

His 3rd (*Lepidodendron aculeatum*), 5th (*L. rimosum*), and 6th, (*L. undulatum*), at first sight appear greatly to resemble those represented by Steinhauer, as the epidermal, cortical, and ligneous impressions of a single species, and figured by him Plate 6. fig. 2 to 6. If his ideas are correct, he well describes it as a protean fossil; he assures us that he has traced frequently two of these impressions in the same specimen: "it frequently happens that the cast and impression are from different integuments, the space separating them being occupied by carbonised or bituminised vegetable matter; sometimes the impression was epidermal and the cast cortical; at others, both impression and cast were from the same integument. The manner of accounting for these varieties," he adds, "is obvious; it only requires us to suppose the cast and the impression or matrix to have been formed while part of these integuments were still in their natural state, which being thus inclosed was afterwards changed into bitumen or carbon."

The above paragraph was written before the publication of the second part of Count Sternberg's work, and the less perfect state of the epidermal impression figured by Mr. Steinhauer rendered it difficult to institute an exact comparison. In the second part of the Count's work, however, he figures another species of *L. Lycopodiodes*, T. 16. fig. 1. 2. 4. which appears much more exactly coincident with Steinhauer's figure, and in these figures the difference of the external and internal impression will be seen distinctly exhibited. We still, however, feel inclined to consider the 5th and 6th species of Sternberg as corresponding with Steinhauer's cortical and ligneous impressions. Sternberg gives the following specific characters.

*L. Lycopodiodes.* Candice arboreo, dichotome ramoso, squamis rhomboidalibus utrinque acuminatis scuto sublente tantum distinguendo nec definiendo.

Steinhauer's memoir adds that "The appearance of some specimens seems strongly to suggest the idea that the bark was furnished with, or composed of, strong longitudinal fibres, and almost all betray a tendency to be striated in a vertical direction."

"The few specimens which afford traces of a pith inform us that it also was very finely striated in a longitudinal direction, but afford us no further information respecting the internal organisation of the original."

The quantity of coaly matter investing these specimens is more considerable than in the former cases.

Martin's Pet. Derb. Plate 13. appears referable to one of the appearances above described.