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Reappraisal of the tribosphenidan mammals from the Trinity Group (Aptian-Albian) of Texas and Oklahoma

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The Trinity therians have long been the focus of attempts to reconstruct the evolutionary history of higher mammals, especially in the context of the development of tribospheny. In this paper, we update the taxonomy of the tribosphenidan taxa known from the Trinity Group and establish with more confidence the premolar/molar count in each. Many isolated specimens can be referred to a specific tooth locus. Additional diversity is revealed within the Deltatheroida, with the description of an additional species of *Oklatheridium* ; *Pappotherium* is here considered a likely metatherian based on the inferred presence of four molars, while *Holoclemensia* is a basal eutherian (the opposite of some traditional interpretations). The remainder of the genera, *Kermackia* and *Slaughteria*, cannot be allied with either of the living groups of tribosphenidan mammals using the available data. We identify strong morphological diversity within this assemblage of stem taxa, including modifications to the traditional tribosphenic occlusal pattern in *Kermackia*. Mammalian evolution at the base of the tribosphenidan radiation was complex, and this underscores the need for caution when interpreting the morphology and relationships of taxa known by incomplete material.

Key words: Tribosphenida, Metatheria, Eutheria, Deltatheroida, Trinity Group, Early Cretaceous.

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