



A new skink (Scincidae: *Carlia*) from the rainforest uplands of Cape Melville, north-east Australia

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Abstract

Carlia skinks are widespread in New Guinea, Wallacea, and northern and eastern Australia. Most Australian species occur in dry woodlands and savannas or marginal rainforest habitats associated with these. There are two rainforest species, parapatrically distributed in coastal mid-eastern Queensland (*C. rhomboidalis*) and the Wet Tropics of north-eastern Queensland (*C. rubrigularis*). These two sister species share a diagnostic morphological trait in having the interparietal scale fused to the frontoparietal. Here I describe a third species in this group, *Carlia wundalthini* **sp. nov.**, from rainforest uplands of the Melville Range, a rainforest isolate 170 km north of the Wet Tropics. This species is diagnosable on male breeding colouration, morphometrics and scalation. The description of *C. wundalthini* **sp. nov.** brings the number of vertebrate species known to be endemic to the rainforest and boulder-fields of Cape Melville to seven. *Carlia wundalthini* **sp. nov.** is distinct among these endemics in being the only one that does not appear to be directly associated with rock, being found in rainforest leaf-litter.

Key words: *Carlia rubrigularis*, *Carlia rhomboidalis*, Cape York, rainforest, boulder-field, lithoreugia, Queensland

Introduction

Carlia Gray, 1845 is a skink genus consisting of 42 species found in Australia, New Guinea and the Wallacea region of Southeast Asia (Donnellan *et al.* 2009; Zug 2010; Hoskin & Couper 2012). Only one species, *C. storri* Ingram & Covacevich, 1989, is shared between Australia and New Guinea. The majority of the 23 species found in Australia occur in north-eastern and coastal Queensland (Hoskin & Couper 2012). Most *Carlia* species inhabit open forests. While some of these also occur in rocky or gallery rainforests and vine thickets (e.g., *C. rimula* Ingram & Covacevich, 1980 and *C. decora* Hoskin & Couper, 2012), only *C. rhomboidalis* (Peters, 1869) and *C. rubrigularis* Ingram & Covacevich, 1989 could be considered ‘true’ rainforest species. These two species inhabit rainforest and associated wet sclerophyll forest in parapatric distributions along the east coast of Queensland. *Carlia rhomboidalis* occurs from about Mackay to Townsville and *C. rubrigularis* is restricted to the Wet Tropics region from Townsville to Cooktown. *Carlia rubrigularis* is abundant in the Wet Tropics, with the most northerly records being about 25 km south of Cooktown. The collection locality of a single specimen (QM J22945) from ‘Marina Plains’, about 160 km north-west of Cooktown, has been deemed erroneous due to the lack of any potentially suitable habitat in this region (Ingram & Covacevich 1989).

Carlia rubrigularis and *C. rhomboidalis* can be distinguished from all other *Carlia* in having the interparietal scale fused with the frontoparietal (Ingram & Covacevich 1989; Hoskin & Couper 2012). *Carlia rubrigularis* was split from *C. rhomboidalis* in 1989 on the basis of colouration, particularly of breeding males (Ingram & Covacevich 1989). In *C. rhomboidalis* the labials and underside of the head are blue and the throat is red (Fig. 1A), whereas in *C. rubrigularis* the entire lower surfaces of the head (termed here the ‘chin’) and throat are red (Fig. 1B). This colour difference in breeding males was deemed probably sufficient to confer breeding isolation should the species come into contact (Ingram & Covacevich 1989). Indeed, lab-tests of female choice have detected prezygotic isolation between these two species (Dolman 2008). Ingram & Covacevich (1989) concluded that the

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APPENDIX. Additional material examined.

Carlia rubrigularis: QM J17889, Palmerston SF, 16 km W of Innisfail (17°34' S, 145°53' E); QM J17901, Shiptons Flat, 32–48 km S of Cooktown (15°48' S, 145°16' E); QM J22667, Big Tableland, approx. 32 km SE of Cooktown (15°43' S, 145°17' E); QM J24649, Shiptons Flat, via Cooktown (15°48' S, 145°16' E); QM J25146, Home Rule, Mt Hedley Spur (15°44' S, 145°17' E); QM J25190, Home Rule, S of Cooktown (15°44' S, 145°17' E); QM J25198–25200, on Granite Ck to Cedar Bay track (15°45' S, 145°20' E); QM J25209, Horan Ck, Mt Finnigan NP (15°49'10" S, 145°16'50" E); QM J25212, Home Rule Falls (15°44' S, 145°17' E); QM J25240, QM J25245, Mt Hedley slopes (15°44' S, 145°16' E); QM J25249, Mt Hartley, near Home Rule, S of Cooktown (15°46' S, 145°19' E); QM J25293, near Home Rule Falls (15°44' S, 145°18' E); QM J25296, Gap Ck, 12 Mile Scrub (15°48'30" S, 145°19'30" E); QM J27004, QM J27006, Crowley Ck, via Mt Molloy (16°42' S, 145°24' E); QM J27080, Spear Ck, via Mt Molloy (16°42' S, 145°24' E); QM J27129, QM J27139, QM J27140, Shiptons Flat (15°48' S, 145°16' E); QM J27266, Mt Finlay (15°49' S, 145°21' E); QM J29956, 24 km N of Cairns (16°45' S, 145°39' E). ***Carlia rhomboidalis***: QM J53405, Mt Charlton foothills, via Mount Charlton (21°01' S, 148°44' E); QM J53496, E Funnel Ck, 12–15 km SW of Sarina (21°36' S, 149°12' E); QM J53576, Coffee Ck, Mt Jukes, via Mackay (20°59' S, 148°57' E); QM J67608, Charappa Ck (17°42'30" S, 145°40'30" E); QM J74124, QM J74761, QM J74762, Crediton Track, Wishing Pool, Eungella NP (21°10'30" S, 148°31'30" E); QM J75682, Finch Hatton Gorge (21°04'30" S, 148°38'30" E); QM J77664, Conway State Forest (20°21'00" S, 148°45'20" E); QM J79277, Mt Elliot NP (19°26'30" S, 146°56'40" E); QM J80868, Crediton State Forest (21°16'19" S, 148°32'26" E); QM J82696, QM J82698, QM J82702, QM J82704, QM J82706, QM J82721, Diamond Cliffs (21°22'50" S, 148°34'25" E); QM J89120, Cid Harbour, Whitsunday Island (20°15'36" S, 148°57'26" E); QM J89121, QM J89122, Cid Harbour, Whitsunday Island (20°15'46" S, 148°57'48" E); QM J89143, Airlie Beach, Shute Harbour Rd, Mandalay (20°17' S, 148°44' 21" E).