

The monophyly of Euparkeriidae (Reptilia: Archosauriformes) and the origins of Archosauria: A revision of *Dorosuchus neoetus* from the Mid-Triassic of Russia

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Abstract

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Original Articles © The Palaeontological Association. *Euparkeria capensis* is resolved as the sister taxon to Archosauria in many cladistic phylogenies and provides a key outgroup which may approximate the ancestral archosaur morphology. Several other taxa have been referred to the family Euparkeriidae, but the monophyly of this taxon remains doubtful and largely untested. To test this monophyly, the archosauriform and putative euparkeriid *Dorosuchus neoetus* from the Mid-Triassic of Russia is re-examined in the light of recent work on the evolution of stem archosaurs. *Dorosuchus neoetus* is found to possess a number of morphological features that place it close to Archosauria, including a sigmoidal femur with a clear attachment region for the *m. caudifemoralis* musculature, but no unambiguous archosaurian apomorphies. *Dorosuchus neoetus* is included for the first time in a numerical cladistic analysis and is recovered as the sole sister taxon to Archosauria + Phytosauria. A monophyletic Euparkeriidae including *D. neoetus* and *E. capensis* is slightly less parsimonious. In addition, a mandible and pterygoid that were previously referred to *D. neoetus* subsequent to the original description of the species are also included separately within the phylogenetic analysis and are recovered within Archosauria, possibly raising questions as to their correct taxonomic referral. However, this phylogenetic placement is based primarily on the absence of palatal teeth, but the presence or absence of palatal teeth exhibits considerable homoplasy within Archosauriformes. Based on other aspects of their morphology, we do not reject the referral of these elements to *D. neoetus*.

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Keywords

Archosauria, *Dorosuchus*, *Euparkeria*, Sister taxon, Triassic