

mind that they are usually the marks of cones; and the great size of the cones of *Lepidophloios* accords with this conclusion.

The species of *Lepidophloios* are numerous, and individuals are quite abundant in the coal formation, especially toward its upper part. Their flattened bark is frequent in the coal-beds and their roofs, affording a thin layer of pure coal, which sometimes shows the peculiar laminated or scaly character of the bark when other characters are almost entirely obliterated. The leaves also are nearly as abundant as those of *Sigillaria* in the coal-shales. They can readily be distinguished by their strong, angular mid-rib.

The markings of *Lepidophloios* may easily be mistaken for those of the *Clathraria* type of *Sigillaria*. When the stem only is seen, they can be distinguished by the length of the leaf-bases in *Lepidophloios*, and by the dominant central vascular scar; also by the one-nerved and ribbed leaves. Where the large, round marks of the cones are present, these are an infallible guide, never being present in *Sigillaria*. As the cones grew on the upper sides of the branches, the impression of the lower side often shows no cone-scars, or only two lateral rows, whereas on the upper side of the same branch they appear spirally arranged. I may describe as an example—

*Lepidophloios Acadianus*, Dawson. Leaf-bases broadly rhombic, or in old stems regularly rhombic, prominent, ascending, terminated by very broad rhombic scars having a central point and two lateral obscure points. Outer bark laminated or scaly. Surface of inner bark with single points or depressions. Leaves long, linear, with a strong keel on one side, five inches or more in length. Cone-scars sparsely scattered on thick branches, either in two rows or spirally, both modes being sometimes seen on the same branch. Scalariform axis scarcely an inch in diameter in a stem five inches thick. Fruit, an ovate strobile with numerous acute scales covering small globular spore-cases. This species is closely allied to *Ulodendron majus* and *Lepidophloios laricinus*, and presents numerous varieties of marking. Coal-formation, Nova Scotia.

*Family* CALAMITEÆ; *Genus* CALAMITES, Suckow.

The plants of this genus are unquestionably allied to the modern *Equisetaceæ*, but excel these so much in variety of form and structure, and are so capricious in their states of preservation, and so liable to be mistaken for parts of plants generically different, that they have given rise to much controversy. The following considerations will enable us to arrive at some certainty.

The genus *Calamites* was originally founded in the longitu-