



A new velvet Gecko (Gekkonidae: *Oedura*) from south-east Queensland, Australia

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Abstract

It has long been suggested that the populations of the Zigzag Velvet Gecko *Oedura rhombifer* in south-eastern Queensland represent a distinct species. Here, we provide morphological data supporting this assertion, and describe these populations as *Oedura jacovae* **sp. nov.** This species is predominately arboreal and is found in open eucalypt forests between the distributions of its two most similar congeners, *O. rhombifer* to the north and *O. lesueurii* to the south. It is morphologically distinguished from its congeners by dorsal pattern, characteristics of the 1st and 2nd supralabial scales, and the degree of webbing between the 3rd and 4th toes. Preliminary genetic data shows that *Oedura jacovae* **sp. nov.** is most closely related to *O. rhombifer* and *O. lesueurii* but is highly divergent from both. Further sampling is required to refine distributional knowledge of *O. jacovae* **sp. nov.** and to determine zones of contact between it and its closest congeners. *Oedura jacovae* **sp. nov.** is widespread in south-eastern Queensland but is likely to be threatened by the extensive clearing of lowland eucalyptus forest communities. Competition from rapidly expanding populations of the introduced Asian House Gecko *Hemidactylus frenatus* is also of concern. The examination of comparative material in this study allows us to highlight a number of populations of *O. rhombifer* that are morphologically interesting and in need of taxonomic investigation. Additionally, we confirm that the lectotypes of *O. rhombifer* and *O. lesueurii* are consistent with the currently accepted concepts of these two taxa.

Key words: *Oedura jacovae* **sp. nov.**, *O. rhombifer*, *O. lesueurii*, *Hemidactylus frenatus*, genetic divergence, ND4, morphology, conservation

Introduction

Two species of velvet geckos are currently recognised in eastern Queensland that are of small size, slim build, and possess a distinctive dorsal pattern consisting of a pale, zigzag vertebral stripe: *Oedura lesueurii* (Duméril & Bibron, 1836) and *O. rhombifer* Gray, 1845 (Figs 1A & 1B respectively). In Queensland, *O. lesueurii* is found at high elevations in the Stanthorpe Region (latitudes > 28°) where it is associated with exfoliating rock. The species extends south through the northern tablelands of New South Wales (NSW) to the central coast and tablelands region. The name *Oedura phillipsi* (Wells & Wellington, 1985) may apply to populations on the northern tablelands and adjacent populations in southern Queensland, but further work is required to adequately diagnose this putative taxon (Colgan & Sadlier, unpub. data). *Oedura rhombifer* is widespread through woodland communities in eastern Queensland and across northern Australia with an outlying, possibly introduced population, around Alice Springs (Cogger 1992, p. 266). The south-eastern Queensland (SEQ) populations of *O. rhombifer* (Fig. 1C) have long been recognised as a distinct colour/pattern morph and a number of authors have suggested that these populations may also be distinct at the species level. This morph