

occupied with pyrites, obscurely represent the medullary rays, which must have been very feebly developed. The radiating bundles passing to the leaves run nearly horizontally; but their structure is very imperfectly preserved. The stem being old and probably long deprived of its leaves, they may have been partially disorganised before it was fossilised. The outer surface of the axis is striated longitudinally, and in some places marked with impressions of tortuous fibres, apparently those of the inner bark. In the cross-section, where weathered, it shows concentric rings; but under the microscope these appear rather as bands of compressed tissue than as proper lines of growth. They are about twenty in number. This tree has an erect, ribbed trunk, twelve feet in height and fifteen inches in diameter, swelling to about two feet at the base.

2. *Favularia Type*.—This has been well described by Brongniart and by Renault,\* and differs from the above chiefly in the fact that the outer exogenous woody zone is composed of reticulated instead of scalariform tissue, and the inner zone is of the peculiar form which I have characterised as pseudo-scalariform.

3. *Sigillaria Proper*.—This I have illustrated in my paper in the "Journal of the Geological Society" for May, 1871, and it appears to represent the highest and most perfect type of the larger ribbed *Sigillaria*. This structure I have described as follows, basing my description on a very fine axis found in an erect stem, and on the fragments of the woody axis found in the bases of other erect stems:

a. A dense cellular outer bark, usually in the state of compact coal—but when its structure is preserved, showing a tissue of thickened parenchymatous cells.

b. A very thick inner bark, which has usually in great part perished, or been converted into coal, but which, in old trunks, contained a large quantity of prosenchymatous tissue, very tough and of great durability. This "bast-tissue" is comparable with that of the inner bark of modern conifers, and constitutes much of the mineral charcoal of the coal-seams.

c. An outer ligneous cylinder, composed of wood-cells, either with a single row of large bordered pores,† in the manner of pines

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\* "Botanique Fossile," Paris, 1831.

† These are the same with the wood-cells elsewhere called discigerous tissue, and to which I have applied the terms uniporous and multiporous. The markings on the walls are caused by an unlined portion of the cell-wall placed in a disk or depression, and this often surrounded by an