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A new species of *Diporiphora* from the Goneaway Tablelands of Western Queensland

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Abstract

Australia's agamid genus *Diporiphora* is speciose and widespread, however, there remain significant taxonomic uncertainties within this group. Field collections across the range of *Diporiphora* continue to uncover undocumented morphological and ecological variation. A new morpho-type was collected from hard pebbly soils on Valetta Station, western Queensland, providing ample data for the description of a new species (*Diporiphora ameliae* sp. nov.). We undertook a morphological study, integrated with a comprehensive genetic study to provide the phylogenetic placement and distinctiveness of the new species. Although superficially similar to *Diporiphora winneckeii*, the new species is characterised by well developed ventral body patterns consisting of four longitudinal grey stripes on a cream background and three distinctive dark V-shaped markings that converge anteriorly on the throat and gular area. Molecular data is presented incorporating a ~1200 bp of the mtDNA protein-coding gene *ND2* and five flanking tRNAs for 58 new sequences and 53 previously published sequences. Phylogenetic analyses of the molecular data strongly support the new species as an independent evolutionary lineage within *Diporiphora*. In addition, the molecular data also showed that there is far greater diversity in *Diporiphora winneckeii* sensu lato than was anticipated. Our results clearly indicate that there are at least three independent evolutionary lineages of *D. winneckeii*-like dragons.

Key words: *Diporiphora ameliae* sp. nov., Agamidae, systematics, morphology, molecular phylogenetics, arid zone

Introduction

Diporiphora winneckeii Lucas and Frost, 1896 is the only recognised *Diporiphora* spp. to possess a white ventral surface with broad grey longitudinal stripes. This species was described from two specimens collected at Charlotte Waters near the Northern Territory/South Australian border (NT, 25° 55' S, 134° 55' E). One of these, D10156, was subsequently designated as the lectotype in a published list of the reptile and amphibian type holdings of the National Museum of Victoria (now Museum Victoria; Coventry, 1970); an action not made in a revisionary context.

The first in-depth discussion of colour pattern and morphological variation within this species across its range was provided by Houston (1977) who identified a 'typical eastern race' from the Lake Eyre and Lake Torrens Basins that agreed '...with the descriptions and figure of Lucas & Frost (1895, 1896)'. Additionally, he noted that the 'western populations' from the western NT and the north-western and eastern divisions of WA differed from the typical form. These usually had one to two pairs of pre-anal pores (*vs.* no pre-anal pores in the typical eastern race) in both sexes, a strong gular fold (*vs.* weakly developed or absent) and four to five ventral stripes on the gular area (*vs.* 3). Differences between the habitat associations of the eastern and western '*winneckeii*' were also noted; the former being strongly associated with Sandhill Canegrass (*Zygochloa paradoxa*), the latter with Porcupine Grass (*Triodia* spp). Despite these differences, Houston favoured a conservative approach, commenting that 'I have preferred not to formally establish a new race at this time'. Recognising the 'structural heterogeneity' of the genus, he saw the need for larger collections and also regarded colour pattern as important for taxonomic studies of the group. As pattern deteriorates with preservation, he believed that field studies of live specimens were desirable for delineating the species boundaries.