3. **Equiseta** or **Horse-tails.** — *Calamites* (named from *calamus*, a *reed*, in allusion to their reed-like or rush-like aspect) are ancient Equiseta. Fig. 900 represents a portion of a stem (in horizontal position) flattened out by

900. 901.

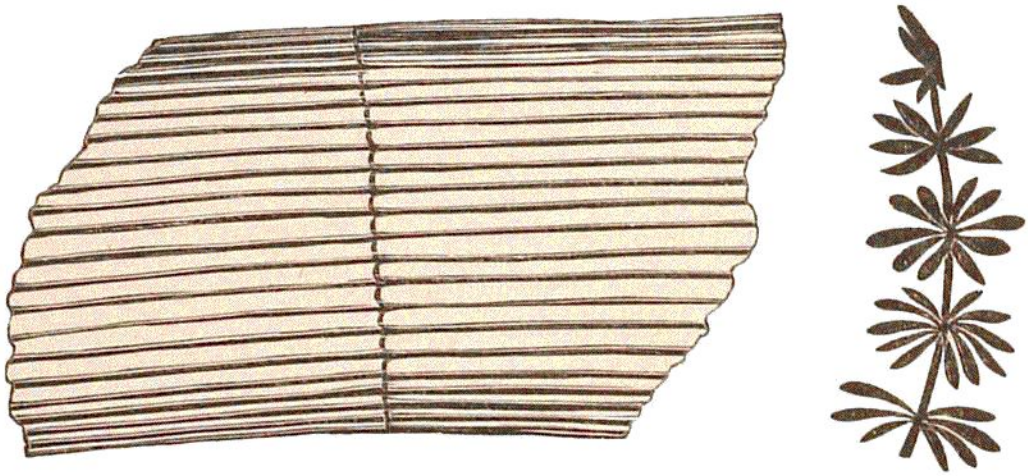

Fig. 900, Archæocalamites radiatus; 901, Asterophyllites latifolius. Dawson.

pressure. It shows that the Devonian species of the tribe exceeded much in size the modern species; as in recent kinds, the stems were jointed (*ab*). A plant of the same tribe, called *Asterophyllites* (because of the arrangement of the leaves in stars), is represented in Fig. 901.

4. **Gymnosperms.** — Gymnosperms were represented by species of the Yew family (Taxineæ), and by leaves of plants of the tribe of Cycads. Trunks a foot in diameter, of the former, occur in the black shale of the Hamilton, and others as large, or larger, in the New Brunswick beds. Most of the latter are referred by Dawson to the genus *Dadoxylon*. To the Cycad family belongs the *Cordaites Robbii*, a leaf of which, from a cluster figured by Dawson, is represented in Fig. 896. It is questioned whether leaves like those of *Archæopteris* may not be from a related Cycadean, as one genus of modern Cycads, *Strangeria*, has fern-like leaves (Williamson). Fossil nuts were found with the specimen of *C. Robbii*, which "may have belonged to it" (Dawson).

5. **Sporangites.** — Spore-cases and spores are abundant in the black Marcellus shale of New York and Pennsylvania, and are a prominent source of its bituminous character. They are usually minute black shining spots in the shale.

ANIMALS. — The animal remains of the Marcellus are comparatively few, and, excepting the Cephalopods, generally small. Their small number corresponds with the fact that the rock is a fine shale. In the Hamilton beds, which are coarser, and often resemble a consolidated mud-bed, fossils are much more numerous; but Lamellibranchs and Brachiopods are most abundant, as is usual in impure waters.

1. **Spongiozoans.** — A Middle Devonian species of *Sphærospongia*, first described by Phillips from British specimens, is represented in Figs. 902 *a*, *b*,