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A peculiar faunivorous metatherian from the early Eocene of Australia

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I describe *Archaeonothos henkgodthelpi* gen. et. sp. nov., a small (estimated body mass ~40–80 g) tribosphenic metatherian from the early Eocene Tingamarra Fauna of southeastern Queensland, Australia. This taxon, known only from a single isolated upper molar (M2 or M3) is characterised by a very distinctive combination of dental features that, collectively, probably represent faunivorous adaptations. These include: a straight, elevated centrocrista; a metacone considerably taller than the paracone; a wide stylar shelf (~50% of the total labiolingual width of the tooth); reduced stylar cusps; a long postmetacrista; a small and anteroposteriorly narrow protocone; an unbasined trigon; and the absence of conules. Some of these features are seen in dasyuromorphians, but detailed comparisons reveal key differences between *A. henkgodthelpi* and all known members of this clade. *A. henkgodthelpi* also predates recent molecular estimates for the divergence of crown-group Dasyuromorphia. Similar dental features are seen in a number of other metatherians, including the South American sparassodonts, *Wirunodon chanku* from the ?middle–late Eocene Santa Rosa local fauna of Peru, and *Kasserinotherium tunisiense* from the early Eocene Chambi fauna of Tunisia, although whether *A. henkgodthelpi* is closely related to any of these taxa is unclear based on available evidence. I therefore refer *A. henkgodthelpi* to Metatheria incertae sedis. Potential relatives of *A. henkgodthelpi* are unknown from any other Australian fossil deposit.

Key words: Mammalia, Metatheria, Marsupialia, Sparassodonta, Eocene, Tingamarra Fauna, Australia.

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