

Count Sternberg, taking for the basis of his arrangement the varieties in the configuration of the circumambient scales, has divided this family thus :

Tribus 1. (*Lepidotæ*) squamis convexis.

a. scutatæ. Species 7. figured in his first part, and many additional in the second.

b. escutatæ. Species 1.

Tribus 2. (*Alveolaria*) squamis subconcaris. Species 3.

These general divisions may probably stand, but the subdivision into species appears to require reconsideration ; for the character assumed as the basis of the classification—the figure of the scales—appears to vary in different parts of the same individual, as will be obvious in comparing the scales on the basis of the stem, and the branches and extreme shoots of Sternberg's first species ; and, if Steinhauer's observations are correct, a still more formidable difficulty will oppose itself to the use of this character without extreme caution ; for, according to him, the impressions of the different integuments of these stems, (or as he calls them from the parts of the original plant whence he conceives them to have resulted) the epidermal, cortical, and ligneous impressions of the same species, present varieties of aspect which at first sight appear quite irreconcilable : we proceed to such of his species as we are acquainted with among the English series, and as are clearly distinct.

1. *Lepidodendron dichotomum*. S. C. Stem dichotomous and branching ; lower scales obovate : superior scales rhomboidal, scutate in the middle, the scuta marked horizontally with three glandules at the insertion of the leaves ; narrow linear leaves 12 to 18 inches long.

Sternberg figures a magnificent specimen 12 feet long, several of the extreme shoots surrounded by their long acicular leaves, and in one instance assuming an appearance like infrutescence ; thus much more is known of this than of any other among the coal plants. Detached parts are frequent in our own coal. Sternberg observes, “ la stature elancée de ces arbres, la dichotomie des branches, les feuilles extrêmement longues et étroites, qui en environnent les tiges sur lesquelles elles sont rangées en spirales continues, sont, si je ne me trompe, des indices caractéristiques d'une espèce d'arbre inconnue.”

Martin Pet. Derb. T. 50. represents the middle of the stem at T. 14. upper, and perhaps also lower figure, its extreme shoots.

Sternberg's 2nd, 4th, and 7th species we are not certain of as English fossils.