

These branching rootlets are sufficiently described and illustrated by Dawson. They occur as flattened impressions, and do not penetrate the rocks in such a way as to indicate that the plants grew *in situ*.

Genus *ASTEROPHYLLITES*, Brongniart.

1822. *Asterophyllites*—Brongniart, *Classif. végét. foss.*, p. 210 (pars).

Calamitean foliage. Generally showing whorls of branches, each with whorls of leaves. The leaves lineal and single nerved. The leaves in one whorl uniform in length, but the whorls vary according to their position on the plant. See Jorrmans, 1911, p. 202 et seq. for a recent account of the genus.

*ASTEROPHYLLITES ACICULARIS*, Dawson.

(Pars = *A. equisetiformis*, Schl.)

Plate IV, figure 6.

- 1868. *Asterophyllites acicularis*, Dawson, *Acadian Geol.*, ed. 2, p. 537, fig. 194, H. & H2.
- 1862. *Asterophyllites acicularis*, Dawson, *Quart. Journ. Geol. Soc.*, vol. 18, p. 310, pl. XIII, fig. 16.
- 1871. *Asterophyllites acicularis*, Dawson, *Foss. Pl. Devon. Upp. Silur.*, Canada, *Geol. Surv. Rep.*, p. 28, pl. V, figs. 54-57.
- 1888. *Asterophyllites acicularis*, Dawson, *Geol. Hist. Pl.*, p. 82, fig. 31 H (in 1905 Ed.)
- 1900. *Asterophyllites acicularis*, Dawson, *Kidston in Ami. Ottawa Nat.*, vol. 14, p. 100 (= *Calamocladus equisetiformis*, Schlotheim sp.).
- 1906. *Annularia acicularis*, (Dawson) Matthew, *Trans. Roy. Soc. Canada*, ser. 2, vol. 12, p. 127, pl. V, figs. 1, 2, 3.
- 1910. *Annularia acicularis*, (Dawson) Matthew, *Trans. Roy. Soc. Canada*, ser. 3, vol. 3, p. 94.
- 1910. *Annularia acicularis*, (Dawson) Matthew, *Bull. Nat. Hist. Soc. New Brunswick*, vol. 6, p. 247.
- Cf. 1911. *Asterophyllites equisetiformis*. Schl. Jongmans *Anleit. Bestimm. Karbon. West Europas*, pp. 204-208.

All the specimens which I have seen are exceedingly fragmentary and really indeterminable. Some of those figured earlier (e.g. Dawson 1862, pl. XIII, fig. 16) might very well be a delicate form of *A. radiata*. In figure 6, pl. IV of the present paper, is shown the original of Dawson's fig. 54, pl. V, in his 1871 monograph, which is now in the McGill University collections, No. 3333. It can hardly be doubted that this specimen corresponds with *A. equisetiformis* so far as it goes.

Mr. David White (1900, p. 898) records this species from the Pottsville of the United States, but does not illustrate his