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A new species of *Lampropholis* skink (Lacertilia: Scincidae) from Scawfell Island, mid-east Queensland, Australia

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Abstract

A targeted reptile survey of Scawfell Island, approximately 50 km offshore from Mackay, revealed a species of *Lampropholis* skink that could not be assigned to any described species. Here I describe this as a new species, *Lampropholis isla* sp. nov., based on morphological differences and genetic divergence from congeners. Subsequent assessment of museum specimens revealed that *Lampropholis* had been previously collected from Scawfell Island (in 1994, but assumed to be the widespread species *L. delicata*). *Lampropholis isla* sp. nov. is restricted to rainforest areas on Scawfell Island and appears to be endemic to the island. Surveys on nearby islands of the South Cumberland Group, and islands to the north in the Whitsunday Islands Group, have failed to find any *Lampropholis* skinks. Suitable habitat is patchy on Scawfell Island but based on detection in all closed canopy sites surveyed, high density at most of these, and a lack of known threats, the conservation assessment of *L. isla* sp. nov. is Least Concern. Fire is a potential threat but impacts on rainforest habitat are limited due to rocky substrate in these areas. The island is protected within South Cumberland National Park. *Lampropholis isla* sp. nov. is the second endemic reptile species described for Scawfell Island, which is a higher number of vertebrate endemics than any other island off the coast of eastern Queensland. I discuss the general lack of rainforest-associated lizard species and genera on islands of this region.

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https://zoobank.org/References/4B44A9E6-CF70-463C-A8F8-FADAA557FA17

Introduction

Lampropholis Fitzinger, 1843 is a genus of 14 species of skinks restricted to eastern Australia. No rainforest species were described until Ingram (1991) described five species from rainforest areas of eastern Queensland. These populations had formerly been included in the widespread species *L. delicata* (De Vis, 1888). The descriptions were based on morphological traits, particularly differences in scalation and aspects of colour pattern. Detailed genetic work by Bell *et al.* (2010) and Singhal *et al.* (2018) revealed deep genetic divergences in the Wet Tropics rainforest species of north-east Queensland and the deepest of these lineages were described as morphologically cryptic species by Singhal *et al.* (2018). This resulted in the recognition of eight *Lampropholis* species restricted to rainforest areas

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along the disjunct mountain ranges of eastern Queensland, from Brisbane to Cooktown.

Here I describe a new *Lampropholis* species found during a reptile survey of Scawfell Island, 50 km north-east of Mackay (Fig. 1), on the 16–19 November 2021. Subsequent to the survey, I found that two specimens had been collected on Scawfell Island in 1994 (QM J59128, J59129) and lodged at the Queensland Museum as *L. delicata* (Hines & Leggett 1996). The new population of *Lampropholis* is described here and differs obviously in scalation, colour pattern, and mtDNA genetic divergence from all described species. The survey was part of a series of targeted surveys of rainforest-associated lizard genera on the continental islands of the South Cumberland and Whitsunday Island groups in mid-east Queensland, and I comment on the distribution of rainforest species on these islands.

Methods

Morphology

Detailed morphometrics and scale counts were performed on the type series. All measurements (except SVL) and bilateral counts were recorded on the left side. Additional individuals were assessed in life (using a hand lens or photographs) for the state of the interparietal scale (a distinct scale free from the frontoparietals or fused with the frontoparietals to form a single scale). Colour pattern in life (for *L. isla* sp. nov. and other *Lampropholis* species) was assessed visually in the field and from photographs. Forty-five specimens of *L. adonis* Ingram, 1991 were assessed for the state of the interparietal scale, and seven specimens of *L. couperi* Ingram, 1991 were measured for SVL, AG, FL and LHL (defined below) to compare relative body and leg lengths. *Lampropholis couperi* were measured due to the inferred sister species relationship to *L. isla* sp. nov. in the phylogeny below. These specimens (and measurements) are listed in the Appendix. Additional morphological information used for comparisons came from species descriptions (i.e., Ingram & Rawlinson 1981; Greer 1997; Ingram 1991; Singhal *et al.* 2008).

Morphometrics. Measurements were taken using Mitutoyo electronic callipers. Measurements were: snout to vent length (SVL), tip of snout to anterior margin of cloaca with body straightened; tail length (TL), from posterior margin of cloaca to tip of tail (with original tail length reflecting an entirely original and unbroken tail, and regrown tail length being the full length of a tail with any regrown component); interlimb length, measured as axilla to groin (AG) with body straightened; total length of forelimb (L1) and hindlimb (L2), insertion to tip of longest digit (claw included), with limb stretched straight perpendicular to body; forearm length (FL), from elbow to 'heel' of palm (i.e., radioulna length); lower hindlimb length (LHL), from knee to heel (i.e., tibiofibula length); head length (HL), mid anterior margin of ear to tip of snout; head width (HW), widest point; head depth (HD), lower jaw to top of head, taken between eyes.

Scale counts. Scale counts were: midbody scale rows, counted approximately midway between axilla and groin; paravertebral scales, counted in a straight line from the first nuchal scale to level with posterior margin of hindlimb; supralabial and infralabial scales, counted starting immediately behind the rostral and mental scales, respectively; supraciliary scale count; lamellae beneath fourth toe, count of enlarged series of scales beneath each digit, counted from distal scale and usually terminating near the basal junction of third and fourth toes.

Genetics

One individual of *L. isla* sp. nov. was sequenced for an approximately 850 base pair (bp) section of the protein-coding mtDNA gene ND4, using the forward primer 'ND4' (5' - TGA CTA CCA AAG CTC ATG TAG AAG C - 3') and reverse primer 'leu' (5' - CAT TAC TTT TAC TTG GAT TTG CAC CA - 3') (Arèvalo *et al.* 1994; Bell *et al.* 2010), and an annealing temperature of 48°C. The resulting sequence was uploaded to GenBank (PP526149). An individual of each of the other rainforest *Lampropholis* species was sequenced from as close to their type localities as possible, using the same primers. Of particular relevance were *L. adonis* and *L. couperi*. The type locality of *L. adonis* is 18 km N of Dalrymple Heights (21.067°S, 148.599°E), which is within 10 km of the Eungella sample (from 21.1486°S, 148.4832°E) used herein, and the type locality of *L. couperi* is Kondalilla NP (26.68°S, 152.86°E), which is about 70 km north of the Mt Glorious sample (from 27.3351°S, 152.7639°E) used here. These sequences were also uploaded to GenBank. A sequence of *L. delicata* from Shoalwater Bay, mid-east Queensland, was included as an outgroup. Species, GenBank accession numbers, and sampling localities are presented on Figure 2. These nine sequences were imported into Geneious Prime 2023.0.1 (https://www.geneious.com) and aligned using the Clustal Omega alignment method, with default values. The resulting alignment was inspected by eye for any obvious alignment errors and verified by translating the ND4 coding region into amino acids. RAxML v. 8.2.12 (Stamatakis 2014) was then used to generate a phylogeny, using the GTRGAMMA model (i.e., General Time Reversible Model, with optimisation of substitution rate and GAMMA model of rate heterogeneity). A rapid Bootstrap analysis was run in RAxML, followed by a 'thorough search' for the best-scoring maximum-likelihood tree, using 100 bootstrap replicates. The unrooted RAxML_bipartitions file was then imported into the program Figtree v. 1.4.4 (Rambaut 2018) and the *L. delicata* sequence was selected as the outgroup.

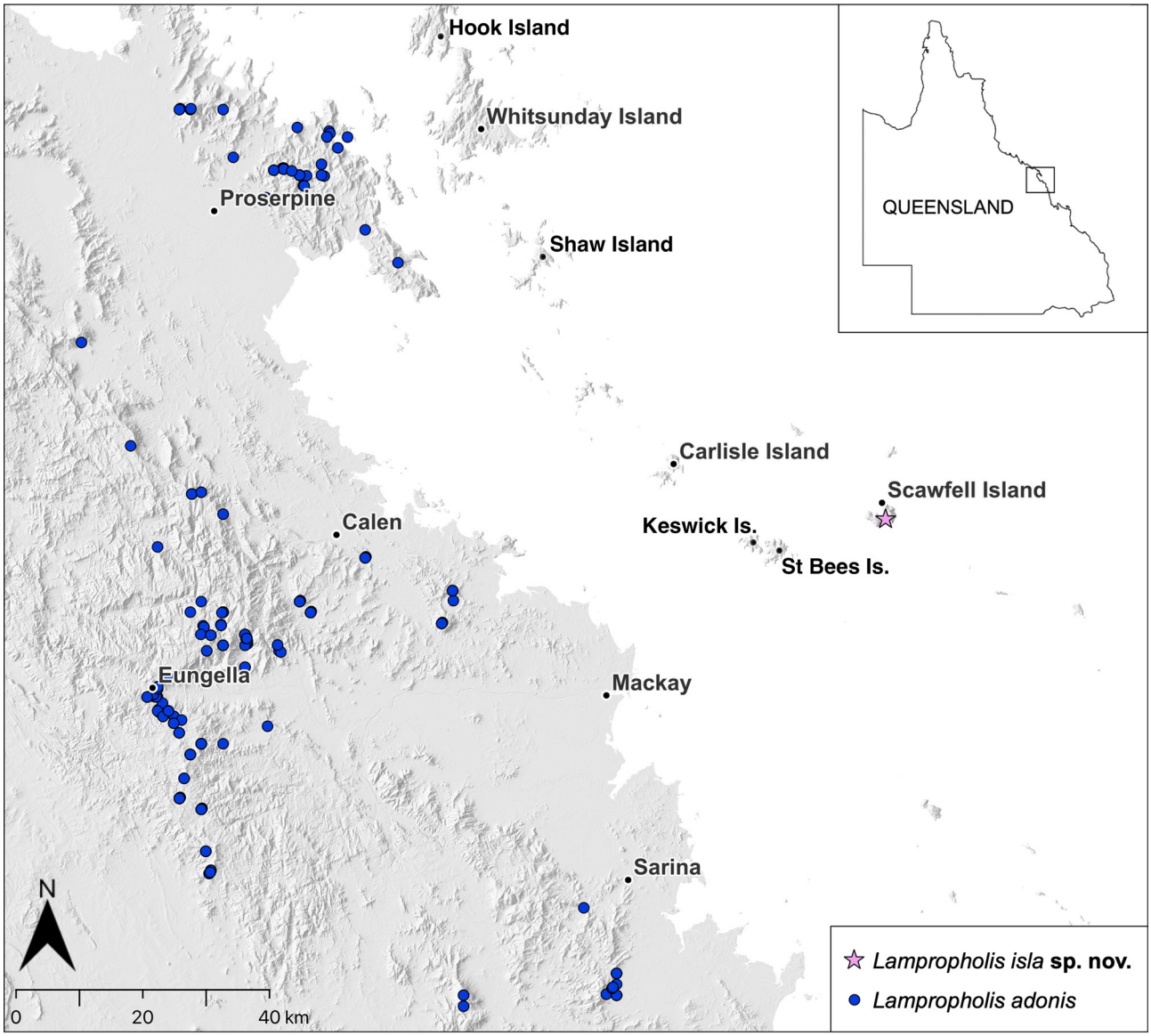

FIGURE 1. Map showing the distributions of *Lampropholis isla* sp. nov. and *L. adonis* in mid-east Queensland. The map also shows other islands where targeted surveys were conducted.

Results

Taxonomic decision

As outlined in the species description below, *Lampropholis* skinks on Scawfell Island cannot be morphologically assigned to any recognised species. They differ in various aspects of scalation, body size and shape, and colour pattern to other *Lampropholis* species (see Diagnosis and Comparisons sections). The ND4 mtDNA sequence data also supports recognition as a distinct species. The phylogeny in Figure 2 shows moderate to deep divergences among all recognised *Lampropholis* species in the rainforests of Queensland. *Lampropholis isla* sp. nov. is placed as a sister species to *L. couperi*, but with low support, and these two species are grouped in a clade with *L. adonis* (with moderate support). This phylogeny is not sufficient to resolve relationships between these species — that would require nuclear genes and more geographic sampling within *L. adonis* and *L. couperi* — but its purpose here is to compare sequences from each described species from as close as possible to their type localities. The *L. isla* sp. nov. sequence is highly divergent from the *L. adonis* and *L. couperi* sequences, and considerably more divergent (for ND4 mtDNA, at least) than seen between some other recognised *Lampropholis* species (Fig. 2). Based on the morphological difference and genetic divergence, I conclude that the population of *Lampropholis* on Scawfell Island is a distinct species, and I describe it herein as *L. isla* sp. nov. The species is recognised in principle under the Biological Species Concept (Mayr 1963). Reproductive isolation cannot be assessed because *L. isla* sp. nov. is allopatric to other *Lampropholis* species but it is inferred based on the level of morphological and genetic divergence compared to that seen between other recognised *Lampropholis* species, including some that show complete or

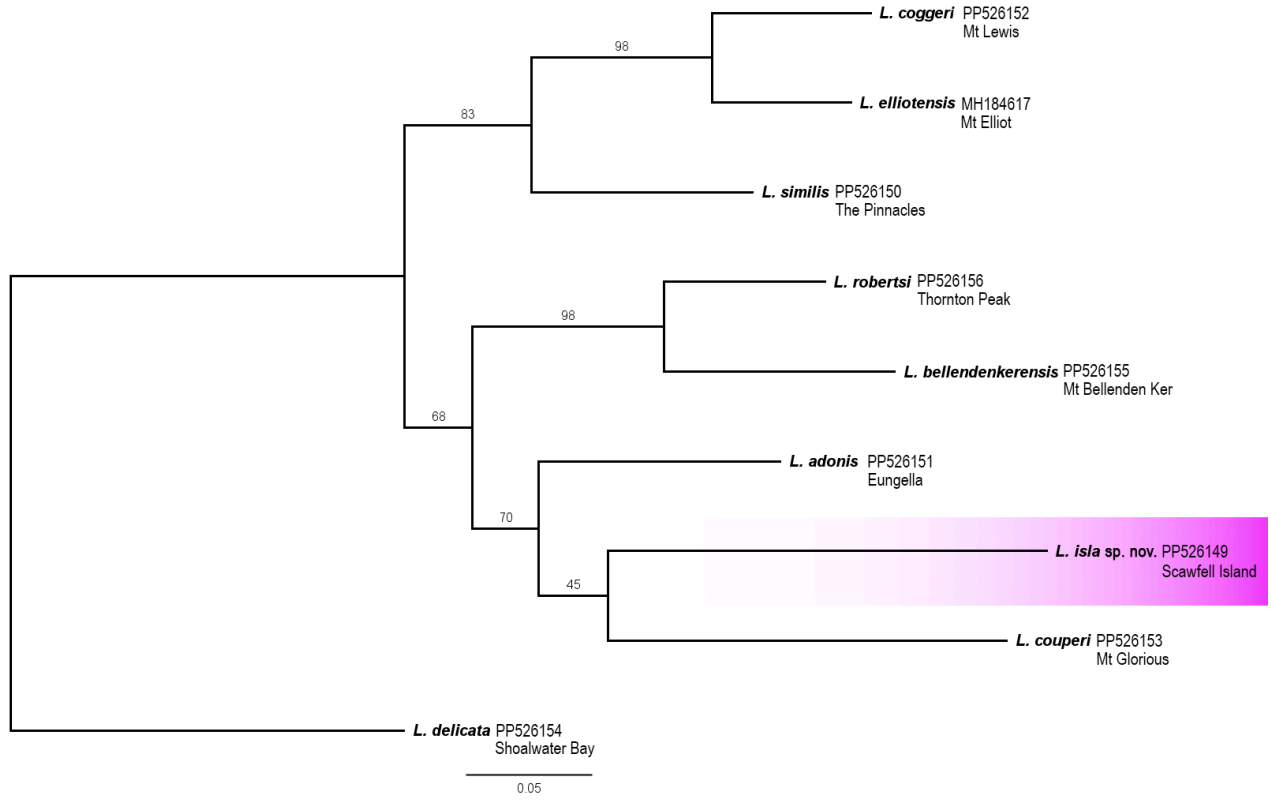

FIGURE 2. Phylogeny of rainforest *Lampropholis* species based on approximately 850 bp ND4 mtDNA, with *L. delicata* used as the outgroup. The *L. isla* sp. nov. sequence is marked in pink. GenBank accession code and locality are presented for all sequences. The scale bar shows the expected number of substitutions per site for this phylogeny.

near-complete reproductive isolation in sympatry (Singhal *et al.* 2018).

Discussion

Description of *L. isla* sp. nov. brings the number of *Lampropholis* species to 15. Eight of these species are restricted to rainforest habitats of eastern Queensland: *L. robertsi* Ingram, 1991 and *L. bellendenkerensis* Singhal, Hoskin, Couper, Potter & Moritz, 2018 are restricted to mountaintops of the northern and central Wet Tropics, respectively; *L. coggeri* Ingram, 1991 and *L. similis* Singhal, Hoskin, Couper, Potter & Moritz, 2018 are found in rainforests of the north and central/south Wet Tropics, respectively, and *L. elliotensis* Singhal, Hoskin, Couper, Potter & Moritz, 2018 occurs on Mt Elliot at the very southern end of the Wet Tropics region; *L. adonis* occurs through the scattered rainforest areas of mid-east and south-east Queensland, *L. couperi* occurs in rainforests of the south-east Queensland region, and *L. isla* sp. nov. is restricted to Scawfell Island. In total, these species occupy most rainforest areas of the coastal ranges of Queensland, between Brisbane and Cooktown, including many small patches. *Lampropholis adonis* exemplifies this, occupying most rainforest patches in mainland mid-east Queensland, from lowland 'dry rainforest' areas to upland moist rainforests of the Eungella area (Fig. 1).

It is therefore interesting that persistence of rainforest *Lampropholis* has been so poor on offshore islands of mid-east Queensland. I did not find any *Lampropholis* during targeted reptile surveys in rainforest on St Bees, Keswick and Carlisle Islands, which are the nearby islands to Scawfell Island that have the best potential habitat (Fig. 1). I also did not find *Lampropholis* during targeted surveys on Shaw or Hook Islands, to the north (Fig. 1), and the genus has not been found in reptile surveys of Whitsunday Island by Queensland Museum staff and other herpetologists. Interestingly, these surveys on mid-east Queensland islands have also not found other rainforest-associated skink genera that are present on the adjacent mainland, namely *Saproscincus* Wells & Wellington, 1984 and *Calyptotis* De Vis, 1886; nor the rainforest species *Concinnia amplus* (Covacevich & McDonald, 1980) which is widespread in rainforest on mainland mid-east Queensland.

Rainforest *Lampropholis* and the leaf-tailed gecko genus *Phyllurus* Schinz, 1822 have a similar distribution in mid-east Queensland. Both genera now have an endemic recognised for Scawfell Island — *L. isla* sp. nov. and *P. fimbriatus* Hoskin, 2023 — and *Lampropholis adonis* has a similar distribution to the combined distribution of *Phyllurus nepthys* Couper, Covacevich & Moritz, 1993, *P. ossa* Couper, Covacevich & Moritz, 1993, *P. isis* Couper,

Covacevich & Moritz, 1993 and *P. championae* Schneider, Couper, Hoskin & Covacevich, 2000 in mainland mid-east Queensland (Couper *et al.* 2000). The apparent absence of *Lampropholis* on the relatively large islands of Whitsunday and Hook is of particular interest because *Phyllurus* persisted on these islands, as *P. ossa tamoya* Couper & Hoskin, 2013. Persistence is in very small areas of deeply piled rock on these islands (Couper & Hoskin 2013; Hoskin, unpub. data), and this persistence can probably be attributed to the buffered, cool, moist conditions this microhabitat provides over thousands of years ('litho-refugia'; Couper & Hoskin 2008).

The presence of two vertebrate endemics on Scawfell Island is exceptional for an island off eastern Queensland. Other vertebrate endemics are: *Cophixalus hinchinbrookenesis* Hoskin, 2012 on Hinchinbrook Island, *Pymaeascincus sadlieri* (Greer, 1991) on Magnetic Island, *Carlia inconnexa* Ingram & Covacevich, 1989 on Whitsunday, Hook, Hayman and Lindeman islands (Hoskin & Couper 2012), and *Coggeria naufragus* Couper, Covacevich, Marsterson & Shea, 1996 on Fraser Island. The islands have remarkably few endemics compared to the high number of micro-endemic reptile and frog species on the coastal ranges of the adjacent mainland (e.g., Hoskin 2004; Moritz *et al.* 2005; Couper *et al.* 2000; Hoskin & Couper 2014; Rosauer *et al.* 2017). Most of these mainland endemics are rainforest-associated, and generally upland, and the lack of endemics on the islands can probably be attributed to the lack of elevation on the islands required for rainforest persistence through millions of years. Another contributing factor is the lack of deeply piled boulder areas on the islands, areas in which many vertebrate endemics occur on the mainland (e.g., Couper & Hoskin 2008; Hoskin & Aland 2011; Hoskin & Couper 2013), and for which the deeply piled granite boulder-fields of Scawfell Island are an exception. Two vertebrate endemics on Scawfell Island highlights the conservation significance of this island.

Taxonomy

The new species is assigned to *Lampropholis* based on the following character states: well developed limbs, each with five digits; small to moderate ear opening; lower eyelid movable, with a transparent disc (Cogger 2014).

Lampropholis isla sp. nov.

Figures 3, 4, 5A

https://zoobank.org/References/D4B8C470-2F76-404B-A699-94A217AA58AE

Holotype (Fig. 3). QM J98076, adult male, regrown tail, Scawfell Island (20.8688°S, 149.5918°E; 20 m a.s.l.), 16 November 2021, C. J. Hoskin, field collection code (conx6148). **Paratypes.**QM J98077–J98081 (field collection codes conx6149–conx6153, respectively); collection details as for holotype; details of specimens in Table 1.

Additional material. QM J59128, J59129, Scawfell Island, 20.8667°S, 149.6167°E, 21/09/1994, H. B. Hines.

Diagnosis. Distinguished from congeners by the following characters: free interparietal scale; bright orange on flanks of breeding males; seven supraciliaries; four supraoculars; flanks unmarked by pale midlateral stripe or pale dashes.

Description of type series. ***Measurements and scale counts.*** Measurements and scale counts for the holotype and paratypes are presented in Table 1. SVL = average 40.9 mm (34.9–45.7). Proportions (average, followed by range in brackets): AG/SVL = 0.51 (0.49–0.53), FL/SVL = 0.11 (0.10–0.12), LHL/SVL = 0.12 (0.11–0.13), L1/SVL = 0.27 (0.24–0.29), L2/SVL = 0.37 (0.34–0.39), HL/SVL = 0.20 (0.19–0.21), HW/SVL = 0.15 (0.15–0.17), HD/SVL = 0.10 (0.09–0.11), TL/SVL (original) = 1.36 (1.22–1.43), TL/SVL (regrown) = 1.04 (1.02–1.07). Scale counts (average, followed by range in brackets): midbody scale rows = 28 (28–29), paravertebrals = 51 (49–54), supralabials = 7 (7–7), infralabials = 6 (6–6), supraciliaries = 7 (7–7), subdigital lamellae under 4th toe = 24 (22–26). ***General morphology*.** Robust. Head and body continuous, with almost no narrowing at neck. Snout rounded in profile. Limbs well-developed, pentadactyl, overlapping when adpressed. ***Scalation*.** Dorsal scales smooth (or with three faint striations), with a broadly curved posterior edge; nasals widely spaced; rostral and frontonasal in broad contact; prefrontals widely separated; frontal contacting frontonasal, prefrontals, first two supraoculars and frontoparietal; supraoculars four, second largest; supraciliaries seven, first generally largest; lower eyelid movable with small palpebral disc about half the size of lower eyelid; ear opening round, similar in size to palpebral disc; frontoparietals fused, interparietal free; primary temporal single, secondary temporals two (upper largest and overlapping lower); loreals two, similar in size, first taller, second broader; preoculars two, lower larger or similar in size; presuboculars two, upper largest; supralabials seven, with fifth below eye and last overlapping lower secondary temporal and postsupralabials; postsupralabial divided; infralabials six, two in contact with postmental; fourth toe longest, with enlarged subdigital lamellae, and a single row of scales on the dorsal surface; evenly-sized, rounded scales on plantar surface; outer preanal scales overlap inner preanals; three pairs of enlarged chin shields, first pair in contact, second pair separated by a single scale row, third pair separated by three scale rows. ***Colour pattern in spirit***. *Adult males* (QM J98076, QM J98077, QM J98078). Body: Dorsal ground colour light brown, generally unmarked except for occasional darker flecks (most prominent on QM J98077). A narrow, pale dorsolateral stripe is faint (QM J98078) to moderately distinct (QM J98076, QM J98077), extending from above ear to mid body. This is bordered below by a dark brown

Table 1. Morphological measurements and scale counts for the type specimens of *L. isla* sp. nov. All measurements are in mm. Original tail represents an entirely original tail; regrown tail represents a tail with a regrown component.

Accession	**J98076**	**J98077**	**J98078**	**J98079**	**J98080**	**J98081**
Age class	Adult	Adult	Adult	Adult	Subadult	Subadult
Sex	Male	Male	Male	Female	Male	Male
Tail state	regrown	regrown	regrown	original	original	original
Snout-vent length (SVL)	43.4	44.2	45.7	41.1	34.9	35.9
Interlimb length (AG)	23.1	21.8	23.1	21.3	18.6	18.1
Forearm length (FL)	5.1	4.6	4.7	4.1	3.9	3.9
Lower hindlimb (LHL)	5.6	5.4	5.8	4.6	4.3	4
Full forelimb (L1)	11.8	12.6	13.1	10.1	9.4	10
Full hindlimb (L2)	16	16.9	17.6	14	12.6	13.4
Head length (HL)	9	9.2	9	7.8	7	6.8
Head width (HW)	7.2	7	6.9	6	5.2	5.3
Head depth (HD)	4.7	4.4	4.2	3.7	3.2	3.2
Tail Length (TL)	45	45	49	58	50	44
Midbody scale rows	29	28	28	28	28	28
Paravertebral scales	52	50	50	52	54	49
Supraciliary scales	7	7	7	7	7	7
Supralabial scales	7	7	7	7	7	7
Infralabial scales	6	6	6	6	6	6
4th toe lamellae	23	23	23	25	22	26

upper lateral zone, with a reasonably sharp transition to paler lower flanks. Faint orange behind armpits on QM J98078, and QM J98077 has an appearance of pale spotting in the groin area of the posterior flanks. Head: As for dorsum, even brown and generally unmarked. Ventral surfaces: Evenly pale cream or grey, with fine black edging to most scales, giving a finely speckled appearance; chins white. Limbs: Light brown, generally unmarked, but scattered dark and pale spots/smudges on hindlimbs of QM J98076 and QM J98077. Tail: Dorsal surface light brown with little pattern; some dark flecking on sides and ventral surfaces, particularly for original tails on which more pronounced dark flecking on a whiter background colour can give a flecked appearance. *Subadult males* (QM J98080, QM J98081). As described above but dorsal surfaces darker brown and not marked with fine black flecks; white dorsolateral line particularly prominent on QM J98080; darker upper lateral area grades more evenly to paler lower flank on both; lower flanks flecked with white spots; white flecks and spots on limbs (particularly hindlimbs on QM J98081); ventral surfaces paler and less marked. *Adult female* (QM J98079). More evenly coloured on dorsal and lateral surfaces than males, to the point of being almost patternless (no dark striations on dorsal scales, or fine dark markings on head, and very faint dorsolateral line above shoulders). Upper lateral zone mahogany brown, with more of a gradation to pale lower flanks than for adult males. Paler ventrally than males, but still with fine black flecks. Also paler on underside of original tail, with more obvious black flecking, and scattered white spots down sides of tail. ***Colour pattern of in life****. Males*

FIGURE 3. Holotype of *L. isla* sp. nov. (QM J98076) in life (A) and preserved (B).

(e.g., Figs 3A, 4A–E, 5A). Light brown to copper or straw coloured on dorsal surface of head, body and tail; essentially unmarked except for black or pale flecks on some individuals. Faint yellowish or gold dorsolateral stripe from posterior ear to mid body or hindlimbs; conspicuous on some individuals, almost absent on others. Thin, dark brown line along lower edge of rostral scale, with dark markings extending through nasal and loreal scales to eye and then continuing posterior to eye along upper temporal region to above ear. Typically, a black spot in the middle of the interparietal scale, and often black flecks on supraoculars and other head scales. Lateral surfaces, from forelimbs to hindlimbs, bright orange to reddish, evenly bright along entire lower flank in some individuals, or concentrated from forelimb to mid body in others; upper lateral zone darker, faintly to heavily marked with diffuse dark markings to give a two-tone appearance of dark upper flank and orange lower flank; transition between darker upper and orange lower flanks fairly abrupt in most individuals, but more of a transition in others; pale spotting on the flanks of some individuals. Sides of neck brownish orange in most individuals, or bright orange in some. Sides of tail brown with pale spots, with an orange flush on some individuals. Upper surfaces of limbs brown, with sparse to heavy dark and light flecking or spotting. Ventral surfaces consist of white chin and throat, with sparse dark flecks or smudges, and faint bluish wash on chin of some individuals; belly cream with black and orange flecks; underside of tail white and mottled with black, brown and orange markings; underside of feet black; underside of limbs white/cream with heavy black spotting. *Females* (e.g., Fig. 4F). As described for males but lacking all orange markings; flanks are more evenly dark brown.

Etymology. The species name *isla* is Spanish for 'island', referring to the restriction of this species to an island. The name is used as a noun in apposition.

Proposed common name: Scawfell Island Sunskink.

FIGURE 4. Variation in *L. isla* sp. nov. in life. Panels A–E show five different adult males, including ventral surface (D) and close-up of head (E) showing free interparietal scale. Panel F shows an adult female — note the lack of orange flush on the flank. The photos include two specimens in life: (A) QM J98078; (F) QM J98079.

Comparison with congeners. Most similar in general appearance to *L. adonis*, which occurs in rainforest areas of the adjacent mainland (Fig. 1). Readily distinguished from *L. adonis* by free interparietal scale (*vs.* fused with frontoparietals in *L. adonis* to form one scale), and by bright orange flanks of males (*vs.* more reddish and generally more heavily marked dark in *L. adonis*; e.g., Fig. 5B). In addition to the type series, about 30 individuals of *L. isla* sp. nov. were assessed in the field and all had a free interparietal scale, compared to a fused interparietal for all 45 specimens of *L. adonis* examined by myself (Appendix) and the very large series examined by Ingram (1991).

Lampropholis isla sp. nov. is distinguished from all other congeners by orange colouration on the flanks of breeding males. Further distinguished from *L. couperi* by shorter body (AG/SVL 0.49–0.53 *vs.* 0.52–0.60 in *L. couperi*), longer forelimbs (FL/SVL 0.10–0.12 *vs.* 0.08–0.10 in *L. couperi*), and snout marking of a black band around lower rostral scale (*vs.* black 'ball point pen' mark on tip of rostral in *L. couperi*). Further distinguished from members of the *L. coggeri* group (*L. coggeri*, *L. similis*, *L. elliotensis*) of the Wet Tropics by dorsal and lateral surfaces generally not marked with pale or dark flecks or spots (*vs*. typically flecked with black dashes and paler spots in *L. coggeri* group). Further distinguished from *L. robertsi*, *L. bellendenkerensis*, *L. delicata*, *L. colossus* Ingram, 1991 and *L. guichenoti* (Duméril & Bibron, 1839) by lack of sharp demarcation between dark upper and lighter lower flanks (often involving mid-lateral pale line or dashes in those species, especially for females). Further distinguished from *L. mirabilis* Ingram & Rawlinson, 1981 by general lack of pattern on body (*vs.* dark and white spots and flecks in *L. mirabilis*) and relatively short limbs (*vs.* long in *L. mirabilis*). Further distinguished from *L. amicula* Ingram & Rawlinson, 1981 by having 7 supraciliaries (*vs.* 5 in *L. amicula*) and by larger size (SVL max. 46 mm *vs.* max. 35 mm in *L. amicula*). Further distinguished from *L. caligula* Ingram & Rawlinson, 1981 and *L. elongata* Greer, 1997 by having 4 supraoculars (*vs.* 3 in those species) and moderate body length (*vs.* obviously elongate body form in those species).

Distribution. Appears to be restricted to Scawfell Island, approximately 50 km north-east of Mackay, in mid-eastern Queensland (Fig. 1). Targeted surveys of other islands in the region have not found the species

FIGURE 5. Male *L. isla* sp. nov. (A) compared with a male *L. adonis* (B) from Eungella. Note the more prominent orange lateral marking on *L. isla* sp. nov.

(Fig. 1), including surveys of South Cumberland islands by myself: Carlisle Island (13/11/2021–16/11/2021), Keswick Island (14/11/2023–15/11/2023), St Bees Island (15/11/2023–17/11/2023). Known from five of the larger gully catchments surveyed on Scawfell Island, on both the north and south sides of the island. Observed from near sea level to approximately 250 m elevation.

Habitat and habits. Occurs in leaf-litter in gullies in rainforest and associated moist sclerophyll communities. Habitat at all sites includes granite rocks. The species is particularly common where leaf-litter has accumulated on and among rocks, under a closed forest canopy (Fig. 6). Diurnal — seen basking in sun gaps on the forest floor and actively foraging among leaf-litter. Occurrence is patchy, with high density in closed forest gullies and absence in open forest communities. The only other skink species observed in micro-sympatry with *L. isla* sp. nov. in rainforest gullies was *Concinnia brachysoma* (Lönnberg & Andersson, 1915), which primarily uses rock surfaces rather than the leaf-litter.

Conservation. A minimum convex polygon around known sites (i.e., an estimate of extent of occurrence, EOO) totals approximately 5.5 km^2. However, assessing habitat on the island from satellite imagery would suggest an EOO more in the order of 10 km^2. *Lampropholis isla* sp. nov. is restricted to closed canopy areas, so the area of occupancy (AOO) would be much smaller than this. However, abundance is generally high within occupied areas and there are likely to be many such areas across the island. Additionally, no threats have been identified that are currently likely driving decline or could drive decline in the foreseeable future. The only potential threat to consider is fire, if the frequency or severity increased to the point of reducing the area of fire-sensitive closed canopy forest on the island. Fire is not currently deemed a threat because many sites

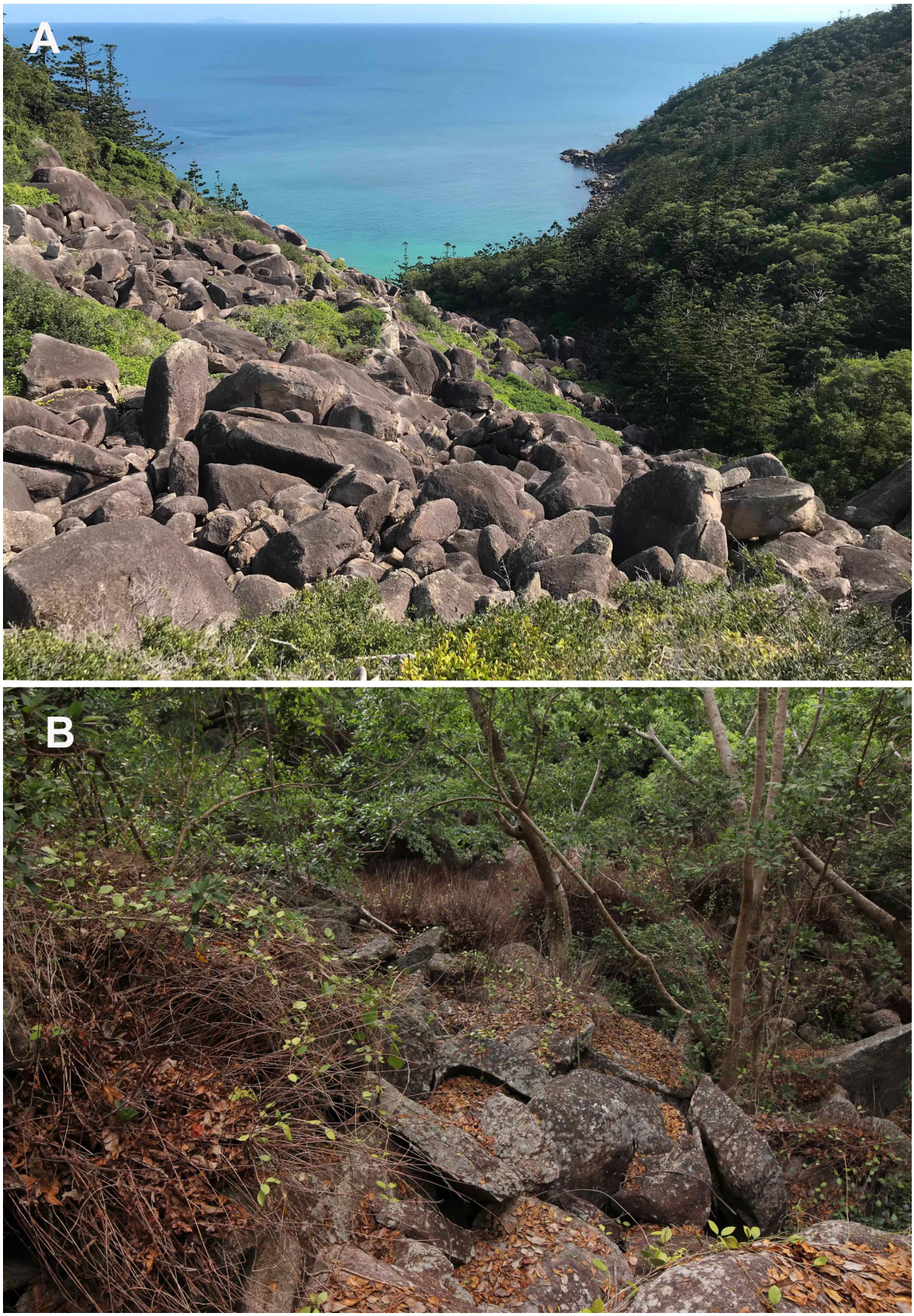

FIGURE 6. Habitat of *L. isla* sp. nov. on Scawfell Island. Panel A shows the mix of boulder-field and forest that is typical for the island. *Lampropholis isla* sp. nov. is found in areas of closed canopy cover, particularly gully-lines where rainforest grows amongst boulders (B).

are known across the island and most of these have significant rock substrate, which excludes fire or limits its impact. Therefore, despite a small distribution and restriction to a single 'locality' (Scawfell Island), *L. isla* sp. nov. does not currently fit any criteria for threatened species listing under IUCN Red List or EPBC Act guidelines due to a lack of identified threat.

Appendix. Details of *L. adonis* and *L. couperi* specimens examined at the Queensland Museum. All *L. adonis* examined had the frontoparietals and interparietal fused to form one scale. Measurements of SVL, AG, FL and LHL are given for each *L. couperi* specimen examined.

L. adonis: QM J31867, Borumba Dam area, near Conondale Range, 26.5167°S, 152.5833°E; QM J32702, QM J32703, QM J32731, QM J32741, Crediton, 21.2167°S, 148.5667°E; QM J32753, QM J32755, QM J32756, QM J32764, QM J32773, QM J32796, Brandy Ck, 20.35°S, 148.7167°E; QM J33611, QM J33683, QM J33711, QM J33712, Bulburin SF, 24.5167°S, 151.4833°E; QM J34037, Finch Hatton NP, 21.1°S, 148.6333°E; QM J35098, QM J35123, Thurgood Farm, 18 km N of Dalrymple Heights, 21.0667°S, 148.6°E; QM J42431, Wootha, about 4 km SW of Maleny, 26.7833°S, 152.8167°E; QM J46173, Eungella School, 21.1333°S, 148.5°E; QM J62748, QM J62749, Carnarvon Ck, Carnarvon NP, 25.0686°S, 148.2489°E; QM J68027, QM J68028, Mt Robert, via Builyan, 24.5152°S, 151.2675°E; QM J69322, QM J69323, Mudlo SF, 26.0112°S, 152.2306°E; QM J71745, Mt Walsh NP, 25.5606°S, 152.0556°E; QM J71753, Mt Bauple, 25.8083°S, 152.5667°E; QM J71764, QM J71769, Mt Perry, 25.2167°S, 151.7°E; QM J71795, Mt Bauple, 25.7985°S, 152.5675°E; QM J77656, Conway SF, 20.3664°S, 148.7236°E; QM J86762, Cameron Creek, Sarina, 21.5894°S, 149.1933°E; QM J86768, QM J86769, QM J86770, Diggings Road, Eungella, 21.1454°S, 148.4841°E; QM J86772, QM J86775, QM J86776, QM J86777, Mount Macartney, Eungella region, 20.8360°S, 148.5522°E; QM J86778, QM J86779, QM J86780, QM J86781, Brandy Creek, Conway Ra., 20.3424°S, 148.6774°E; QM J88363, Mount Urah, 25.8547°S, 152.3556°E. ***L. couperi***: QM J40156, Kroombit Tops, 24.3667°S, 151.0167°E, SVL 38.00, AG 22.77, FL 3.23, LHL 4.27; QM J47950, Mt Nebo, 27.3833°S, 152.7833°E, SVL 40.12, AG 22.92, FL 3.34, LHL 4.10; QM J54889, Kroombit Tops, 24.3667°S, 151.0333°E, SVL 39.82, AG 20.83, FL 3.44, LHL 4.42; QM J54890, Kroombit Tops, 24.3667°S, 151.0333°E, SVL 44.69, AG 23.74, FL 3.93, LHL 4.63; QM J78437, Mt Glorious Rd, 27.4203°S, 152.8367°E, SVL 37.35, AG 21.31, FL 3.48, LHL 4.07; QM J78444, Bellthorpe SF, 26.8544°S, 152.7383°E, SVL 33.66, AG 18.00, FL 3.09, LHL 3.95; QM J78445, Imbil SF, 26.7728°S, 152.6597°E, SVL 38.73, AG 20.96, FL 3.50, LHL 4.62.

Disclosures

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