

trees, and the manner in which they anticipate those of the true exogens of modern times, have been admirably illustrated by Dr. Williamson, of Manchester. His papers, it is true, refer to these plants as existing in the Carboniferous age, but there is every reason to believe that they were of the same character in the Erian. The plan is the same with that now seen in the stems of exogenous phænogams, and which has long ceased to be used in those of the Lycopods. In this way, however, large and graceful lycopodiaceous trees were constructed in the Erian period, and constituted the staple of its forests.

The roots of these trees were equally remarkable with their stems, and so dissimilar to any now existing that botanists were long disposed to regard them as independent plants rather than roots. They were similar in general structure to the stems to which they belonged, but are remarkable for branching in a very regular manner by bifurcation like the stems above, and for the fact that their long, cylindrical rootlets were arranged in a spiral manner and distinctly articulated to the root after the manner of leaves rather than of rootlets, and fitting them for growing in homogeneous mud or vegetable muck. They are the so-called *Stigmaria* roots, which, though found in the Erian and belonging to its lycopodiaceous plants, attained to far greater importance in the Carboniferous period, where we shall meet with them again.

There were different types of lycopodiaceous plants in the Erian. In addition to humble Lycopods like those of our modern woods and great *Lepidodendra*, which were exaggerated Lycopods, there were thick-stemmed and less graceful species with broad rhombic scars (*Leptophleum*), and others with the leaf-scars in vertical rows (*Sigillaria*), and others, again, with rounded leaf-scars, looking like the marks on *Stigmaria*, and belonging to the genus *Cyclostigma*. Thus some variety was given to the arboreal club-mosses of these early forests. (See Fig. 15.)