

## **Anatomy and phylogeny of the gavialoid crocodylian *Eosuchus lerichei* from the Paleocene of Europe**

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Originally erected by Dollo in 1907, the holotype of *Eosuchus lerichei* has never been carefully described but simply cited and compared in a number of papers. This work is an attempt to fill this gap and to place this taxon in a cladistic phylogenetic context. *E. lerichei* can be considered a valid basal gavialoid from late Paleocene of North Western Europe, sharing the presence of extremely enlarged foramina aerea on quadrates with the coeval *Eosuchus minor* from eastern North America (formerly described as *Gavialis minor*). These two species can be considered sister taxa and, for priority reason, they should be both ascribed to genus *Eosuchus*. The results of the cladistic analysis show that the European species possess characters that can be considered as slightly derived if compared to those of its American relative, suggesting an eastward dispersion from North America before the Paleocene-Eocene boundary and before the full opening of the Atlantic Ocean or local evolution from a basal gavialoid stock similar to *E. minor*. Both species of *Eosuchus* come from marine outcrops and represent a further evidence for the salt-water tolerance of the earliest stages of Gavialoidea evolutionary history. Despite the present endemism of the only living gharial, *Gavialis gangeticus*, the historical biogeography of gavialoids shows a lost global distribution and reveals several transoceanic dispersals.

**Key words:** Crocodylia, Gavialidae, *Eosuchus*, transoceanic dispersal, osmoregulation, Paleocene, Jeumont, Erquelinnes.

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