and narrow furrows, and undulated in a remarkable manner even when the stems are flattened. This undulation is, however, perhaps an indication of vertical pressure while the plant was living, as it seems to have had an unusually thin and feeble cortical layer, and the undulations are apparently best developed in the lower part of the stem. At the nodes the ribs are often narrowed and gathered together, especially in the vicinity of the rounded radiating marks which appear to indicate the points of insertion of the branches. At the top of each rib we have the usual rounded areole, probably marking the insertion of a primary branchlet.

The branches have slender ribs and distant nodes, from which spring secondary branchlets in whorls, these bearing in turn small whorls of acicular leaflets much curved upward, and which are apparently round in cross section and delicately striate. They are much shorter than the leaves of *Calamites Suckovii*, and are less dense and less curved than those of *C. nodosus*, which I believe to be the two most closely allied species.

Lesquereux notices this species as characteristic of the lower part of the Carboniferous in Arkansas.

It will be observed that I regard the striated and ribbed stems not as internal axes, but as representing the outer surface of the plants. This was certainly the case with the present species and with *C. Suckovii* and *C. nodosus*. Other species, and especially those which belonged to Calamodendron, no doubt had a smooth or irregularly wrinkled external bark; but this gives no good ground for the manner in which some writers on this subject confound Calamites with Calamodendra, and both with Asterophyllites and Sphenophyllum. With this no one who has studied these plants, rooted in their native soils, and with their appendages still attached, can for a moment sympathise. One of the earliest geological studies of the writer was a bed of these erect Calamites, which he showed to Sir C. Lyell in 1844, and described in the "Proceedings of the Geological Society" in 1851, illustrating the habit of growth as actually seen well exposed in a sandstone cliff. Abundant opportunities of verifying the conclusions formed at that time have since occurred, the results of which have been summed up in the figures in Acadian Geology, which, though they have been treated by some botanists as merely restorations, are in reality representations of facts actually observed.

On these subjects, without entering into details, and referring for these to the elaborate discussions of Schimper, Williamson, and McNab, and to my paper on the subject, "Journal of the Geological Society," vol. xxvii, p. 54, I may remark: