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Revision of the genus *Cyrtodactylus* Gray, 1827 (Squamata: Gekkonidae) in Australia

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Abstract

The gekkonid lizard genus *Cyrtodactylus* in Australia is revised based on a combination of morphology and mitochondrial (ND2) sequence data. Previous hypotheses that the Australian populations are assignable to a New Guinea species, *C. louisiadensis*, or to a *Cyrtodactylus louisiadensis* species group defined on shared colour pattern and enlarged subcaudal scales, are rejected. Evidence is provided for the existence of five endemic species in Australia, allopatrically distributed. *Cyrtodactylus tuberculatus* (Lucas & Frost) is formally resurrected for Australian populations in the Cooktown area, from Mt Leswell north to Stanley Island. Four new species are described: *C. mcdonaldi* **sp. nov.** in the south, from the Chillagoe area north to Parrot Creek Falls, *C. hoskini* **sp. nov.** from the Iron Range area, *C. adorus* **sp. nov.** from the Pascoe River drainage, and *C. pronarus* **sp. nov.** from the McIlwraith Range. Concordant genetic and morphological evidence enable the hypothesis that *C. adorus* and *C. pronarus* represent a species pair distinct from the sublineage represented by *C. tuberculatus*, *C. mcdonaldi* and *C. hoskini*.

Key words: Reptilia, Gekkonidae, *Cyrtodactylus*, Cape York, Australia, new species

Introduction

Cyrtodactylus Gray, 1827, is the largest genus of gekkonid lizards. Like many other large genera, its speciose nature has hindered cladistic analysis of both intrageneric relationships and generic limits. A number of genera or subgenera (*Altigekko* Khan 2003, *Cyrtopodion* Fitzinger 1843, *Geckoella* Gray 1867, *Indogekko* Khan 2003, *Mediodactylus* Szczerbak & Golubev 1977, *Nactus* Kluge 1987, *Siwaligekko* Khan 2003, *Tenuidactylus* Szczerbak & Golubev 1984) have been proposed for species formerly treated as part of *Cyrtodactylus*, but there is ongoing dispute about the limits of many of these (see Krysko *et al*. 2007 for a partial review). Even with the removal of all species that could be considered part of these other taxa, *Cyrtodactylus* still includes 137 species. Well over half of those species (78) have been described since 2000 (Fig. 1), and most descriptions are based on small samples (117 of the 137 species have type series of fewer than ten specimens; 26 were described only from holotypes) from few localities (117 were described from one or two localities). There has been little change over time in the sampling/descriptive approach. When the data are divided into four quartiles (years 1827-72, 1873-1918, 1919-64, 1965-2011), there has been little or no change in the mode (1) and median number (1) of localities, or the modal number of specimens (1 for all quartiles except the third, with mode 2), and only a gradual increase in the median number of types (from 2 in each of the first two quartiles, to 3 in the third, and 5 in the most recent quartile). Small, geographically limited samples diminish the capacity to study morphological variation, both within and between populations, and consequently, there has been a tendency either to assign new specimens or populations to existing