

assisted by the accurate and precise figures of Count Sternberg,* and by the investigations of Mr. Steinhauer, who, in a very valuable but perhaps occasionally rather fanciful memoir, printed in the Transactions of the American Philosophical Society, has described many of the remains of this class which he had collected during his residence in England from our coal-fields.

I. We shall begin with the *Arundinaceous plants*, to which the generic name *Calamites* has been applied by Sternberg and Schlottheim.

Parkinson, O. R. vol. 1. pl. 3. fig. 3. Lloid tab. 5. fig. 184—6.

Steinhauer, Pl. 5. fig. 1. 2. Martin's Pet. Derb. Plates 8. 25. 26.

Schlottheim, Pl. 20. Sternberg, Pl. 13. fig. 3.

Generic character. A jointed stem, longitudinally striated.

In the most perfect specimens (which have been found many feet long) the termination is in a conical point; and the base of each joint in the upper part appears to have been surrounded with a whorl of leaves. Some specimens are finely striated, others widely. The joints are sometimes short, sometimes long; so that either there must have been great variety in different individuals of this species, or, which is most probable, it forms an extensive genus comprehending many species. Some specimens much resemble the young shoots of the Surinam bamboo (Steinhauer); but Sternberg observes, "elles se distinguent des bambousiers en ce que les divisions n'en sont point marquées par des nœuds saillans, mais par des coutures; elles sont en outre rayées plus distinctement."

II. Stems surrounded with impressions of the attachment of leaves spirally or quincuncially disposed.

A. Variolate or Verrucate. (*Variolaria*, Sternberg.)

Generic character. Stem surrounded by verrucate impressions or depressed areolæ, with a rising in the middle having a central speck. These areolæ are very like the papillæ of the *Echinus papillatus*; they support long cylindrical and seemingly tubular acini or leaves? Mr. Steinhauer imagined that he had traced these acini, as he calls them, extending in rays to the distance of 20 feet, round a stem of this kind lying horizontally in a soft bed of clay; and infers, from their position, that the stem had grown horizontally in its present position,

* In referring to the foreign works of Sternberg, Schlottheim, &c. we have been careful to cite only such species as had fallen under our own observation from the English coal-pits; we believe, however, that the vegetation of the continental coal strata and our own is similar throughout, with very few exceptions.