

A new species of mixosaurid ichthyosaur from the Middle Triassic of Luxi County, Yunnan Province, South China

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Ichthyosaurs, an iconic lineage of Mesozoic marine reptiles, were an important component of recovering ecosystems after the Permo-Triassic Mass Extinction event. Mixosauridae, a clade of small, early-diverging ichthyosaurs, were of particular significance for this process, being abundant predators in Middle Triassic shallow seas. Despite the abundance of well-preserved mixosaurid specimens from South China, *Mixosaurus panxianensis* remains the only comprehensively described species, hindering our understanding of the variability, taxonomy and diversity of mixosaurids from this region. Here, we report a new species of *Mixosaurus*, *Mixosaurus luxiensis*, from Luxi County, Yunnan Province, South China. The wider postorbital skull portion differentiates the new species from *Mixosaurus cornalianus* and *Mixosaurus kuhnschnyderi* from central Europe. The non-urophagous dentition, composed of tiny piercing mesial teeth and robust but pointed distal teeth, resembles the dentition of *M. cornalianus*. However, the distal teeth of *M. luxiensis* sp. nov. are twice the size of the mesial ones, in contrast to *M. cornalianus*, in which the mesial and distal teeth are approximately equal in size. The forelimb exhibits a unique morphology, including a proportionally narrow radius, the presence of a peripheral notch on the ulna, and a large metacarpal V. A preliminary phylogenetic analysis suggests a close affinity of the new taxon with *M. cornalianus* from Western Tethys. Our study introduces important, new anatomical information on *Mixosaurus* from South China, useful for future studies of mixosaurid diversity.

Key words: Ichthyosauria, Mixosauridae, marine reptile, phylogeny, biotic recovery, Guanling Formation, Anisian, Triassic.

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