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A new mammal from the Turonian–Campanian (Upper Cretaceous) Galula Formation, southwestern Tanzania

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We here establish a new mammaliaform genus and species, *Galulatherium jenkinsi* (Mammalia), from the Upper Cretaceous Galula Formation in the Rukwa Rift Basin of southwestern Tanzania. This represents the first named taxon of a mammaliaform from the entire Late Cretaceous of continental Afro-Arabia, an interval of 34 million years. Preliminary study of the holotypic and only known specimen (a partial dentary) resulted in tentative assignation to the Gondwanatheria, a poorly known, enigmatic clade of Late Cretaceous–Paleogene Gondwanan mammals (Krause et al. 2003). The application of advanced imaging (μCT) and visualization techniques permits a more detailed understanding of key anatomical features of the new taxon. It reveals that the lower dentition consisted of a large, procumbent lower incisor and four cheek teeth, all of which were evergrowing (hypselodont). Importantly, all of the teeth appear devoid of enamel. Comparisons conducted with a range of Mesozoic and selected Cenozoic mammaliaform groups document a number of features (e.g., columnar, enamel-less and evergrowing teeth, with relatively simple occlusal morphology) expressed in *Galulatherium* that are reminiscent of several distantly related groups, making taxonomic assignment difficult at this time. Herein we retain the provisional referral of *Galulatherium* (RRBP 02067) to Gondwanatheria; it is most similar to sudamericids such as *Lavanify* and *Bharratherium* from the Late Cretaceous of Madagascar and India, respectively, in exhibiting relatively simple, high-crowned, columnar cheek teeth. Other features (e.g., enamel-less dentition) are shared with disparate forms such as the Late Jurassic *Fruitafossor* and toothed xenarthrans (e.g., sloths), here attributed to convergence. Revised analyses of the depositional context for the holotype place it as having lived sometime between the late Turonian and latest Campanian (roughly 91–72 million years ago). This enhanced geochronological context helps to refine the palaeobiogeographical significance of *Galulatherium* among Cretaceous mammals in general and those from Gondwanan landmasses specifically.

Key words: Mammaliaformes, Mammalia, Gondwanatheria, *Galulatherium*, Late Cretaceous, Tanzania.

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