
Victoria Park

Highlights

Victoria Park has the best known examples of *in situ* stumps of arborescent lycopsids in the Lower Carboniferous, providing a unique insight into the forests which were starting to dominate the palaeoequatorial regions at that time (Figure 5.47).

Introduction

This famous locality is under a covered enclosure in Victoria Park, Glasgow [NS 541 673], and shows a cluster of *in situ* Namurian lycopsid stumps, sometimes called the 'Fossil Grove' (Figure 5.48). In addition to its palaeobotanical interest, it is significant as one of the earliest examples of a conserved earth science site (Black, 1988). The stumps were discovered in 1887 (Kidston, 1888), but were not described in detail until MacGregor and Walton (1948, 1972; see also Mclean, 1973; Lawson and Lawson, 1976). The most comprehensive account to date is by Gastaldo (1986).

Description

Stratigraphy

The stumps lie within the Limestone Coal Group, of early Pendleian age (Figure 5.49). They are rooted in a silty mudstone, which Gastaldo (1986) interpreted as a palaeosol, and the aerial parts were originally entombed in sandstones, which were probably crevasse-splay deposits.

Palaeobotany

Eleven stumps are preserved *in situ* here (Figure 5.49), and are of an average height of c. 0.4 m. The rooting structures are clearly of a *Stigmaria*-type, and so the trees must have been arborescent lycopsids. There would appear to be the equivalent of about 4500 trees per km².

Interpretation

Such stands of *in situ* lycopsid stumps are relatively common in the Upper Carboniferous (see Williamson, 1887 for a review of some of the early evidence), where they represent the remains of extensive forests that came to dominate the equatorial regions. However, these are the only conserved examples of such lycopsid stumps in the Lower Carboniferous.

A curious feature of the stumps is that they have an elliptical transverse section and are all aligned in about the same direction. MacGregor and Walton (1972) interpreted this as due to tectonic distortion, but Gastaldo (1986) has pointed out that there is little other evidence of tectonic deformation here. Instead, Gastaldo argued that the stumps were at least partially hollowed-out prior to being fully engulfed in sediment, and that the distortion was a result of 'streamlining' by the entombing sediment.

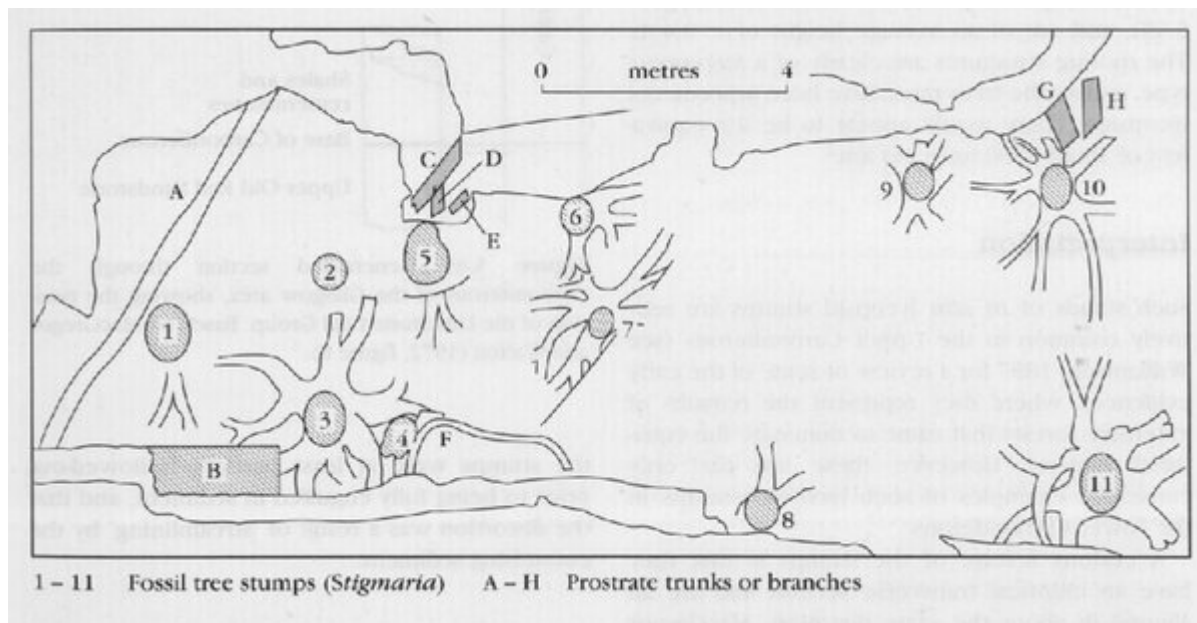
Conclusion

Victoria Park has the only preserved examples of *in situ* stumps of giant club-mosses in the Lower Carboniferous, some 325 million years old. They allow us to estimate the tree density in the forests growing at this time in Britain as about 4500 per km². Most localities containing plant fossils only yield fragments of stems, leaves or reproductive organs, that were washed from the site where they grew. This makes localities such as Victoria Park all the more remarkable.

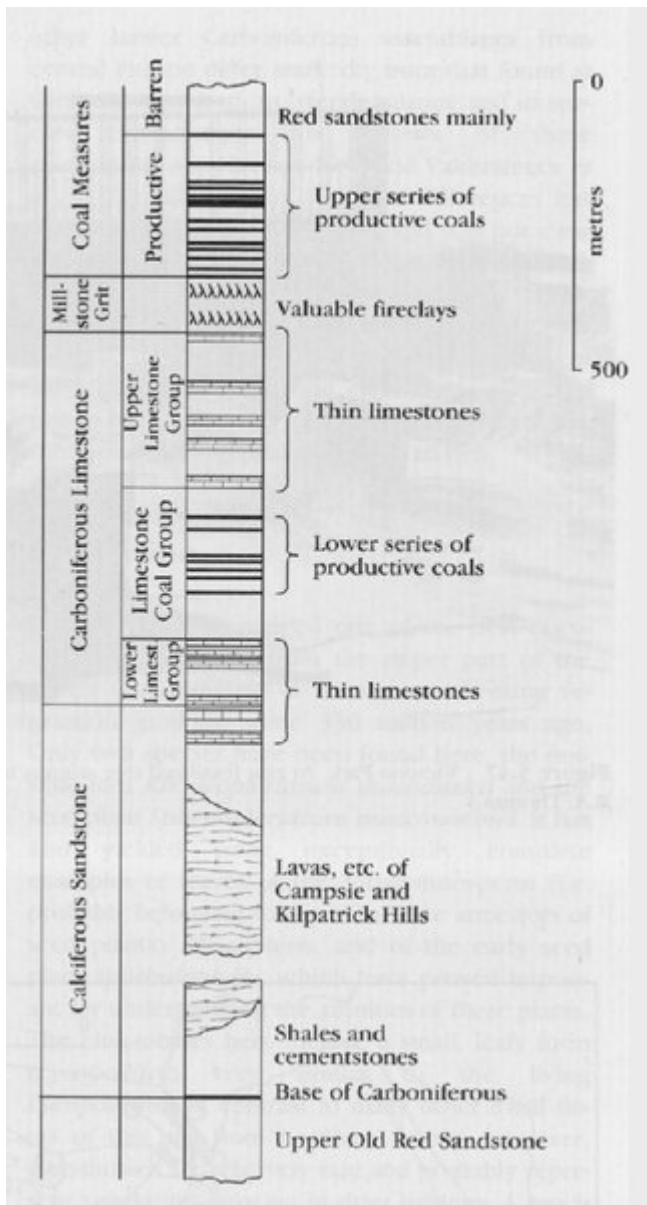
References



(Figure 5.47) Victoria Park. In situ fossilized tree stumps in the Limestone Coal Group (lower Pendleian). (Photo: B.A. Thomas.)



(Figure 5.48) Plan of the Fossil Grove at Victoria Park, showing distribution of in situ lycopsid stumps. Based on MacGregor and Walton (1972, figure 1).



(Figure 5.49) Generalized section through the Carboniferous of the Glasgow area, showing the position of the Limestone Coal Group. Based on MacGregor and Walton (1972, figure 8).