal thickening of that shaft. In addition to the scopulæ with four thick rough teeth, already mentioned in the dermal skeleton, other forms with four thin smooth teeth and simple terminal knobs apparently occur in the parenchyma, in addition to those which bear six thin smooth similar terminal rays with terminal knobs or discs (Pl. XCII. fig. 6). If one imagines the number of these teeth to be increased and their position more irregularly radial, one can also understand the unusual form of parenchymalia. I have not found any regular hexacts in *Cyrtaulon solutus*.