

The second division (*Esculatæ*) of Sternberg's first tribe of this family contains but one species, which has not yet been described from our coal-pits.

Of his second tribe, *Alveolacæ*, he only figures one, though he refers to three species. The one species figured by him has not been described as English, but Steinhauer gives two species under the names *Phytolithus tesselatus*, Plate 7. fig. 2. and *Phytolithus notatus*, Pl. 7. fig. 6., which clearly belong to this tribe, and might stand in Sternberg's arrangement as *Lepidodendron tessellatum* and *L. notatum*.

The species of this tribe are, however, always fluted longitudinally, and thus approach to the fluted specimens constituting the family *Syringodendron* of Sternberg; and as the scales only appear on the outer or epidermal impressions, the internal or ligneous resembling the appearances of the *Syringodendron*: this tribe appears to require further examination.

The very singular *Phytolithus parmatus* described by Steinhauer, undoubtedly belongs to the *Lepidodendra*; Steinhauer, Plate 6. fig. 1., Plate 7. fig. 1.; but we feel uncertain whether a particular subdivision of that family ought not to be created for its reception. The surface is reticulated by the circumambient spiral rows of scales as before, destitute however of the marks so interesting in the *Lepidodendron aculeatum*, being simple depressed spaces: "but the most remarkable and inexplicable part of the organisation of this fossil consists in a series of circular or oval larger scutillæ or shields, placed close to each other in a right line across the surface" (or rather extending in a longitudinal row down it); "in the epidermal appearance each of these is surrounded by a raised margin, the included disk swells towards the central umbo or boss in curiously disposed rugæ arranged in a manner slightly resembling the curves on the back of an engine-turned watch case, and the boss is generally more or less excavated in the centre. These shields are often two inches or more in diameter; their series is bounded on each side by a rather indistinct ridge, beyond which the usual reticulated or squamous appearance of the surface may be observed."

"The total appearance of the fossil has a curious resemblance to that of some of the *Iungermaniæ* preparing for fructification, when highly magnified."

Mr. Allan has described and figured in the *Edinburgh Philosophical Transactions* for 1821, a much more complete specimen of this interesting species.

III. We now proceed to a third great class of the stems preserved in the coal-strata;—those remarkable for a fluted