(2083) Proposal to change the authorship of *Calamites*, nom. cons. (fossil, *Sphenopsida*) and to delete *Calamitis*, nom. rej.

Christopher J. Cleal,¹ Barry A. Thomas,² Johanna H.A. van Konijnenburg-van Cittert^{3,4} & Gea Zijlstra³

¹ Department of Biodiversity & Systematic Biology, National Museum Wales, Cathays Park, Cardiff CF10 3NP, U.K.

² Institute of Biological, Environmental and Rural Sciences, Aberystwyth University, Aberystwyth SY23 1NL, U.K.

³ Marine Palynology, Laboratory of Palaeobotany and Palynology, Utrecht University, Budapestlaan 4, 3584 CD Utrecht, The Netherlands

⁴ National Centre for Biodiversity - Naturalis, P.O. Box 9517, 2300 RA Leiden, The Netherlands

Author for correspondence: Christopher J. Cleal, chris.cleal@museumwales.ac.uk

(2083) *Calamites* Sternb., Vers. Fl. Vorwelt 1(1): 24. 31 Dec. 1820 ('*Calamitis*') (orth. cons.).

Typus: *C. suckowii* Brongn., Hist. Vég. Foss. 1(2): 124. 2–4 Aug 1828 (typ. cons.).

The name *Calamites* is widely used for a fossil genus of Late Palaeozoic sphenopsid stems preserved as adpressions, stem casts and pith casts. Although there is a limit to the information such fossils can give us about the systematics of the parent plants, they have been the subject of a number of taxonomic studies, most notably by Stur (Carbon-Fl. Schatzlar. Schicht. 2. 1887), Jongmans (Anl. Best. Karbon-Pfl 1. 1911), Jongmans & Kukuk (in Meded. Rijks-Herb. 20. 1913), Kidston & Jongmans (Fl. Carbonif. Netherlands 1. 1917), Gothan & al. (in Beih. Geol. Jahrb. 36. 1959) and Crookall (Foss. Pl. Carbon. Gr. Brit. 5. 1969).

The generic nomenclature of *Calamites* nevertheless remains confused. The name was first used by Suckow (in Acad. Elect. Theod. Palatinae 5: 355. 1784) and Schlotheim (Petrefactenkunde: 398. 1820) but these works pre-date the starting point for the publication of names of plant fossil taxa (Art. 13.1 of the *Vienna Code*; McNeill & al. in Regnum Veg. 146. 2006). The earliest validly published name for the genus was *Calamitis* Sternb., Vers. Fl. Vorwelt 1(1): 24. 1820. Sternberg made no direct reference here to either Suckow's or Schlotheim's descriptions, but the specimen figured by Sternberg under the name *Calamitis pseudobambusia* Sternb. (l.c. 1820: pl. 20, fig. 1) is very similar to those figured by Suckow and Schlotheim.

Sternberg (Vers. Fl. Vorwelt 1(2): 32. 1821) continued to use the spelling *Calamitis* but this time made clear reference to the work of Schlotheim, l.c.), validating four of the latter's species names: *Calamitis nodosa* Schloth. ex Sternb., *Calamitis gibbosa* Schloth. ex Sternb., *Calamitis approximata* Schloth. ex Sternb. and *Calamitis interrupta* Schloth. ex Sternb. There can be no doubt that Sternberg was here using the generic name *Calamitis* in exactly the same sense as Schlotheim used the name *Calamites* and so it would seem reasonable to assume that he had also done so in the first (1820) part of *Flora der Vorwelt*.

The following year, Brongniart (Classific. Vég. Foss.: 9. 1822, a reprint from Mém. Mus. Hist. Nat. 8: 209. May 1822) reintroduced Schlotheim's original spelling of *Calamites*. Although he mentioned directly only one species (*Calamites? decoratus* Schloth. ex Brongn., l.c. 1822: 17) the fact that he made clear reference to the works of Schlotheim and Sternberg ("Le nom de *Calamite* ayant déjà donné par MM. Schlotheim et Sternberg à ce genre ...") indicates that he was also including the species described by those authors. A year later

again, Sternberg (Vers. Fl. Vorwelt 1(3): 36. 1823), after discussing Brongniart's 1822 classification, also adopted the latter's spelling of *Calamites*, which he continued to do in all subsequent parts of his *Flora der Vorwelt*. We therefore agree with Kvaček & Straková (Cat. Foss. Pl. Kaspar M. Sternberg: 13. 1997) that *Calamitis* is merely an orthographic variant of *Calamites*. It is not possible to argue that they had different types and therefore were in effect different taxa: both Sternberg and Brongniart made at least indirect reference to essentially the same set of species, without stating that any one of them is particularly typical.

Calamites has been in the list of *Nomina generica conservanda* in the *ICBN* since the *Stockholm Code* (Lanjouw & al. in Regnum Veg. 3. 1952) (following an original proposal by Schopf, Amer. Prop. Conc. Paleobot. Nomencl.: 13. 1949) but this entry is erroneous. It mistakenly attributes *Calamites* to Brongniart in 1828 (even mentioning a wrong title: Prodr. Hist. Vég. Foss.: 121. 1828) rather than to Brongniart (l.c. 1822), but the latter fulfils all of the requirements in Art. 32 of the *Vienna Code* for valid publication of such a name: it was effectively published, the name had an orthographically and grammatically correct form, and there was a clear diagnosis. Appendix III of the *Code* also incorrectly gives the two names as homonyms rather than orthographic variants. To rectify the situation, we propose that the entry be corrected to take these points into account.

The one part of the entry in the entry that we suggest is retained is that *C. suckowii* should continue to be the conserved type. None of the species that Sternberg (l.c. 1820) had available when first validly publishing the name *Calamitis/Calamites* would provide satisfactory types. The only specimen that Sternberg figured (l.c. 1820: pl. 13, fig. 3) has been lost (Kvaček & Straková, l.c.: 123) and its systematic position is uncertain: Brongniart (Hist. Vég. Foss. 1: 124, 131. 1828) was unsure if it was conspecific with what he called *Calamites suckowii* or *Calamites cannaeformis*. Of the ten other species that Sternberg had available (i.e., those described by Schlotheim (l.c.) six were based on unillustrated types and so are difficult to interpret (*Calamites approximatus*, *Calamites remotus*, *Calamites gibbosus*, *Calamites decoratus*, *Calamites inermis*, *Calamites triquetris*), three are according to Jongmans (Foss. Cat. II. Pl. 5: 229, 302 & 318. 1915) based on unidentifiable types because they show neither leaf nor branch scars (*Calamites cannaeformis* Schloth., l.c. 1820: pl. 20, fig. 1, *Calamites interruptus* Schloth., l.c. 1820: pl. 20, fig. 2, *Calamites nodosus* Schloth., l.c. 1820: pl. 20, fig. 3.), and one is based on a type that has few of the diagnostic characters of the fossil genus and may not according to Stur (Culm-Fl. 1: 18.

1875) be Pennsylvanian in age (*Calamites scrobiculatus* Schloth., l.c.: pl. 20, fig. 4. 1820).

In contrast to these species, *C. suckowii* is well-documented in all of the monographs mentioned at the start of this proposal and is fully characteristic of the genus as currently interpreted. Moreover, there is some historical justification for this choice as the earliest

use of the name *Calamites* (Suckow, l.c. 1784: pl. 16, fig. 2; pl. 18, figs. 10, 11; pl. 19, figs 8, 9) referred to specimens that were subsequently designated as the types for *C. suckowii* Brongn. Taking these practical and historical factors together, we believe that it makes overwhelming sense to retain *C. suckowii* as the conserved type of this generic name.