



Morphological and molecular assessment of the *Diplodactylus savagei* species complex in the Pilbara region, Western Australia, with a description of a new species

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Abstract

The gecko *Diplodactylus savagei* is restricted to the rocky Pilbara and Ashburton regions of Western Australia. Recent collections have enabled a reappraisal of morphological and genetic diversity within the taxon. Analysis of 1200 base pairs of the mtDNA gene *ND2* and surrounding tRNA found strong support for three lineages within *D. savagei*: an eastern clade (which includes the type location of *D. savagei* from Marble Bar), a southern clade and a north-central clade. The eastern and southern clades did not differ in morphology or dorsal pattern. Although there are several subtle differences in morphological characters between the eastern and southern clades compared to the north-central form, there were clear differences in dorsal pattern with the north-central forms having finer, widely-scattered spots, a pale dorsal border to the loreal stripe and a gradual transition between the dorsal and ventral colouration. We describe the north-central form as a new species, *D. galaxias* **sp. nov.**, based on the distinctiveness of its colour pattern, subtle morphological differences, mtDNA divergence and maintenance of these differences at the edge of the western Hamersley Range where the north-central and southern clades come into contact.

Key words: cryptic species, Diplodactylidae, gecko, lizard, *ND2*, tRNA

Introduction

The genus *Diplodactylus* Gray, 1832 is an Australian clade of geckos that has seen large changes in content in the past two decades. First, Russell and Rosenberg (1981) separated the tail-squirting geckos to the genus *Strophurus* Fitzinger, 1843. This was followed by the removal of the more slender, narrow-toed species of *Diplodactylus* to the genus *Lucasium* Wermuth, 1965 by Oliver *et al.* (2007a). Despite the reduction in *Diplodactylus* diversity owing to these generic rearrangements, several new species of *Diplodactylus* have recently been described or redescribed that show only subtle morphological differences but exhibit deep genetic splits among lineages (Aplin & Adams 1998; Doughty *et al.* 2008; Hutchinson *et al.* 2009).

Diplodactylus savagei Kluge, 1963 is only known from the Pilbara and Ashburton regions of Western Australia (Storr *et al.* 1990; Cogger 2000; Wilson & Swan 2008). Kluge described this species as distinct from other members of the *D. vittatus* Gray, 1832 species-group, especially *D. conspicillatus* Lucas & Frost, 1897 – a taxon also with a similar elongate body and a ‘beaked’ face, possibly owing to specialised feeding on termites or ants (Storr *et al.* 1990). Kluge had only four specimens available to work with for his description (see also Kluge 1967), and the collection of Pilbara reptiles has been slow until recent decades owing to expanding mining activity in the area (Fig. 1). More extensive, recent collections of *D. savagei* within the Pilbara region have revealed consistent morphological differences in back pattern, with north-central populations having fine, widely-scattered spots whereas southern and eastern populations tend to have heavier spots arranged in transverse rows (Fig. 2). Many of the recently collected specimens had tissue samples taken