

relation to our modern equisetums, or mare's-tails, but, as in other cases we have met with, are of gigantic size and comparatively complex structure. Their stems, in cross-section, show radiating bundles of fibres, like those of exogenous woods, yet the whole plan of structure presents some curious resemblances to the stems of their humble successors, the modern mare's-tails. It would seem, from the manner in which dense brakes of these *Calamites* have been preserved in the coal-formation of Nova Scotia, that they spread over low and occasionally inundated flats, and formed fringes on the seaward sides of the great *Sigillaria* forests. In this way they no doubt contrib-



FIG. 42.—Erect *Sigillaria*, standing on a coal-seam (S. Joggins, Nova Scotia).

uted to prevent the invasion of the areas of coal accumulation by the muddy waters of inundations, and thus, though they may not have furnished much of the material of coal, they no doubt contributed to its purity. Many beautiful plants of the genera *Asterophyllites* and *Annularia* are supposed to have been allied to the *Calamites*, or to have connected them with the *Rhizocarps*. The stems and fruit of these plants have strong points of resemblance to those of *Sphenophyllum*, and the leaves are broad, and not narrow and angular like those of the true *Calamites* (Fig. 45).

No one has done more than my friend Dr. William-