

*D. flabelliforme*. Mr. Salter fully understood the cup-like form of the species which he described and its relation to the graptolites, and his name well expresses the multitudes of these delicate organisms which are exposed in breaking open layers of the *Dictyonema* shale.

For a long time the idea prevailed that this organism was rooted in the mud and grew on the sea bottom. One author speaks of the lower part of the hydrosome as a kind of cage buried in the mud, which supported the cup in an upright position, but it does not seem at all clear that *Dictyonema* was in any way thus attached. The sicula or initial point is altogether too small and slight to give support to the structure growing from it, and the living cells begin immediately above the sicula, and therefore, it is improbable that the lower part of the hydrosome was buried in the mud. *Dictyonema* seems rather to have been a free organism, floating in the ocean, and perhaps capable of moving by means of ciliæ or fleshy appendages which have not been preserved.

*Dictyonema* began life as a *Bryograptus*, if we may judge by the appearance of the hydrosome, which did not develop connecting threads on the primary branches, and usually not until the growth of the secondary branches was completed. Then gradually and more numerous as the hydrosome grew, the cross threads appeared.

It is in keeping with this that *Dictyonema* was not the first form of the Graptolite family that appeared. Besides a few poorly preserved forms of the Lower Cambrian rocks, there were in Sweden and Acadia two genera of graptolites which either preceded it or appeared with it; these are *Trichograptus* or *Clonograptus*, and *Bryograptus*.

G. Linnarsson discovered a graptolite in West Gotland, which he referred to *Dichograptus*. It is a small, slender form with distant cells, which, by H. A. Nicholson, has been referred to *Trichograptus*, and by O. Hermann to *Clonograptus*. The species was found with the trilobite *Sphaerophthalmus alatus*, and therefore, should be older than the *Dictyonema* schists.