

might occur between the Olenus schists and the Dictyonema schists." The conditions in Scania appear to correspond with those in Acadia, as the trilobites of the "Upper Olenus Beds," (Div. 3a. and b. of the St. John Group), are mingled with Dictyonema. But on the other hand, the upper or typical Dictyonema beds (Div. 3c.) at St. John, have so far yielded no trilobite

Dictyonema also has associated with it at St. John, several species of Brachiopods,—an *Obolus* somewhat like *O. Apollonis*, Eichw., also an *Obolella*, a *Linnarssonina* like *L. misera*, Bill; and a *Lingula* or *Linguella*.

Dictyonema lived long enough in the St. John basin to develop considerable differences in the appearance and structure of the hydrosome. We recognize two varieties which are probably the same with those mentioned by Dr. Brögger as existing in Scandinavia, and we also observe that the variety most common in Acadia differs from the type in having more numerous, because more closely set hydrothecæ. The variety *Norvegicum* characterised by heavy cross-bars has changed from the type in the direction of *D. quadrangularis* Hall, of the Levis shales, and the special Acadian variety in the direction of Sir J. W. Dawson's species *D. delicatulum* of the same shales. The former variety is known to occur in the St. John basin at the Arenig horizon (Div. 3d.), but the latter though known at Quebec, has not been found here.

Including the Dictyonema beds we now have in the third or Bretonian division of the St. John group the following well characterized horizons:—

a. Zone of *Parabolina spinulosa* (formerly described as Zone of *Leptoplastus stenotoides*).

b. Zone of *Peltura scarabeoides*, contains also *Dictyonema flabelliforme*.

c. Zone of *Dictyonema flabelliforme*, typical development of the species.

?. Several hundred feet, fauna unknown.

d. Zone of *Dichograptus Logani* and *Tetragraptus*, 4-branchiatus, &c.