

A reassessment of *Kelmayisaurus petrolicus*, a large theropod dinosaur from the Early Cretaceous of China

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The Early Cretaceous fossil record of large-bodied theropods from Asia is poor, hindering comparison of Asian predatory dinosaur faunas with those from other continents. One of the few large Asian theropod specimens from this interval is a partial skull (maxilla and dentary) from the Lianmugui Formation (?Valanginian–Albian), the holotype of *Kelmayisaurus petrolicus*. Most authors have either considered this specimen as an indeterminate basal tetanuran or a nomen dubium. We redescribe *K. petrolicus* and note that it possesses a single autapomorphy (a deep accessory groove on the lateral surface of the anterior dentary), as well as a unique combination of characters that differentiates it from other theropods, affirming its validity. A phylogenetic analysis recovers *K. petrolicus* as a basal carcharodontosaurid, which is supported by various features: very deep interdental plates (a carcharodontosaurid synapomorphy), fused interdental plates (present in carcharodontosaurids and a limited number of other theropods), and the absence of diagnostic features of other clades of large-bodied theropods such as abelisaurids, megalosauroids, and coelurosaurs. As such, *Kelmayisaurus* is the second known carcharodontosaurid from Asia, and further evidence that this clade represented a global radiation of large-bodied predators during the Early–mid Cretaceous.

Key words: Dinosauria, Theropoda, Carcharodontosauridae, anatomy, Cretaceous, China.

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