

ure which, as I have already mentioned, appears on a minute scale in the twigs of the fir-tree, and that sometimes casts of these piths in sandstone appear in a separate form, constituting what have been named *Sternbergiæ* or *Artisiæ*. As Renault well remarks with reference to Cordaites, the existence of this chambered form of pith implies rapid elongation of the stem, so that the Cordaites and conifers of the coal-formation were probably quickly growing trees (Fig. 62).

The same general statements may be made as to the coal-vegetation as in relation to that of the Erian. In

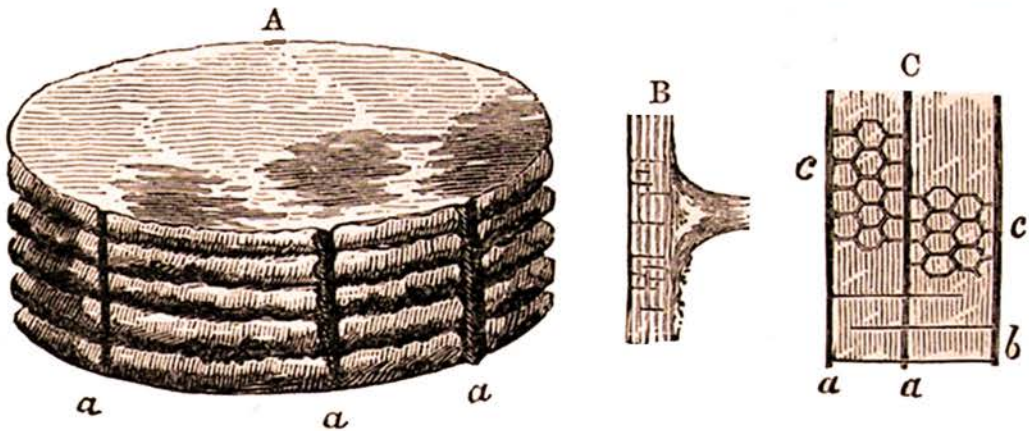


FIG. 62.—*Sternbergia* pith of *Dadoxylon*. A, Specimen (natural size), showing remains of wood at *a, a*. B, Junction of wood and pith, magnified. *c*, Cells of the wood of do., *a, a*; *b*, medullary ray; *c*, areolation.

the coal period we have found none of the higher exogens, and there are only obscure and uncertain indications of the presence of endogens, which we may reserve for a future chapter; but gymnosperms abound and are highly characteristic. On the other hand, we have no mosses or lichens, and very few Algæ, but a great number of ferns and Lycopodiaceæ or club-mosses (Fig. 63). Thus, the coal-formation period is botanically a meeting-place of the lower phænogams and the higher cryptogams, and presents many forms which, when imperfectly known, have puzzled botanists in regard to their position in one or other series. In the present world, the flora most akin