stated, it had previously been well known elsewhere. I regard these plants, so well described by Williamson, as true *Calamites*, in the sense in which that word is used above.

(2) The same palæobotanist has independently expressed the belief above stated, that the leaves of *Calamites* are distinct from those of *Asterophyllites*, and has also stated a distinction between those so-called *Volkmanniæ* which may be regarded as fruits of *Calamita* and those which belonged to *Asterophyllites* *. He has also described a specimen of *Stigmaria* showing the medullary rays, and otherwise approaching to the structures which should be found in the roots of the typical *Sigillariæ* above described.

(3) Schimper, in his 'Paléontologie Végétale,' vol. xi., has treated the *Sigillariæ* very slightly. He adds no new facts of importance to their history, does not separate them from the plants of the genus *Lepidophloios*, usually mixed with them, refers the whole to one genus, and places them with the Lycopodiaceæ.

(4) Binney, in the Palæontographical Society's Publications, vol. xxiv., has described, under the name of *Bowmanites cambrensis*, a very interesting plant, which I regard as a typical member of the group *Asterophylliteæ*, as distinguished from *Calamiteæ*.

(5) Attention having been directed by Prof. Huxley to the presence of *spore-cases* in Coal, I have endeavoured to show, in a paper in the 'American Journal of Science' for April, that these bodies are not a large constituent of ordinary Coal, and that any importance which they possess in this respect is due to their identity in chemical composition with those *cortical* and *epidermal* tissues which, like the *suberin* of cork, are more nearly allied in composition to Coal than any other recent vegetable matters, and better fitted, by their chemical and mechanical properties, for its production.

EXPLANATION OF THE PLATES.

Plate VII.

Fig. 1. *Sternbergia*, pith of *Dadoxylon*; 1 *a*, section of one side, showing diaphragms; 1 *b*, section of a diaphragm and three wood-cells, magnified; 1 *c*, two wood-cells, highly magnified, showing reticulated walls.

2. *Sternbergia*, pith of *Sigillaria*, natural size; 2 *a*, 2 *b*, discigerous tissue investing the same.

3. *Sternbergia*, pith of *Sigillaria*, natural size; 3 *a*, discigerous and scalariform tissue.

4. *Sternbergia*, natural size; 4 *a*, reticulato-scalariform tissue.

5. *Sternbergia*, natural size; 5 *a*, 5 *b*, scalariform and reticulato-scalariform tissue.

6. Scalariform vessel of *Lepidophloios*.

Plate VIII.

Fig. 7. *Sternbergia*, of Lepidodendroid tree?, natural size; 7 *a*, scalariform tissue.

8. Section of a flattened stem (*Sigillaria*?) 1 foot in diameter, converted into coal, with *Sternbergia*-pith.

* Manchester Lit. and Phil. Soc. Proceedings, Feb. 1871.