Comment (Case 3700) – Support for *Diplodocus carnegii* Hatcher, 1901 being designated as the type species of *Diplodocus* Marsh, 1878
(see BZN **73**(1): 17–24 [Case]; BZN **73**(2–4): 127, 128, 129–131, 132–133)

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I write in support of the proposal by Tschopp & Mateus (2016) to designate the well-known species *Diplodocus carnegii* Hatcher, 1901 as the type species of the genus *Diplodocus* Marsh, 1878.

1. The problem afflicting *Diplodocus* is a familiar one to dinosaur workers: when working with very large animals that died many millions of years ago, most specimens are incomplete, and often very uninformative. In itself this does not cause difficulties: fragmentary specimens need not be the basis for major studies. But the issue was greatly exacerbated by the "Bone Wars" of E.D. Cope and O.C. Marsh, rival palaeontologists in the late nineteenth century of the USA, who each aimed to outdo the other by naming more species of fossil animals. As a result, many dinosaur species were named on the basis of non-diagnostic remains – as the Commission recognised in the case of *Stegosaurus* Marsh, 1877, for which it designated a replacement type species in 2013 (Opinion 2320 on Case 3536, ICZN, 2013).

2. Despite being one of the most completely known of all dinosaurs, and among those best known to the general public, *Diplodocus* suffers badly from this syndrome. It was founded by Marsh on a non-diagnostic fragmentary specimen (YPM 1920), which supposedly functions as the type specimen of the type species, *D. longus*. Meanwhile, the nearly complete mounted skeleton of *Diplodocus carnegii* CM 84, the holotype of its species, is on display at the Carnegie Museum of Natural History in Pittsburgh, Pennsylvania. High-quality casts of this skeleton are displayed in London, Paris, Berlin, Madrid and numerous other museums. Due to its completeness and wide availability for study, this specimen has formed the basis of essentially all scientific work on *Diplodocus* since its description by Hatcher (1901). For example, in my own work alone, half a dozen papers extensively discuss *Diplodocus*, using or implying *D. carnegii* throughout: Taylor & Naish (2005), Taylor et al. (2009), Taylor (2010), Taylor & Wedel (2013), Wedel & Taylor (2013), Taylor (2014). This includes the paper that formulated the phylogenetic definitions of the clades Apatosaurinae and Diplodocinae, both of which use *Diplodocus* as a specifier (Taylor & Naish, 2005). Other related clade definitions either use *D. carnegii* explicitly, or simply specify *Diplodocus*, with *D. carnegii* implicitly understood by long precedent.

3. In its use as the definitive exemplar of the genus *Diplodocus*, as the foundation for numerous palaeobiological studies of the genus, and as the specifier for numerous important clades, the species *D. carnegii* is already effectively functioning as the type species of *Diplodocus*. Therefore the petition of Tschopp & Mateus (2016) requests only that the commission recognises de jure what is already the case de facto.

4. It may be argued that the present holotype, that of *D. longus* (YPM 1920) is adequate despite its non-diagnostic nature, on the basis that it falls in a clade with other *Diplodocus* specimens in the recent phylogenetic analysis of Tschopp et al. (2015). I do not find this argument persuasive. As Tschopp et al. (2015, p. 176, fig. 117) explain, YPM 1920 is one of the most phylogenetically unstable OTUs in their analysis, and was one of those that had to be removed *a posteriori* in order to obtain a reduced consensus tree. It is very possible that future analyses, on adding new specimens or new characters, will resolve a topology in which YPM 1920 falls outside the *Diplodocus* clade, which would greatly disrupt nomenclature and include numerous important clades.

5. For these reasons, I support the petition to establish the well-represented, diagnostic, phylogenetically stable and universally referenced species *D. carnegii* as the replacement type species of the genus *Diplodocus*.

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