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## Taxonomy and redescription of the Atherton Antechinus, *Antechinus godmani* (Thomas) (Marsupialia: Dasyuridae)

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### Abstract

We provide a taxonomic redescription of the dasyurid marsupial Atherton Antechinus, *Antechinus godmani* (Thomas). *A. godmani* is only rarely encountered and limited to wet tropical rainforests of north-east Queensland, Australia, between the towns of Cardwell and Cairns (a distribution spanning 135 kilometres from north to south). The distinctive species occurs at altitudes of over 600 meters asl, in all major rainforest types, and can be found with both the northern subspecies of the Yellow-footed Antechinus, *A. flavipes rubeculus* Van Dyck and the Rusty Antechinus, *A. adustus* (Thomas). *A. godmani* is clearly separated from all congeners on the basis of both morphometrics and genetics. *A. godmani* can be distinguished from all extant congeners based on external morphology by a combination of large size, naked-looking tail and reddish fur on the face and head. *A. godmani* skulls are characteristically large, with a suite of long features: basicranium, palate, upper premolar tooth row, inter-palatal vacuity distance and dentary. Phylogenies generated from mt- and nDNA data position *Antechinus godmani* as monophyletic with respect to other members of the genus; *A. godmani* is strongly supported as the sister-group to a clade containing all other antechinus, but excluding the south-east Australian Dusky Antechinus, *A. swainsonii* (Waterhouse) and Swamp Antechinus, *A. minimus* (Geoffroy). *Antechinus godmani* are genetically very divergent compared to all congeners (mtDNA: range 12.9–16.3%).

**Key words:** Australia, morphological, genetic, evolutionary, carnivorous marsupial, dasyurid

### Introduction

Until relatively recently, *Antechinus godmani*, a rare, geographically restricted and poorly known species, evaded appropriate taxonomic recognition. Thomas (1923) suggested, in his original description, that *A. godmani* was "A large dark species of the *Ph. flavipes* group" (p. 174). He was also struck by its resemblance to *A. adustus*, "It is remarkable how like in colour and general appearance this species is to the local race of *Ph. flavipes* which occurs with it" (p. 175). Tate was later (1947) to cautiously attribute to *A. godmani* full specific status, at the same time expressing doubt regarding its distinction from *A. flavipes* "... *godmani* possibly only a large-sized race of *flavipes*" (p. 126). He did, however, in defence of its specific status, emphasize its large size, large teeth and the presence of a distinct "... metacone process at the back of M<sup>3</sup>" (p. 127).

Then, in 1952, after the 66th Archbold Expedition to Cape York Peninsula, Tate reconsidered the identity of *A. godmani* and added it to a tropical soup of Queensland antechinus he labelled *A. flavipes godmani*, the ingredients of which actually consisted of *A. godmani*, *A. flavipes* and *A. leo* (not including *A. adustus*, as later suggested by Van Dyck [1982a]).

Tate (1952), regarding Thomas' separation of *A. adustus* and *A. godmani*, remarked that, at the time, the differences in dental measurements between the two forms warranted their specific separation "... despite the fact that their only distinguishing feature was one of size and also despite the fact that males are always much larger than females in *Antechinus*" (p. 578). Tate apparently retreated from the significance he had attached to his earlier-published (1947) observation regarding the presence of a distinct metaconic process on the M<sup>3</sup> of *A. godmani* (never present in *A. flavipes*, *A. leo* or *A. adustus*), and proposed, instead, an *A. flavipes* complex to accommodate *A. godmani*. The course of events that influenced this decision unfolded as follows. The Archbold Expedition to Cape