

*Stigmaria*, are to be regarded as depriving them of the name which clearly describes their function, we may call them underground branches, though, by so doing, we set at nought both their function and their mode of growth.”

Dr. Williamson, in a recent paper, expresses the same view in the following terms<sup>1</sup>:—“At that period (the Carboniferous age) no Angiosperms existed on the earth, and even the Gymnosperms were very far from reaching their modern development. Under these circumstances the Cryptogams chiefly became the giant forest trees of that remote age. To become such, they required an organization very different in some respects from that of their degraded living representatives. Hence we must not appeal to these degenerate types for illustrations and explanations of structures no longer existing. Still less must we turn to what we find in the Angiosperms, that wholly distinct race which has taken the place of the primæval Cryptogams in our woods. The primæval giants of the swampy forests had doubtless a morphology assigned to them, adapted to the physical conditions by which they were surrounded; but if even their dwarfed and otherwise modified descendants fail to throw light upon morphological details once so common, still less must we expect to obtain that light from the living and wholly different flowering plants.”

With the remarkable trees above referred to, there co-existed a vast multitude of ferns, some arborescent, others herbaceous, tall, reed-like plants, the Calamites, allied to modern Mares'-tails, a very remarkable family of plants allied to modern Cycads and Pines; the Cordaites, which seem to have grown plentifully in certain parts of the coal areas—probably the drier parts, so that their remains sometimes constitute the greater part of small seams of coal. There were also true pine-like trees, though these would seem to have grown most abun-

<sup>1</sup> *Natural Science*, July, 1892.