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Two new subspecies of the leaf-tailed gecko *Phyllurus ossa* (Lacertilia: Carphodactylidae) from mid-eastern Queensland, Australia

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Abstract

Following the discovery of a new population of *Phyllurus ossa* on Whitsunday Island in the Cumberland Island Group, eastern Queensland, we conducted both genetic and morphological analyses to assess differences between all known populations. The analyses revealed three genetically distinct, morphologically diagnosable, geographical units. The differences are such that we recognise these as subspecies: *Phyllurus ossa ossa* restricted to the Mt Ossa/Mt Pelion/ Mt Charlton/ St Helens Gap area; *P. ossa hobsoni* **subsp. nov.** on Mt Dryander and in the Conway Range and *P. ossa tamoya* **subsp. nov.** currently only known from Whitsunday Island. There are now 11 recognised taxa in *Phyllurus*. The three *P. ossa* subspecies are narrowly distributed and closely associated with exposed rock in low to mid-elevation vine forests. Their current distributions are shaped by past climate change that progressively contracted and fragmented the distribution of rainforests in eastern Australia. The recognition of these subspecies has land management/conservation implications.

Key words: leaf-tailed geckos, *Phyllurus*, rainforests, eastern Australia

Introduction

Three new species of leaf-tailed geckos, *Phyllurus isis* Covacevich & Moritz 1993, *P. nephtys* Couper, Covacevich & Moritz 1993 and *P. ossa* Couper, Covacevich & Moritz 1993 were described from elevated rainforest blocks on the Mackay Coast in 1993 (Couper *et al.*, 1993). The existence of the population in Eungella National Park was well known and a specimen from this population was included in the type series of *P. caudiannulatus* Covacevich 1975, a species that would later be restricted to the Many Peaks and Dawes Ranges in south-eastern Queensland (see Couper *et al.*, 1993). The other two species were new discoveries with no pre-existing collections. These finds added to the list of highly localised reptiles and frogs known from mid-east Queensland (e.g., *Eulamprus amplus* Covacevich & McDonald 1980, *Eulamprus luteilateralis* Covacevich & McDonald 1980, *Rheobatrachus vitellinus* Tyler & Davies 1984, *Taudactylus eungellensis* Liem & Hosmer 1973, *Taudactylus liemi* Ingram 1980) and prompted further surveys of rainforest isolates in this region.

Subsequent targeted searches led to the discovery of *Phyllurus championae* Schneider, Couper, Hoskin & Covacevich 2000 from the Koumala area on the mid-east Queensland coast (description in Couper *et al.*, 2000). The mid-east Queensland region has clearly played an important role in the diversification of *Phyllurus* species, with four of the nine recognised species occurring in this small area. Significant dry forest gaps separate the rainforests of mid-east Queensland from rainforest areas to the north (Burdekin Gap) and south (St Lawrence Gap) (Joseph *et al.*, 1993; Chapple *et al.*, 2011). The other *Phyllurus* species occur to the north of the Burdekin Gap (*P. amnicola* Hoskin, Couper, Schneider & Covacevich 2000 [description in Couper *et al.*, 2000] from Mt Elliot; *P. gulbaru* Hoskin, Couper & Schneider 2003 from the southern Paluma Range) and to the south of the St Lawrence Gap (*P. caudiannulatus* Covacevich 1975 and *P. kabikabi* Couper, Hamley & Hoskin 2008 from south-east Queensland) or well to the south (*P. platurus* Shaw [in White 1790] from the Sydney region, New South Wales).

Of the *Phyllurus* occurring on the mid-east Queensland coast, *P. ossa* has the broadest distribution. The