

was referred to the *Salisburiaceæ*, in which it was ranged with *Dicranophyllum*, *Rhipidopsis*, *Trichopitys*, *Ginkgophyllum*, and *Baiera*, the earlier relatives of the living genus *Ginkgo*. This reference, which was accepted by Schenck,¹ appears to find favour with most foreign palæobotanists² who have more recently considered the relationship of the American genus, though Solms-Laubach,³ regards it as based on too slender evidence.

In the absence of any precise knowledge of the florescence or fruits of *Whittleseya*, any systematic reference of the genus is based almost wholly on the characters and analogies of the leaves, and must therefore be regarded as hypothetical and tentative. Yet the development and the nervation of the leaf are such as practically to exclude a comparison with any Cryptogamic type, and to at once suggest a gymnospermic nature. Further, the analogies between the leaf structure of *Whittleseya* and those of *Ginkgo*, and more particularly with the more ancient forms of that type, are so striking as to compel a comparison with both the living and the fossil representatives of the Ginkgoales. These analogies are illustrated by the almost identical characters of the nervation and distal border of the leaf in *Whittleseya microphylla* and in the recent *Ginkgo*. Among some of the additional Appalachian Pottsville material, which will probably receive special attention in a later paper, are several fragments which appear to indicate a probably spiral arrangement of the leaves, the latter forming, in *W. microphylla*, very loose tufts at the ends of the twigs.

There are also two conditions which favour a direct relationship of the American type to the Ginkgoales: First, there is the extraordinary antiquity of the genus *Ginkgo* which is clearly identified in the older Mesozoic, while its antecedents or closer relatives, *Baiera* and *Ginkgophyllum*, are present in the Permo-Carboniferous, in which are also found a number of the immediately allied types. In this connection it will be of interest for the reader to compare the *Whittleseya* with the group illustrations of *Ginkgo*

¹ Die foss. Pflanzenreste, 1888, p. 166.

² See Zeiller, Élem. de paléobot., 1900, p. 251. Also see Seward and Gowan, in Annals Bot., vol. XIV, 1900, p. 135.

³ Fossil Botany, 1891, p. 66.