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Yet another new species in the Australian *Ctenotus taeniolatus* (White, 1790) species group (Squamata:Scincidae), including detailed notes on sexual dimorphism and ecology.

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ABSTRACT

As of early 2023 there were three recognized species in the *Ctenotus taeniolatus* (White, 1790) complex. These were:

1/ *Ctenotus taeniolatus* (White, 1790), with a type locality of New South Wales, of the form found around Sydney and environs.

2/ *C. miowera* Wells and Wellington, 1985 with Miowera, north Queensland as the type locality and of the form found in most of that state,

3/ *C. robertcooki* Hoser, 2022, type locality of collected from Kingsgate Road, about 34km east of Glen Innes, New South Wales, Australia, Latitude -29.80166 S., Longitude 151.98249 E, being from the New England Region of northern New South Wales and far south-east Queensland and with a divergence of 1.75 MYA or more from the nominate form of *C. taeniolatus* as found by Colgan *et al.* (2009).

This paper names a divergent fourth species in the complex from north-east Victoria, nearby parts of far southern New South Wales and the ACT as *Ctenotus sonnemannorum* *sp. nov.*.

Externally, it is readily separated from the preceding three taxa by a consistently different configuration of stripes at the anterior part of the dorsum and head, being black in the mid stripe, versus brown in the other three taxa.

Separate to the preceding, the following important fact should be noted.

Innocuascincus Hoser, 2022 as proposed by Hoser in 2022 is an objective junior synonym of *Serenitas* Wells, 2009 as proposed in Wells (2009) for the same taxonomic concept.

Keywords: Taxonomy; nomenclature; Australia; Queensland; New South Wales; Victoria; ACT; New England; lizard; skink Copper-tailed skink; *Ctenotus*; *taeniolatus*; *miowera*; *robertcooki*; *Innocuascincus*; *Serenitas*; new species; *sonnemannorum*.

INTRODUCTION

For decades it has been known that species diversity in Australia's lizards has been severely under-estimated (Wells and Wellington, 1983, 1985).

To 10 August 2023, I (Raymond Hoser) have added more than 230 species of reptiles to the Australian total over the preceding two and a half decades, the bulk of these being lizards and yet more forms await formal description.

In terms of the putative species *Ctenotus taeniolatus* (White, 1790), Hoser (2022a) published the most recent work on the taxonomy of the group and cited all relevant references.

The three named and recognized species were:

1/ *Ctenotus taeniolatus* (White, 1790), with a type locality of New South Wales, of the form found around Sydney and environs.

2/ *C. miowera* Wells and Wellington, 1985 with Miowera, north Queensland as the type locality and of the form found in most of that state,

3/ *C. robertcooki* Hoser, 2022, type locality of collected from Kingsgate Road, about 34km east of Glen Innes, New South Wales, Australia, Latitude -29.80166 S., Longitude 151.98249 E, being from the New England Region of northern New South Wales and with a divergence of 1.75 MYA or more from the nominate form of *C. Taeniolatus* as found by Colgan *et al.* (2009).

In the face of the preceding, a fourth and very divergent form has been identified in far north-east Victoria and nearby parts of southern New South Wales and the ACT. While molecular data is unavailable, it is so divergent from the others, allopatric to them and with no intermediate form specimens known, so quite clearly appeared to be of a different species. Therefore it was inspected more closely with a view to formally name it as a new species in accordance with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

MATERIALS AND METHODS

Specimens were inspected from across the putative range for the complex, from north-east Queensland to north-east Victoria.

Consistent differences were noted and readily matched with relevant species.

However in the case of southern specimens, there were two different forms noted.

These were more closely inspected to quantify differences and to confirm the absence of any intermediate forms and to try to ascertain the distributional limits of the type form (AKA Sydney basin form) and that from north-east Victoria, the two being proximal in distribution to one another.

Relevant literature as cited in Hoser (2022a) was also consulted to confirm the absence of any possible synonym forms or names to the potential Victorian taxon.

RESULTS

Comparative inspection of specimens of *C. taeniolatus* from the Sydney region, being of the type form and what is perhaps best described as "the north east Victorian form" revealed consistent differences between the two enabling me to make a reliable species level diagnosis.

As a result of the preceding, I herein formally name as new, "the north east Victorian form" as *C. sonnemannorum* sp. nov..

Based on inspections of many specimens, those from the Canberra, ACT region and south appear to be of this new species, while those from the Sandstone regions to the north are of the nominate form of *C. taeniolatus*.

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal description, spelling should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (ICZN).



Ctenotus sonnemannorum sp. nov.

Granite habitat of *Ctenotus sonnemannorum* sp. nov. immediately west of Beechworth, Victoria, Australia, and adult specimen.



Hoser 2024 - Australasian Journal of Herpetology 67:3-9.

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This includes if Latinisation is wrong, apparent spelling mistakes and so on.

Any online citations within this paper, including copied emails and the like, are not as a rule cited in the references part of this paper and have the same most recent viewing and checking date of 12 November 2023 (at which time they were still online as cited).

Unless otherwise stated explicitly, colour and other descriptions apply to living adult male specimens of generally good health, as seen by day and not under any form of stress by means such as excessive cool, heat, dehydration, excessive ageing, abnormal skin or reaction to chemical or other input

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within the formal description and does not rely on material within publications not explicitly cited herein.

CTENOTUS SONNEMANNORUM SP. NOV.

LSIDDurn:lsid:zoobank.org:act:F6520468-C183-40A4-9528-CAB5C36EB497

Holotype: A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number D60940 collected from Mount Leinster, Victoria, Australia, Latitude -36.9083 S., Longitude 147.907 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number D49716 collected from 6 km North-north-east of Tongio, Victoria, Latitude -37.17 S., Longitude 147.73 E.

Diagnosis: Until now the species *Ctenotus sonnemannorum* sp. nov. has been treated as a north-east Victorian population of *Ctenotus taeniolatus* (White, 1790).

However *C. sonnemannorum* sp. nov. is readily separated from *C. taeniolatus* (White, 1790), *C. robertcooki* Hoser, 2022 and *C. miowera* Wells and Wellington, 1985 as follows:

On the upper dorsum of all four species are two thin yellowish white lines running longitudinally down the back, either side of the black mid-line, as well as another two similar yellowish white lines running longitudinally down the back on the interface between dorsum and flank.

Between the middle and edge line on either side, the dorsum colour is brown or mainly brown, effectively forming another line.

Each of these lines starts at the back of the head and ends just beyond the pelvic girdle.

In terms of the brown line near the lateral edges of the dorsum, in *C. taeniolatus*, this narrows anteriorly, with black appearing on either side of this and between the white line border, in effect forming a pair of narrow black lines, either side of the brown and in turn bound by the whitish-yellow lines. However in this species as well as *C. robertcooki* sp. nov. and *C. miowera* this brown line extends well anterior of the front limbs.

Readily separating *C. sonnemannorum* sp. nov. from the following is that the brown line effectively ends about half-way up the body, meaning that anteriorly there is only black between the four thin yellow-white lines. In no adult specimens seen does the brown ever come close to being more anterior of the front limbs, whereas the reverse consistently applies in the three other species.

C. sonnemannorum sp. nov. is further separated from the other three species in that the black stripe from nostril to eye is thick and noticeably expanding up on the upper edge, versus thin and not expanding up on the upper edge in the other species.

In terms of separating the other three previously described species within the complex, the following applies.

The species *Ctenotus taeniolatus* (White, 1790) is readily

separated from *Ctenotus robertcooki* sp. nov. by the possession of a pale snout with distinctive dark spots or blotches versus none in *C. robertcooki* sp. nov.. Furthermore *C. taeniolatus* has black on the outer side of the two middle whitish lines, versus not so in *C. robertcooki* sp. nov..

In common with *C. robertcooki* sp. nov., *C. miowera* Wells and Wellington, 1985 has a dark coloured snout and does not have black on the outer side of the two middle whitish lines. However in contrast to all of *C. sonnemannorum* sp. nov., *C. robertcooki* sp. nov. and *C. taeniolatus* the black band running down the midline of the body in *C. miowera* extends all or most of the way down the (original) tail, versus less than a third of the way down in *C. robertcooki* sp. nov. and less than halfway down in *C. taeniolatus* and *C. sonnemannorum* sp. nov..

The black band running down the midline of the body terminates on the tail less than the length of the extended hind limb and toes in *C. robertcooki* sp. nov., versus always past this in *C. taeniolatus* and *C. sonnemannorum* sp. nov.. The black band running down each flank of the tail is thin in *C. robertcooki* sp. nov., medium in *C. taeniolatus* and *C. sonnemannorum* sp. nov. and thick in *C. miowera*.

C. taeniolatus, *C. robertcooki* sp. nov., *C. sonnemannorum* sp. nov. and *C. miowera* as a foursome are separated from all other East Australian lizards in the genus *Ctenotus* Storr, 1964 by the following suite of characters:

Well defined, black mid-dorsal stripe running from nape past the base of the tail; no prominent spots on the body of the adult; nasal is not or is only very weakly grooved; 18-22 subdigital lamellae under the fourth toe, each with a blunt keel; eight yellow-white longitudinal stripes on the flanks and back, with well-defined brown or black stripes intervening; a narrow pale upper lateral stripe is always continuous from the ear opening to the groin; original tail is commonly, but not always a copper-red colour at the posterior end.

C. sonnemannorum sp. nov. is depicted in life in images in this paper as well as on the front cover of this issue of this journal, which should be treated as part of this formal publication, as well as online at:

<https://www.inaturalist.org/observations/151190052>

and

<https://flickr.com/photos/ryanfrancis/51915698862/>

(specimen is not Tasmanian as identified in the caption)

and

<https://collections.museumsvictoria.com.au/species/15230>

and

<https://www.inaturalist.org/observations/91513632>

and

<https://www.inaturalist.org/observations/152103146>

Ctenotus taeniolatus (White, 1790) in life is depicted in Hoser (1989) on pages 11 and 88 (at bottom left), Cogger (2014) at page 525 at bottom right (and front cover), Swan, Shea and Sadlier (2009) on page 119 and online at:

<https://www.inaturalist.org/observations/27179813>

and

<https://www.inaturalist.org/observations/41436549>

C. robertcooki sp. nov. in life is depicted in Wilson and Swan (2017) on page 275 at bottom left and online at:

<https://www.inaturalist.org/observations/39394957>

and

<https://www.inaturalist.org/observations/41586030>

and

<https://www.inaturalist.org/observations/103123932>

C. miowera Wells and Wellington, 1985 in life is depicted online at:

<https://www.inaturalist.org/observations/111504510>

The "Additional notes on *C. sonnemannorum* sp. nov. and other sympatric reptile species" below explicitly form part of this formal species description.

Distribution:

C. sonnemannorum sp. nov. is found from the ACT and Bateman's Bay in the north, south, through nearby parts of southern New South Wales to north-east Victoria to near Mount Buller in the south and Tatong in the south-west.

C. robertcooki sp. nov. appears to be restricted to the northern New England region of New South Wales and immediately adjacent southern Queensland in the so-called Granite-belt only. This is an area generally between Armidale in the South in New South Wales and Girraween in the north in Queensland, not including the nearby slopes and plains to the east or west.

Ctenotus taeniolatus as defined herein is distributed generally south and also to the immediate west and south-west of the northern New England region of northern New South Wales, south along the coast, ranges and slopes to include the sandstone plateaus of the Sydney basin, including those west of Nowra, with a southern extremity of known distribution being Ulladulla.

This is a different distribution for this species as was given in Hoser (2022), because *C. sonnemannorum* sp. nov. was included with that species.

C. miowera as defined herein appears to occupy most of the east coast, ranges and nearby slopes of Queensland south of about Cooktown and not including the Granite Belt of the southern highlands near the New South Wales border.

Etymology: *C. sonnemannorum* sp. nov. is named in honour of Neil and Cathy Sonnemann of Murrumbidgee, north-east Victoria in recognition of many decades contributions to herpetology in Australia.

ADDITIONAL NOTES ON *C. SONNEMANNORUM* SP. NOV. AND OTHER SYMPATRIC REPTILE SPECIES.

In this species there is also a well-defined sexual dimorphism.

Adult males are slightly smaller and more gracile in build than females.

On first light in the morning of 21 October 2023, 52 specimens were caught and measured in a 150 minute period, arising from lifting of rocks in an area of suitable habitat.

All were adults.

Specimens were released after being measured and sexed.

This was in the vicinity of Flat Rock Road, 3 km east of Beechworth, Victoria. Females (n=28) averaged 6 cm S-V and with a 16 cm tail and body combined, with the largest / longest being 18.5 cm in total length.

The males (n=24), were both thinner in build and 1 cm shorter in total length on average, with the largest / longest being 6 cm snout-vent and 16 cm in total length.

Significantly the tail morphology between the sexes is also noticeably consistently different.

The adult female lizard has a tail that is thick at the base and continues thick further down from the base, implying the presence of hemipenes within.

However hemipenes are obviously absent, the relevant part of the tail simply being thick and muscular.

By contrast, the tail in the male rapidly thins shortly past the base and is thin below this point.

The hemipenes are in the thicker part of the base of the tail and are also relatively small and short when extruded, explaining the relatively small and short swelling of the relevant anterior part of the tail.

The preceding facts means that on external examination alone, it would be easy to confuse and reverse identification of males and females as the relevant tail morphology is in effect opposite to that seen in most adult Australian elapids, being what is familiar to most Australian herpetologists.

I was able to confirm the preceding by virtue of the fact that all caught lizards were carefully probed with appropriate sized snake/lizard sexing probes and as a result there was no error in my sexing of any of the lizards.

While conditions were seasonally warm, all lizards were located sheltering under rocks, usually in a rock on rock situation, but with dirt also under the rock, allowing the lizards to occupy a well defined burrow. This was primarily because of the time of day the searching was done, (as in first thing in the morning and before the sun rose to a height sufficient to warm the rocks). No specimens were located under complete rock on rock situations in the absence of dirt although the sympatric species, *Diplodactylus fiacummingae* Hoser, 2023 was only found in that situation.

In the time that 52 specimens of *C. sonnemannorum* sp. nov. were located, just one *D. fiacummingae* was.

Noting that it was evident that the area had been searched at least once previously in the recent past by reptile collector/s (almost all liftable rocks had obviously been lifted and moved before), the disparity in numbers may be an artefact of collection as opposed to original differences in numbers in a virgin habitat. The geckos are sought after in the pet trade, while the small skinks are not.

This implied that geckos found had been taken, while the skinks had not been.

It is also possible that if skinks had been taken by collectors in the past, then they had been able to recover their populations more quickly.

Sympatric also in the area (being a habitat dominated by granite rock outcrops and exfoliations), were several other species, the following numbers which were found in the same 150 minutes of searching: One half grown Blind Snake *Anilius nigrescens* Gray, 1845 (male), 14 *Hemiergis talbinoensis* Copland, 1946 (of assorted sizes of both sexes), 8 *Ctenotus robustus* Storr, 1970 (one half grown and the rest adult of both sexes), 7 *Morethia boulengeri* (Ogilby, 1890) (all adult of both sexes), 1 *Amphibolurus muricatus* (White, 1790) (adult female), *Lampropholis guichenoti* (Duméril and Bibron, 1839) (one adult male) found in grassy area not near rock and adjacent to a log), *Egernia jossae* Wells and Wellington, 1985 (half grown female found under a large rock on rock).

The *C. sonnemannorum* sp. nov. displayed a preference for flat rocks, exposed to open sunlight (not shaded), typically about 3 to 9 cm thick on the edges of rock outcrops, being either rock on rock, with dirt on one part, or rock on dirt (but not deeply embedded), types of situations.

Significantly the sympatric *Ctenotus robustus* preferred situations either away from the rock outcrops, or in the alternative, occupied the underneath's of much larger and heavier rocks.

However the half grown *Ctenotus robustus* and a *C. sonnemannorum* sp. nov. were found occupying the underside of a single large rock.

The rock was about 30 cm high, 30 cm wide and about 45 cm long. The two lizards occupied burrows under different parts of the rock and were not immediately proximal to one another.

Without exception all the other preceding reptiles were otherwise found alone, strongly implying that as a rule the individual reptiles do not like the company of other reptiles.

The *Diplodactylus fiacummingae* Hoser, 2023 found occupied a large rock, wholly on rock and partially shaded by a small tree, which also sat on the west side of the rock, effectively shielding the gecko from the most extreme heat of the day.



Sexual dimorphism in *Ctenotus sonnemannorum* sp. nov.
Top photo, female on left. Bottom photo, female at bottom.



Hoser 2024 - Australasian Journal of Herpetology 67:3-9.

There were numerous other rock on rock situations immediately nearby, not occupied by any specimens of this species or any other reptile, implying that the *D. fiacummingae* found, had latitude to occupy various nearby sites by day, depending on season and thermal constraints.

Also found were two species of frogs, being four *Limnodynastes tasmaniensis* Günther, 1858 (adults, being 2 of each sex) and one *Crinia (Ranidella) fiacummingae* Hoser, 2023 (adult female), all found in damp situations between rock outcroppings.

Almost all liftable rocks had some kind of animal underneath, these being either reptiles or centipedes, with large spiders left often seen, and in the warmer situations ant nests.

This clearly indicated that the limiting factor on species and abundance in this area was habitat in the form of rocks and in the long term either removal of liftable rocks or addition of them could cause populations to fluctuate accordingly.

Obviously at warmer times of the year in warmer weather, the species found on the above date would have to take refuge elsewhere to avoid excessive heat, be it down burrows under the rocks if available, or elsewhere.

AN URGENT FORMAL CORRECTION TO AN EARLIER NOMENCLATURE ACT.

The following important fact should be noted.

Innocuascincus Hoser, 2022 as proposed in Hoser (2022b) is an objective junior synonym of *Serenitas* Wells, 2009 as proposed in Wells (2009) for the same taxonomic concept.

Under the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999), the earlier (Wells) name is the correct name and is the one that should be used.

That is, the name I proposed, should not be used as the first available name because it simply is not!

It is important that nomenclature mistakes are corrected at the first available opportunity, even if as an author, one would prefer not to have their mistakes made public.

Science must sit above personal egos and attempts to present as perfect and mistake free when one does in fact get something wrong.

The error arose following an unlawful police raid on our property at the time the relevant paper was being prepared and in order to complete it, an earlier draft was used (safe from raiding police), which had not used the correct name.

A newer name was coined in error.

The mistake was not picked up in peer review.

Enquires of three reviewers confirmed that all of them had checked for synonyms using the Peter Uetz site, "*The Reptile Database*", in the misguided belief it was a complete dataset of available names and synonyms in herpetology, when it was not.

In this case Uetz had made sure that the Wells (2009) name was not on the database, along with over 1,000 other names and papers he has recently censored (see Hoser 2023a-c for details).

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CONFLICTS OF INTEREST

THERE ARE NONE.

Five new species within *Carlia sensu lato* (Scincidae), from Australia.

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ABSTRACT

An ongoing audit of the Australian herpetofauna has confirmed the existence of some obviously unnamed species within *Carlia* Gray, 1845 *sensu lato* in northern Australia.

Rather than risk these taxa expiring through benign neglect, they are formally identified and named herein. The relevant newly named forms are as follows:

A northern outlier population of putative *Liburnascincus coensis* (Mitchell, 1953), type locality of Coen, Queensland, with a distinctive dorsal patterning is formally named as *L. wellsei* sp. nov..

Putative *L. mundivensis* (Broom, 1898), type locality of Muldiva, North Queensland, is formally split three ways, with the two southern forms formally named as *L. bradcrossmani* sp. nov. and *L. gregwallisi* sp. nov..

Putative *Carlia sexdentata* (Macleay, 1877), type locality of Cape Grenville, North-east Queensland, from the eastern Northern Territory is formally named as *C. sergeimosyakini* sp. nov..

Putative *C. storri* Ingram and Covacevich, 1989, type locality of Bamaga, Queensland, from the wet-tropics area of north Queensland is formally named as *C. caitlinmoranae* sp. nov..

Keywords: Taxonomy; nomenclature; Australia; skink; lizard; *Carlia*; *Liburnascincus*; Queensland; Northern Territory; *storri*; *coensis*; *mundivensis*; *sexdentata*; new species; *wellsei*; *bradcrossmani*; *gregwallisi*; *sergeimosyakini*; *caitlinmoranae*.

INTRODUCTION

An ongoing audit of the Australian herpetofauna has confirmed the existence of some obviously unnamed species within *Carlia* Gray, 1845 *sensu lato* in northern Australia.

Rather than risk these taxa expiring through benign neglect, they are formally identified and named herein.

MATERIALS AND METHODS

Gene sequences with Genbank were checked to see if any sequences attributed to given putative species flagged one or more potential species. That is, were they sufficiently divergent.

These were then cross-checked against known populations of the same species to see if there were morphologically divergent forms that corresponded to potentially unnamed species.

This was done by inspecting specimens of each putative species from the relevant parts of their ranges, including all areas they were known to occur.

These newly identified forms were then checked against various synonyms lists (e.g. Cogger *et al.* 1983, Wells and Wellington 1984 and 1985), as well as against more recently named species within *Carlia* or associated genera to confirm that they were in fact unnamed species.

A number of species identified did already have available names or had been recently named by others and for the purpose of this paper, those ones have been ignored.

There is nothing to be gained by breaching Copyright laws or the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) by renaming species already formally named.

These newly identified species are listed below.

Relevant references to the audit of the genus *Carlia sensu lato* and confirmation of the relevant hitherto unnamed forms were the following: Bragg *et al.* (2018), Broom (1898), Cogger (2014), Cogger *et al.* (1983), Couper *et al.* (2005), Covacevich (1971), De Vis (1884, 1885), Dolman and Hugall (2008), Donnellan *et al.* (2009), Duméril and Bibron (1839), Fitzinger (1843), Gray (1845), Hoser (1989), Hoskin and Couper (2015), Ingram and Covacevich (1989), Macleay (1877), Mitchell (1953), Neave (1939), Storr (1974), Stuart-Fox *et al.* (2002), Wells and Wellington (1984, 1985), Zietz (1920), Zug (2004) and sources cited therein.

RESULTS

The relevant newly named forms in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended (ICZN 2012) are as follows:

A northern outlier population of putative *Liburnascincus coensis* (Mitchell, 1953), type locality of Coen, Queensland, with a distinctive dorsal patterning is formally named as *L. wellsei sp. nov.*

It occurs just 50 km north of the main population of *L. coensis* in the general region of the Iron Range, Queensland, Australia, but is readily separated by consistent dorsal colouration differences. Putative *L. mundivensis* (Broom, 1898), type locality of Muldiva, North Queensland, is formally split three ways.

The type population is that from Cairns, Queensland and nearby areas.

Two morphologically divergent southern forms are formally named as *L. bradcrossmani sp. nov.* and *L. gregwallisi sp. nov.*. They appear to be allopatric in terms of one another.

Putative *Carlia sexdentata* (Macleay, 1877), type locality of Cape Grenville, North-east Queensland, from the eastern Northern Territory is formally named as *C. sergeimosyakini sp. nov.*. Adult males in particular, differ strongly from both *C. sexdentata* as well as the morphologically similar *Carlia longipes* (Macleay, 1877).

Putative *C. storri* Ingram and Covacevich, 1989, type locality of Bamaga, Queensland, from the wet-tropics area of north Queensland is formally named as *C. caitlinmoranae sp. nov.*. The new species lacks the well-defined dorsal and lateral bands seen in adult *C. storri*.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature.

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 20 May 2023, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

Unless otherwise stated explicitly, colour descriptions apply to living adult male specimens of generally good health and not under any form of stress by means such as excessive cool, heat, dehydration or abnormal skin reaction to chemical or other input.

It should be noted that in skinks in particular, juveniles can often appear quite different in colour to mature adults, as can be each sex in adults, including within some of the species described herein.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within each formal description and does not rely on material within publications not explicitly cited herein.

Delays in recognition of these species and subspecies could jeopardise the long-term survival of the taxa as outlined by Hoser (2019a, 2019b) and sources cited therein.

Therefore attempts by taxonomic vandals like the Wolfgang Wüster gang via Kaiser (2012a, 2012b, 2013, 2014a, 2014b) and Kaiser *et al.* (2013) (as frequently amended and embellished, e.g. Rhodin *et al.* 2015, Thiele *et al.* 2020, Hammer and Thiele 2021) to unlawfully suppress the recognition of these taxa on the basis they have a personal dislike for the person who formally named it should be resisted (e.g. Dubois *et al.* 2019 and Ceriaco *et al.* 2023).

Claims by the Wüster gang against this paper and the descriptions herein will no doubt be no different to those the gang have made previously, all of which were discredited long ago as

outlined by Ceriaco *et al.* (2023), Cogger (2014), Cotton (2014), Dubois *et al.* (2019), Hawkeswood (2021), Hoser, (2007, 2009a, 2012a, 2012b, 2013, 2015a-f, 2019a, 2019b), ICZN (1991, 2001, 2012, 2021), Mosyakin (2022), Wellington (2015) and sources cited therein.

Some material within descriptions is repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

LIBURNASCINCUS WELLSEI SP. NOV.

LSIDurn:lsid:zoobank.org:act:A5302813-7EB1-4B73-9E06-54A75FA5C291

Holotype: A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.100087 collected from Pascoe River, North Queensland, Australia, Latitude 12.883 S., Longitude 143.016 E. This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.107042 collected from Pascoe River, North Queensland, Australia, Latitude - 12.933 S., Longitude 143.066 E. 2/ A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J89008 collected from Fall Ck, at the Sir William Thompson Range, north Queensland, Australia, Latitude -13.0275 S., Longitude 143.066111 E.

Diagnosis: *Liburnascincus wellsei sp. nov.* from the Iron Range and environs in far north Queensland, is readily separated from the closely related and morphologically similar species *L. coensis* (Mitchell, 1953) from Coen and nearby areas in far north Queensland (about 50 km straight line south), by the following characters:

- 1/ The light gold-coloured dorsal midline is broken on the back, versus joined and continuous in *L. coensis*.
- 2/ The rows of lighter gold/yellow spots running along the dorso-lateral line are well separated in *L. wellsei sp. nov.*, versus closely separated in *L. coensis*.
- 3/ The yellow/gold line running from the back of the eye along the dorsolateral line to the back of the head and neck is bold and continuous to the back of the head and neck in *L. coensis*, versus not so in *L. wellsei sp. nov.*

Both *L. coensis* and *L. wellsei sp. nov.* are separated from all other species within *Liburnascincus* Wells and Wellington, 1984, by the combination of having rounded ear lobules; dorsal scales that are four sided, each with a smoothly curved posterior edge and scales that are smooth, striated or feebly keeled.

L. coensis and *L. wellsei sp. nov.* are further characterised by having prefrontals usually separate, but sometimes in contact; usually seven supraciliaries; ear opening that is circular and about equal to the palpebral disc in size with about four tubercular lobules anteriorly; 35-45 mid-body rows; 32-36 lamellae under the fourth toe and about 50 mm snout-vent in adult size (modified from Cogger 2014).

Skinks within the genus *Liburnascincus* Wells and Wellington, 1984 are defined herein as follows: A genus of the *Carlia* Gray, 1854 group of skinks, maximum adult SVL ranging from 56 to 68 mm, body robust to dorsoventrally flattened, limbs long and sprawling. Parietal shields contact posterior to a distinct interparietal; dorsal scales either four-sided with a smooth curve to the posterior edge, or 6-sided with each usually with an angular posterior or free edge; being smooth, weakly or strongly keeled; each dorsal with longitudinal rows of low, rounded tubercles; ear opening round or vertically elliptic, about equal in size to palpebral disk; usually 7 supralabials, sexes similar in colour and pattern, males without bright colours, usually 13 premaxillary teeth (derived from Ingram and Covacevich, 1989, Wells and Wellington, 1984 and Cogger 2014).

The species *L. mundivensis* (Broome, 1898) and associated species, were not included in the original genus *Liburnascincus* by Wells and Wellington (1984) but have been more recently treated as part of the genus by most authors, including for

example Cogger (2014), due to the obviously close relationship and form, confirmed by molecular studies such as that of Bragg *et al.* (2018).

L. wellsei sp. nov. in life is depicted in Cogger (2014) on page 633, at bottom and online at:

<https://www.flickr.com/photos/mattsummerville/19103816325>

and
<https://arod.com.au/arod/reptilia/Squamata/Scincidae/Liburnascincus/coensis>

and
<https://www.inaturalist.org/observations/142043483>

Liburnascincus coensis (Mitchell, 1953) is depicted in life in Wilson and Swan (2021) on page 393 middle.

Distribution: *L. wellsei sp. nov.* is only known from the Iron Range, Pascoe, Lockhardt and Wenlock Rivers area of far north Queensland. *L. coensis* (Mitchell, 1953) occurs in the lower McIlwraith Range area of far north Queensland about 50 km straight line south of where *L. wellsei sp. nov.* is found.

Etymology: *L. wellsei sp. nov.* is named in honour of Australian reptile taxonomist and past president of the Australian Herpetological Society, Richard Wells, currently (in 2023 and 2024) of Drake, in northern New South Wales, Australia.

LIBURNASCINCUS BRADCROSSMANI SP. NOV.

LSIDurn:lsid:zoobank.org:act:B8127C3D-0373-47A6-804C-9D4B53490198

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J33935 collected from Oaky Creek Bank, adjoining Site 10, at Homevale, Queensland, Australia, Latitude -21.45 S., Longitude 148.533333 E.

This government-owned facility allows access to its holdings.

Paratypes: 25 preserved specimens at the Queensland Museum, Brisbane, Queensland, Australia, specimen numbers J33864, J33866, J33871, J33872, J33874, J33882, J33887, J33885, J33922, J33923, J33924, J33925, J33926, J33927, J33928, J33929, J33930, J33931, J33932, J33933, J33934, J33936, J33938, J33971 and J80864 all collected from Oaky Creek Bank, adjoining Site 10, at Homevale, Queensland, Australia, Latitude -21.45 S., Longitude 148.533333 E.

Diagnosis: The three species, *L. mundivensis* (Broome, 1898), type locality of Muldiva, North Queensland, from the region generally north of Townsville, Queensland, *L. bradcrossmani sp. nov.* in the region centred around Mackay, north-east Queensland, and *L. gregwallisi sp. nov.* from generally west and south-west of Rockhampton, Queensland are all morphologically very similar.

They are however separated from one another by the following unique suites of characters:

L. mundivensis is characterised by a dorsum that is reddish-brown in colour, which has well-defined dark brown stripes across the dorsum, broken along the mid-line, where they are absent, lower labials that are white, but with dark brownish black at the posterior edge of each and well-defined markings on the upper surfaces of the limbs.

L. bradcrossmani sp. nov. has a greyish-brown dorsum lacking the obvious markings seen on the upper surfaces as seen in *L. mundivensis*. Lower labials are whitish with black barring at the posterior edges. Markings on the upper surfaces of the limbs are poorly defined.

L. gregwallisi sp. nov. has an obvious white line on the anterior upper labials, separating this from the preceding two taxa. *L. gregwallisi sp. nov.* has semi-distinct darker markings on the dorsum and flanks, excluding only the very centre of the midline, but unlike in *L. mundivensis* these markings do not tend to form bands or similar in any way. The lower labials, while whitish, lack any obvious dark markings or barring on the posterior edges, these being reduced and faded to be tiny markings and greyish. All of *L. mundivensis*, *L. bradcrossmani sp. nov.* and *L.*

gregwallisi sp. nov. are separated from the other species in the genus *Liburnascincus* Wells and Wellington (1984), by having dorsal scales that are six-sided, each usually with an angular posterior or free edge and being moderately to strongly keeled, (versus four-sided, each with a normally curved posterior edge, with smooth, striated or weakly keeled dorsals only in the other species).

Skinks within the genus *Liburnascincus* Wells and Wellington, 1984 are defined herein as follows: A genus of the *Carlia* Gray, 1854 group of skinks, maximum adult SVL ranging from 56 to 68 mm, body robust to dorsoventrally flattened, limbs long and sprawling. Parietal shields contact posterior to a distinct interparietal; dorsal scales either four-sided with a smooth curve to the posterior edge, or 6-sided with each usually with an angular posterior or free edge; being smooth, weakly or strongly keeled; each dorsal with longitudinal rows of low, rounded tubercles; ear opening round or vertically elliptic, about equal in size to palpebral disk; usually 7 supralabials, sexes similar in colour and pattern, males without bright colours, usually 13 premaxillary teeth (derived from Ingram and Covacevich, 1989, Wells and Wellington, 1984 and Cogger 2014).

The species *L. mundivensis* (Broome, 1898) and associated species, were not included in the original genus *Liburnascincus* by Wells and Wellington (1984) but have been more recently treated as part of the genus by most authors, including for example Cogger (2014), due to the obviously close relationship and form, confirmed by molecular studies such as that of Bragg *et al.* (2018).

L. mundivensis (Broome, 1898) in life is depicted in Cogger (2014) on page 633, bottom right, Wilson and Swan (2021) on page 393 bottom and online at:

<https://www.inaturalist.org/observations/158040090>

L. bradcrossmani sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/30734570>

L. gregwallisi sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/26266641>

and

<https://www.inaturalist.org/observations/107367211>

Distribution: *L. bradcrossmani sp. nov.* is only known from the Mackay region, Queensland, generally south of the Burdekin River, usually occurring in rocky areas.

Etymology: *L. bradcrossmani sp. nov.* is named in honour of Australian herpetologist and professional snake catcher, Bradley Crossman, originally from Greenwich, New South Wales, but in more recent years a snake catcher at Proserpine, Queensland, in recognition of his services to herpetology over many decades.

LIBURNASCINCUS GREGWALLISI SP. NOV.

LSIDurn:lsid:zoobank.org:act:1FFEA9F3-082B-4C0C-96A9-4BF5BB1E6A24

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J64593 collected from the Buffer Zone at the Stanwell Power Station, Stanwell, 23 kilometres south-west of Rockhampton, Queensland, Australia, Latitude -23.516667 S., Longitude 150.333333 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Queensland Museum, Brisbane, Queensland, Australia, specimen numbers J66645 and J66657 collected from the Buffer Zone at the Stanwell Power Station, Stanwell, 23 kilometres south-west of Rockhampton, Queensland, Australia, Latitude -23.516667 S., Longitude 150.333333 E. 2/ Two preserved specimens at the Australian Museum, Sydney, NSW, Australia, specimen number R.128483 collected from Crocodile Creek, Mt. Usher, Queensland, Australia, Latitude -23.6 S., Longitude 150.466 E., and specimen number R.47190 collected from 19 km south-west of Mount Morgan, Queensland, Australia, Latitude -23.25 S., Longitude 150.416 E.

Diagnosis: The three species, *L. mundivensis* (Broom, 1898), type locality of Muldiva, North Queensland, from the region generally north of Townsville, Queensland, *L. bradcrossmani* sp. nov. in the region centred around Mackay, north-east Queensland, and *L. gregwallisi* sp. nov. from generally west and south-west of Rockhampton, Queensland are all morphologically very similar.

They are however separated from one another by the following unique suites of characters:

L. mundivensis is characterised by a dorsum that is reddish-brown in colour, which has well-defined dark brown stripes across the dorsum, broken along the mid-line, where they are absent, lower labials that are white, but with dark brownish black at the posterior edge of each and well-defined markings on the upper surfaces of the limbs.

L. bradcrossmani sp. nov. has a greyish-brown dorsum lacking the obvious markings seen on the upper surfaces as seen in *L. mundivensis*. Lower labials are whitish with black barring at the posterior edges. Markings on the upper surfaces of the limbs are poorly defined.

L. gregwallisi sp. nov. has an obvious white line on the anterior upper labials, separating this from the preceding two taxa. *L. gregwallisi* sp. nov. has semi-distinct darker markings on the dorsum and flanks, excluding only the very centre of the midline, but unlike in *L. mundivensis* these markings do not tend to form bands or similar in any way. The lower labials, while whitish, lack any obvious dark markings or barring on the posterior edges, these being reduced and faded to be tiny markings and greyish.

All of *L. mundivensis*, *L. bradcrossmani* sp. nov. and *L. gregwallisi* sp. nov. are separated from the other species in the genus *Liburnascincus* Wells and Wellington (1984), by having dorsal scales that are six-sided, each usually with an angular posterior or free edge and being moderately to strongly keeled, (versus four-sided, each with a normally curved posterior edge, with smooth, striated or weakly keeled dorsals only in the other species).

Skinks within the genus *Liburnascincus* Wells and Wellington, 1984 are defined herein as follows: A genus of the *Carlia* Gray, 1854 group of skinks, maximum adult SVL ranging from 56 to 68 mm, body robust to dorsoventrally flattened, limbs long and sprawling. Parietal shields contact posterior to a distinct interparietal; dorsal scales either four-sided with a smooth curve to the posterior edge, or 6-sided with each usually with an angular posterior or free edge; being smooth, weakly or strongly keeled; each dorsal with longitudinal rows of low, rounded tubercles; ear opening round or vertically elliptic, about equal in size to palpebral disk; usually 7 supralabials, sexes similar in colour and pattern, males without bright colours, usually 13 premaxillary teeth (derived from Ingram and Covacevich, 1989, Wells and Wellington, 1984 and Cogger 2014).

The species *L. mundivensis* (Broome, 1898) and associated species, were not included in the original genus *Liburnascincus* by Wells and Wellington (1984) but have been more recently treated as part of the genus by most authors, including for example Cogger (2014), due to the obviously close relationship and form, confirmed by molecular studies such as that of Bragg *et al.* (2018).

L. mundivensis (Broome, 1898) in life is depicted in Cogger (2014) on page 633, bottom right, Wilson and Swan (2021) on page 393 bottom and online at:

<https://www.inaturalist.org/observations/158040090>

L. bradcrossmani sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/30734570>

L. gregwallisi sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/26266641>

and

<https://www.inaturalist.org/observations/107367211>

Distribution: *L. gregwallisi* sp. nov. is only known from the

Rockhampton region, Queensland, Australia, including generally west and south-west of there in wetter and rocky near coastal areas.

Etymology: *L. gregwallisi* sp. nov. is named in honour of Australian herpetologist Greg Wallis formerly of Harbord (Sydney) New South Wales and more recently of Caulfield (Melbourne), Victoria, Australia, in recognition for his services to herpetology over many years.

CARLIA SERGEIMOSYAKINI SP. NOV.

LSIDurn:lsid:zoobank.org:act:03648A90-C87A-4374-AF54-A2B3716CB3A9

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, NT, Australia, specimen number R22742, collected from Pobasso Island, The English Companys Islands, Northern Territory, Australia, Latitude -11.901 S., Longitude 136.452 E.

This government-owned facility allows access to its holdings.

Paratypes: Seven preserved specimens at the Museum and Art Gallery of the Northern Territory, Darwin, NT, Australia, specimen numbers R22745, R22757, R22760, R22761, R22765, R22779, and R22843 all collected from The English Companys Islands, Northern Territory, Australia.

Diagnosis: *C. sergeimosyakini* sp. nov. has until now been treated as a western population of either *Carlia sexdentata* (Macleay, 1877) or the morphologically similar *Carlia longipes* (Macleay, 1877).

C. sergeimosyakini sp. nov. is separated from both species by the unique combination of:

Ear opening, with pointed lobules that are well-developed along the anterior margin, but much reduced or absent on the remaining margins (versus completely surrounded by pointed lobules in *C. longipes*). The lobules are thin with narrow points in *C. sexdentata* versus thicker and slightly blunted at the ends in *C. sergeimosyakini* sp. nov..

Adult male *C. sergeimosyakini* sp. nov. have a yellowish iris, versus orange in *C. sexdentata*. In adult male *C. sergeimosyakini* sp. nov. the dark interstitial skin is prominent on the sides of the head and neck, versus not so in *C. sexdentata*. In breeding male *C. sergeimosyakini* sp. nov. the flanks are typically orange-yellow in colour, rather than the deep orange to red seen in *C. sexdentata*.

The three species *C. sergeimosyakini* sp. nov., *C. sexdentata* and *C. longipes* are separated from all other species within the genus *Carlia* Gray, 1845 by the following suite of characters:

A distinct interparietal; dorsal scales four-sided, each with a smoothly curved posterior edge, and being smooth, striated or feebly keeled; no rows of raised tubercles on the dorsal scales; ear opening roundish, or slightly vertically elliptical and with at least two pointed ear lobules, at least on the anterior edge; there is no pale mid-lateral stripe split or displaced by the ear opening; no black throat or black upper lateral stripe from eye to forelimb in males; males or females do not have a pale dorsolateral stripe or discontinuous pale mid-lateral stripe (modified from Cogger 2014).

C. sergeimosyakini sp. nov. in life is depicted online at:

<https://www.inaturalist.org/observations/108281767>

C. sexdentata in life is depicted online at:

<https://www.inaturalist.org/observations/135885587>

C. longipes in life is depicted in Wilson and Swan (2021) on page 227 at bottom.

Distribution: *C. sergeimosyakini* sp. nov. is restricted to the top end of the north-east Northern Territory. *C. sexdentata* and *C. longipes* are confined to Cape York, Queensland, Torres Strait and nearby southern New Guinea.

Etymology: *C. sergeimosyakini* sp. nov. is named in honour of Sergei L. Mosyakin, born 30 November 1963, who is a prominent Ukrainian Botanist, who took a strong stand in 2022

against taxonomic vandalism in botany by Kevin Thiele, Peter Uetz, Hinrich Kaiser, Mark O'Shea and Wolfgang Wüster (see Mosyak 2022).

CARLIA CAITLINMORANAE SP. NOV.

LSIDDurn:lsid:zoobank.org:act:8A5F0382-8776-4629-9A49-702DFD7FB5B3

Holotype: A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.81111 collected from 10.0 km west of the Bruce Highway via the road to Paluma, Queensland, Australia, Latitude -19.0 S., Longitude 146.233 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Australian Museum, Sydney, New South Wales, Australia, specimen numbers R.81112 and R.81114 collected from 10.0 km west of the Bruce Highway via the road to Paluma, Queensland, Australia, Latitude -19.0 S., Longitude 146.233 E.

2/ Two preserved specimens at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J26632 collected from 1 km west of Moongobulla, 65.3 km, north-west of Townsville, Queensland, Australia, Latitude -18.983333 S., Longitude 146.316667 E. and specimen number J26558 collected from 66.3 km north-west of Townsville, on the Bruce Highway, Queensland, Australia, Latitude -18.983333 S., Longitude 146.3 E.

Diagnosis: *C. caitlinmoranae* sp. nov. from the wet tropics region of far north Queensland, is morphologically similar in form and closely related to *C. storri* Ingram and Covacevich, 1989, type locality of Bamaga, Queensland and herein confined to the region generally north of Cooktown, Queensland, including Torres Strait and southern New Guinea.

C. caitlinmoranae sp. nov. is readily separated from *C. storri* by the absence of a distinctive white line running across the upper labials. Adult *C. storri* also have scattered yellow, beige or white flecks on the upper body, which are not seen in *C. caitlinmoranae* sp. nov.. Black flecks on the dorsum of *C. storri* commonly tend to form indistinct longitudinal lines, but this is not the case in *C. caitlinmoranae* sp. nov..

Iris of *C. caitlinmoranae* sp. nov. is light orange, versus brown or brown with orange tinge in *C. storri*.

Both *C. storri* and *C. caitlinmoranae* sp. nov. are separated from other species in the genus *Carlia* Gray, 1845 by the following suite of characters: Interparietal is distinct; dorsal scales are mostly bicarinate, 6 sided, each usually with an angular posterior or free edge and moderately to strongly keeled; ear opening is surrounded by acute unequal pointed scales; usually less than 34 midbody scale rows (modified from Cogger 2014).

C. caitlinmoranae sp. nov. in life is depicted online at: <https://www.inaturalist.org/observations/142718638>

and

<https://www.inaturalist.org/observations/57182840>

C. storri in life is depicted online at:

<https://www.inaturalist.org/observations/126190775>

and

<https://www.inaturalist.org/observations/142343784>

Distribution: *C. caitlinmoranae* sp. nov. is found in the wet-tropics region of far north Queensland from Townsville in the south to about Cooktown in the north and including the near coastal ranges. *C. storri* is found to the north of this area and including the northern tip of Cape York, Queensland, Torres Strait and nearby parts of southern New Guinea.

Etymology: *C. caitlinmoranae* sp. nov. is named in honour of Caitlin Moran. In 2022, she was a celebrated indigenous Australian National Rugby League Women's (NRLW) star who was lampooned publicly for simply saying things as she saw them.

On the day Australia's absentee Queen, Queen Elizabeth 2

of "Great Britain" died, in September 2022, Moran posted on Instagram "*Today's a good fucking day, uncle Luke (country singer Luke Coombs) announces his tour, and this dumb dog (Queen Elizabeth) dies. Happy fucking Friday*".

Noting that the majority of Australian Aborigine's were effectively exterminated by the British Crown, and those who survived were generally bashed and incarcerated, it should not surprise anyone that the indigenous Australians have little time for the dysfunctional British Royal Family of paedophiles and animal abusers and all the thieving and brutality them and their corrupt legal system represents.

However as Australia is a fascist state, Moran was vilified in the (largely tax exempt) Rupert Murdoch controlled and State controlled media.

As a result Moran was banned from playing sport and fined! (See detail at: <https://www.newcastleknights.com.au/news/2022/09/13/club-statement-caitlin-moran/>).

Rather than honouring the now deceased Queen, who's name appears on countless places and things in Australia, or give any further recognition to her dysfunctional family of adulterers and paedophiles, I have decided to honour this species after a descendant of victims of the British Crown instead.

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CONFLICT OF INTEREST
None.

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Twelve new species and four new subspecies within the Australian skink genus *Menetia* Gray, 1845, *sensu-lato*.

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ABSTRACT

An ongoing audit of the Australian herpetofauna has confirmed the existence of some obviously unnamed forms within the putative genus *Menetia* Gray, 1845, *sensu-lato*.

Rather than risk these taxa expiring through benign neglect, they are formally identified and named herein. The relevant taxonomic and nomenclatural actions are as follows:

The genus *Menetia* (*sensu* Wilson and Swan, 2021) is divided into three divergent subgenera.

One includes the species *Menetia maini* Storr, 1976, *Menetia surda* Storr, 1976 and newly named forms that have until now been treated as within one of these species. This action is supported by an estimated divergence between the relevant two groups of species being more than 10 MYA.

Three new subspecies of *M. surda* are formally named for the first time.

M. maini Storr, 1976 is split into six species, with four formally named for the first time.

The other newly named subgenus includes *M. alanae* Rankin, 1979 and *M. concinna* Sadlier, 1984.

Menetia greyii Gray, 1845 is divided into multiple species. Three, including the nominate form from Western Australia already have available names and the other new forms are formally named for the first time.

Adams *et al.* (2003) recorded that some of the relevant forms “are distinct biological and evolutionary species” and yet more than 20 years later they have remained unnamed.

A divergent population of *Pygmaescincus timlowi* (Ingram, 1977) from the NSW / Qld border area is formally named as a new subspecies *Pygmaescincus timlowi geynyon* *subsp. nov.*

This species was transferred out of *Menetia* to the newly erected *Pygmaescincus* Couper and Hoskin, 2015 as a type species for the new genus on the basis of significant divergence from the type species within *Menetia*.

Some of the preceding named divergent forms have been conservatively named herein as subspecies in the absence of molecular confirmation of timeline of divergence.

While in no way repairing the ongoing multi-generational damages perpetrated by British invaders on the original Aboriginal inhabitants of Australia caused by the heinous crimes of the past, this paper continues previous actions by myself in that a number of etymologies for newly named taxa honour the original Aboriginal inhabitants of Australia.

Keywords: Taxonomy; nomenclature; Australia; skink; lizard; *Menetia*; *Pygmaescincus*; *timlowi*; *greyii*; *maini*; *surda*; *microscincus*; *reidi*; *zynja*; new subgenus; *Pertenuisscincus*; *Ignobilisscincus*; new species; *admodumparva*; *perexiguus*; *perpusillus*; *pertenuis*; *tanyadayae*; *kullilli*; *bibbulmun*; *dhaae*; *dungayi*; *langdoni*; *anindilyakwa*; *yidinji*; new subspecies; *perparvus*; *praemitis*; *facileoccultatur*; *geynyon*.

INTRODUCTION

An ongoing audit of the Australian herpetofauna has confirmed the existence of some obviously unnamed species within the putative genus *Menetia* Gray, 1845, *sensu-lato*.

Rather than risk these taxa expiring through benign neglect, it was decided that it was expedient to have them formally

identified and named. This has been done as required within this paper in accordance with the rules of the International Code of Zoological Nomenclature (Ride *et al.* 1999).

MATERIALS AND METHODS

Gene sequences with Genbank were checked to see if any sequences attributed to given putative species flagged one or

more potential species. That is, were they sufficiently divergent? These were then cross-checked against known populations of the same species to see if there were morphologically divergent forms that corresponded to potentially unnamed species.

This was done by inspecting specimens of each putative species from the relevant parts of their ranges, including all areas they were known to occur.

These newly identified forms were then checked against various synonyms lists (e.g. Cogger *et al.* 1983, Wells and Wellington 1984 and 1985), as well as against more recently named species within *Menetia* or the associated genus *Pygmaescincus* Couper and Hoskin, 2015, to confirm that they were in fact unnamed species or subspecies.

A number of species identified did already have available names or had been recently named by others and for the purpose of this paper, those ones have been ignored, unless relevant to those that are named herein.

There is nothing to be gained by breaching Copyright laws, such as the *Australian Copyright Act* (1968) or the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) by renaming species already formally named.

Relevant references to the audit of the genus *Menetia sensu lato*, confirmation of the relevant hitherto unnamed forms and the taxonomic and nomenclatural decisions within this paper were the following:

Adams *et al.* (2003), Aplin and Adams (1998), Aplin and Smith (2001), Bush (1981), Cogger (2014), Cogger *et al.* (1983), Couper and Hoskin (2014), Covacevich *et al.* (1988), Duméril and Bibron (1839), Ford (1963), Gray (1845), Greer (1974, 1991, 2001), Horner (1992), Hoser (2018), How *et al.* (2020), Ingram (1977), Ingram and Covacevich (1988), Maryan *et al.* (2002), McCooey (1895), Peterson *et al.* (2018), Pianka (1969, 2011), Rankin (1979), Ride *et al.* (1995), Sadlier (1984), Smyth and Smith (1974), Storr (1976, 1978), Storr, Smith and Johnstone (1981), Swan *et al.* (2022), Wells and Wellington (1984, 1985), Wilson (2022), Wilson and Knowles (1988), Wilson and Swan (2021), and sources cited therein.

RESULTS

The relevant newly named forms in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended (ICZN 2012) are as follows:

The genus *Menetia* (*sensu* Wilson and Swan, 2021) is divided into three divergent subgenera.

One includes the species *Menetia maini* Storr, 1976, *Menetia surda* Storr, 1976 and newly named forms that have until now been treated as within one of these species.

This action is supported by an estimated divergence between the two groups of species being more than 10 MYA (Chapple *et al.* 2013).

Three new allopatric subspecies of *M. surda* are formally named for the first time.

They were originally identified by Storr in 1976, again by Aplin and Adams (1998) and quite surprisingly remain unnamed to the date of preparing this paper in 2023.

M. maini Storr, 1976 is split into six species, with four formally named for the first time.

The six regionally allopatric forms are morphologically divergent from one another.

Furthermore, they are rock-dwelling or rock associated taxa, separated from one another by known biogeographic barriers of known antiquity, giving rise to the concept that all are well separated from one another and evolving as separate species.

The intervening areas between populations are either of unsuitable habitat or not inhabited habitat and/or occupied by one or more species that preclude the newly divided putative taxon or taxa from occupying the relevant areas.

The other newly named subgenus includes *M. alanae* Rankin, 1979 and *M. concinna* Sadlier, 1984.

Menetia greyii Gray, 1845 is divided into species. Three,

including the nominate form from Western Australia already have available names and the other new forms are formally named for the first time.

Regional variation in this wide-ranging putative taxon has been known for many years and phylogenetic studies have also identified a number of different lineages within the "species".

Taxonomic recognition of these entities is inevitable and so has been done herein.

Adams *et al.* (2003) recorded that some of the relevant forms "are distinct biological and evolutionary species" and yet 20 years later they have remained unnamed.

The following important points in relation to *M. greyii* are noted.

The type locality is given as "Western Australia" and that is a very big place.

As a result it has been problematic for anyone to name new forms in the complex due to uncertainty as to the provenance of the type material.

Storr designated a lectotype in 1976 and inspection of this material has confirmed it matches specimens from the general region of Mount Magnet / Yalgoo in appearance and morphology, which in turn is the main form of the species throughout most of the southern two thirds of Western Australia.

Another form from near Dubbo in western New South Wales was named by McCooey in 1895 as *Menetia reidi*, thereby making that name available for the eastern Australian population.

That form in turn occurs throughout the Murray/Darling basin and proximal parts of southern Queensland.

With two forms in the complex having been named and these at the eastern and western extremities of the distribution, the small diminutive size of the lizards and other "more interesting" things to look at, it is not surprising that the *M. greyii* complex has been largely neglected by Australian herpetologists for most of the last 100 years.

Wells and Wellington (1985) followed on from relevant comments by Storr (1976) and named the divergent form from the cooler parts of South Australia as *M. microscincus*.

That this taxon requires some form of taxonomic recognition was confirmed by Adams *et al.* (2003), in their molecular results.

However these authors, in particular co-authors Mark Hutchinson and Steven Donnellan are sworn enemies of Richard Wells and Ross Wellington and would rather walk on hot coals than recognize any works of Wells and Wellington.

As a result, neither name, *M. reidi* or *M. microscincus* have appeared in the herpetological literature as valid species since being formally introduced by their relevant authors.

However, both forms are clearly valid species, as are others in the complex and so these and the newly named ones herein are recognized as valid.

The phylogeny of Adams *et al.* (2003) indicated that at least four forms in South Australia appeared to represent valid and distinct species.

One of these carried into New South Wales and western Victoria and has been tentatively assigned to *M. reidi*. Only one of the others appears to have a distribution range approaching Western Australia, but this conforms to the Centralian form from the central Australian deserts and ranges, including deserts to the north, identified by having 20 midbody rows, a brown body with scattered dark spots on the back and a greyish tail, which is quite divergent from the type form from inland western Western Australia. (22 midbody rows and different colouration) and so cannot be assigned to any named species. The same applies for a third form from the mid north of and far north-east of South Australia and nearby south-west Queensland, similar to the Centralian form and largely corresponding to the Lake Eyre basin, but with three times as many dark spots on the dorsum, these forming rows, as well as a thinner dark stripe on the neck and flank, being medium in thickness rather than wide.

Both these taxa are formally named for the first time as new species.

Other divergent forms formally named for the first time as new diagnosable species within the *M. greyii* complex are the following:

3/ A relatively dark form from Perth and environs, West Australia, with 22-24 midbody rows.

4/ A white spotted or cream spotted form from Shark Bay, Western Australia, with 22 midbody rows.

5/ A reddish form from the east Pilbara, Western Australia with 22 midbody rows.

6/ A form with 22 midbody rows, a very light dorsum, thick black stripe on the flank and scattered large spots on the back from Kakadu and nearby parts of the Northern Territory,

7/ A form similar to the preceding Kakadu-type form, but with 20 mid-body rows, a thinner black stripe on the flank, less distinct than seen in the Kakadu-type form and endemic to Groote Eylandt, Northern Territory,

8/ A form with a thin white line on the far lower flank from far north-east Queensland, west of the Great Dividing Range also with 22 midbody rows.

A divergent population of *Pygmaescincus timlowi* (Ingram, 1977) from the NSW / Qld border area is formally named as a new subspecies.

This species was transferred out of *Menetia* to the newly erected *Pygmaescincus* Couper and Hoskin, 2015 as a type species for the new genus on the basis of significant divergence from the type species within *Menetia*.

Some of the preceding named divergent forms have been conservatively named herein as subspecies in the absence of molecular confirmation of depth of divergence. Further studies may warrant elevation to full species.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature.

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 28 August 2023, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

Unless otherwise stated explicitly, colour descriptions apply to living adult male specimens of generally good health and not under any form of stress by means such as excessive cool, heat, dehydration or abnormal skin reaction to chemical or other input. It should be noted that in skinks in particular, juveniles can often appear quite different in colour to mature adults, as can be each sex in adults, including within some of the species described herein.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within each formal description and does not rely on material within publications not explicitly cited herein.

Delays in recognition of these species and subspecies could jeopardise the long-term survival of the taxa as outlined by Hoser (2019a, 2019b) and sources cited therein.

Displacement of small skink species by one or more others is ongoing in Australia and has evidently accelerated since European invasion in the 1700's. A few so-called "weedy species" have expanded in number and distributions, usually at the corresponding expense of more specialized forms.

The conservation implications of this phenomenon is effectively

unrecognized in Australian herpetology, even though alluded to as far back as 1991 by Hoser (1991).

Therefore attempts by taxonomic vandals like the Wolfgang Wüster gang via Kaiser (2012a, 2012b, 2013, 2014a, 2014b) and Kaiser *et al.* (2013) (as frequently amended and embellished, e.g. Rhodin *et al.* 2015, Thiele *et al.* 2020, Hammer and Thiele 2021) to unlawfully suppress the recognition of these taxa on the basis they have a personal dislike for the person who formally named it should be resisted (e.g. Dubois *et al.* 2019 and Ceriaco *et al.* 2023).

Claims by the Wüster gang against this paper and the descriptions herein will no doubt be no different to those the gang have made previously, all of which were discredited long ago as outlined by Ceriaco *et al.* (2023), Cogger (2014), Cotton (2014), Dubois *et al.* (2019), Hawkeswood (2021), Hoser, (2007, 2009a, 2012a-b, 2013, 2015a-f, 2019a-b), ICZN (1991, 2001, 2012, 2021), Mosyakin (2022), Wellington (2015) and sources cited therein.

Some material within descriptions is repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

In terms of the conservation of the relevant taxa formally dealt with in this paper, as well as extinction threats, none are believed to be under immediate threat of extinction or even decline. However most have not been studied in any meaningful way, so should be deemed "insufficiently known" to make any realistic conservation assessment at the present time.

Therefore the relevant comments of Hoser (1989, 1991, 1993, 1996, 2007, 2019a, 2019b) all apply.

PERTENUISSCINCUS SUBGEN. NOV.

LSIDurn:lsid:zoobank.org:act:0C9AB302-DA0F-41C0-A460-2B4E1A8F6ECE

Type species: *Menetia surda* Storr, 1976.

Diagnosis: Until now, the seven species (four formally named in this paper) within the subgenus *Pertenuisscincus subgen. nov.* have been treated as ordinary members of the genus *Menetia* Gray, 1845, type species *Menetia greyii* Gray, 1845 by all publishing Australian herpetologists.

However the species within the subgenus *Pertenuisscincus subgen. nov.* are a morphologically divergent species group, sympatric to the other species and warrant subgenus-level recognition at least.

Chapple *et al.* (2023) also found a divergence between the two groups of over 10 MYA (see Fig. 2. on page 186), supporting the preceding contention.

Species within *Pertenuisscincus subgen. nov.* are separated from those within the nominate subgenus *Menetia* Gray, 1845 and the subgenus *Ignobilisscincus subgen. nov.* as diagnosed in this paper, by the fact that the second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species.

In the subgenus *Menetia* Gray, 1845, the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

The two species within the other subgenus *Ignobilisscincus subgen. nov.* are separated from other species within *Menetia*, including within the subgenus *Pertenuisscincus subgen. nov.* by the following unique combination of characters: the presence of two presuboculars; the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact;

lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

The placement of the species associated with *M. maini* Storr, 1976 into this new subgenus is tentative.

Distribution: Broadly including the drier parts of tropical Australia, excluding eastern Queensland and including the Pilbara region.

Etymology: The subgenus name "*Pertenuisscincus*" comes from the Latin word "*pertenuis*" which means "very thin" in reference to the tiny and diminutive form of the species in the subgenus, which is then used as a prefix to the word "*scincus*" which obviously describes the lizard as a skink.

Content: *M. (Pertenuisscincus) surda* Storr, 1976 (including subspecies) (type species); *M. (Pertenuisscincus) admodumparva* sp. nov.; *M. (Pertenuisscincus) maini* Storr, 1976; *M. (Pertenuisscincus) perexiguus* sp. nov.; *M. (Pertenuisscincus) perpusillus* sp. nov.; *Menetia (Pertenuisscincus) pertenuis* sp. nov.; *M. (Pertenuisscincus) zynja* Ingram, 1977.

IGNOBILISSCINCUS SUBGEN. NOV.

LSIDurn:lsid:zoobank.org:act:57DC1061-DC18-427F-8899-5B336D6D1761

Type species: *Menetia alanae* Rankin, 1979.

Diagnosis: Until now *Menetia alanae* Rankin, 1979 and *M. concinna* Sadlier, 1984 have been treated as divergent members of the genus *Menetia* Gray, 1845, with a type species of *M. greyii* Gray, 1845, *sensu* Wilson and Swan (2021).

However they clearly form a divergent lineage to the core group in the genus and so are formally placed within the newly named subgenus *Ignobilisscincus subgen. nov.*

The two species within *Ignobilisscincus subgen. nov.* are separated from other species within *Menetia*, including within the subgenus *Pertenuisscincus subgen. nov.* by the following unique combination of characters: the presence of two presuboculars; the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

Species within *Pertenuisscincus subgen. nov.* are separated from those within the nominate subgenus *Menetia* Gray, 1845 and the subgenus *Ignobilisscincus subgen. nov.* as diagnosed in this paper, by the fact that the second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. In the subgenus *Menetia* Gray, 1845, the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: Only known from hillier parts of the top end of the Northern Territory, Australia.

Etymology: The first part of the subgenus name "*Ignobilis*" in Latin refers to the small and insignificant nature of this lizard, with the second part "*scincus*" referring to the type of lizard, being a skink.

Content: *Menetia (Ignobilisscincus) alanae* Rankin, 1979 (type species); *M. concinna (Ignobilisscincus)* Sadlier, 1984.

MENETIA (PERTENUISSCINCUS) SURDA PERPARVUS SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:6D42D325-C89F-4A47-871F-337F1DDCC8A4

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R61491 collected at the mouth of Yardie Creek, Western Australia, Australia, Latitude -22.333333 S., Longitude 113.8 E. This government-owned facility allows access to its holdings.

Paratypes: Eight preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R61455-61462 collected at the mouth of Yardie Creek, Western Australia, Australia, Latitude -22.333333 S., Longitude 113.8 E.

Diagnosis: The west Australian taxon *Menetia surda* Storr, 1976, with a type locality of "*Budjan Creek, Corunna Downs, Western Australia, in -21.42'S, 119.50'E.*" was formally split into two subspecies by Aplin and Adams (1998), with the southernmost population, found generally in the Shark Bay region of Western Australia formally identified as *M. surda cresswelli* Aplin and Adams (1998). That taxon had a type locality of "*19 km N Yuna, WA, in -28.10'S, 115.03'E.*" However their paper indicated three other allopatric subspecies, that have until now been unnamed. These are formally named herein as:

M. surda perparvus subsp. nov. from the Cape Range area of Western Australia;

M. surda praemitis subsp. nov. from Mardathuna/Kennedy Range, Western Australia;

M. surda facileoccultatur subsp. nov. from the Pilbara region of Western Australia, generally south of the Fortescue River basin. The five subspecies are separated from one another as follows: Nominate *M. surda* is, as was broadly defined by Storr (1976), separated from the other four subspecies by the following suite of characters:

A dark *Menetia* Gray, 1845 with only one supraciliary. Further distinguishable from *M. greyii* by 5 (rather than 4) small scales in outer arc between largest supraciliary and penultimate labial, lack of obvious ear aperture, and absence of lateral stripes, and from *M. greyii* by single presubocular (rather than 2), longer first supraocular, and no enlarged upper circumocular granule. This form has a well-defined dark brown stripe on the dorsolateral line on the upper flank, running from eye to hind limb, and then less distinct on the tail, bound below with white anteriorly and grey posteriorly, versus not so or barely distinct in *M. surda cresswelli*. The thin black lines on the tail are distinct, versus not so in *M. surda cresswelli*.

(Storr's original 1976 description had errors of transcription in names that were not corrected in the final publication).

M. surda cresswelli besides being separated from *M. surda* by colour as just outlined, is also separated from *M. surda* by having a slightly smaller eye; in having fewer scales along paravertebral series; paravertebral scale series wider than more lateral scales along entire length of body (posterior paravertebrals not widened in nominate *M. surda*); claws on manus and pes shorter and recurved (essentially modified from Aplin and Adams (1998).

M. surda perparvus subsp. nov. is in many ways intermediate in form to the two preceding subspecies and separated from both as follows:

It is relatively small, with low paravertebral counts and relatively short claws in line with *M. surda cresswelli*, however it's dorsal body pattern as more consistent with that of *M. surda surda* as described above, except that the dorsolateral line is divided in the midbody region and the dorsal colouration includes a distinct darkening along the vertebral line of moderate thickness, forming a semi-distinct line.

The posterior paravertebral scales are not widened as seen in *M. surda surda* but they are broader than the second row scales as seen in *M. surda cresswelli*.

M. surda perparvus subsp. nov. has an unusually high incidence of moderate to broad contact between the prefrontal scales (38%), accentuating the trend for medial contact observed in *M.*

surda cresswelli.

M. surda praemitis subsp. nov. is similar in most respects to *M. surda perparvus* subsp. nov. but is separated from that subspecies by the dark brown, rather than light brownish-grey dorsum, and further by the fact that the dorsolateral line becomes less distinct towards the rear end of the body. Furthermore the lower edge of this line on the body is not well-defined.

M. surda facileoccultatur subsp. nov. is similar in most respects to the type form of *M. surda surda*, but is separated from that form by being slightly smaller in adult size and with higher paravertebral counts.

Type *M. surda surda* have well-defined partially divided (by narrow separation) dorsolateral lines on the midbody, whereas this is usually not present in *M. surda facileoccultatur* subsp. nov. or otherwise not well-defined or separated in the mid-section. All subspecies of *M. surda* are separated from the closely related *M. maini* Storr, 1976 by the absence of an external ear opening and the fact that the first supraocular is about twice as long as wide, versus a tiny ear opening present and the first supraocular is at least 2.5 times as long as wide.

Until now, the seven species (four formally named in this paper) within the subgenus *Pertenuisscincus* subgen. nov. have been treated as ordinary members of the genus *Menetia* Gray, 1845, type species *Menetia greyii* Gray, 1845 by all publishing Australian herpetologists.

However the species within the subgenus *Pertenuisscincus* subgen. nov. are a morphologically divergent species group, sympatric to the other species and warrant subgenus-level recognition at least.

Chapple *et al.* (2023) also found a divergence between the two groups of over 10 MYA (see Fig. 2. on page 186), supporting the preceding contention.

Species within *Pertenuisscincus* subgen. nov. are separated from those within the nominate subgenus *Menetia* Gray, 1845 and the subgenus *Ignobilisscincus* subgen. nov. as diagnosed in this paper, by the fact that the second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species.

In the subgenus *Menetia* Gray, 1845, the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

The two species within the other subgenus *Ignobilisscincus* subgen. nov. are separated from other species within *Menetia*, including within the subgenus *Pertenuisscincus* subgen. nov. by the following unique combination of characters: the presence of two presuboculars; the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

M. surda facileoccultatur subsp. nov. is depicted in life in Wilson and Swan (2021) on page 411 middle right.

M. surda cresswelli is depicted in life in Wilson and Swan (2021) on page 411, middle left and Cogger (2014) on page 657 at bottom.

M. surda perparvus subsp. nov. is depicted in life in Storr, Smith and Johnstone (1981) on plate 17, third picture from bottom on the right.

Distribution: *M. surda perparvus* subsp. nov. is endemic to the

Cape Range area of Western Australia. It is a range-restricted endemic.

Etymology: The Latin word "*perparvus*" means "very small" which is in line with this skink species.

MENETIA (PERTENUISSCINCUS) SURDA PRAEMITIS SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:751CE032-EAA0-470A-8D44-0D88FB4E0B0A

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R120724 collected from 11.8 km west of the Mardathuna homestead, Western Australia, Australia, Latitude -24.2426 S., Longitude 114.2824 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R120680 collected from 7.7. km west of the Mardathuna homestead, Western Australia, Australia, Latitude -24.2544 S., Longitude 114.2960 E., and 41 km from the Binthalya homestead, in the Kennedy Range district, Western Australia, Australia, Latitude -24.2936 S., Longitude 151.0151 E.

Diagnosis: The west Australian taxon *Menetia surda* Storr, 1976, with a type locality of "*Budjan Creek, Corunna Downs, Western Australia, in 210 42'S, 1190 50'E.*" was formally split into two subspecies by Aplin and Adams (1998), with the southernmost population, found generally in the Shark Bay region of Western Australia formally identified as *M. surda cresswelli* Aplin and Adams (1998).

That taxon had a type locality of "*19 km N Yuna, WA, in -28.10' S, 115.03' E.*"

However their paper indicated three other allopatric subspecies, that have until now been unnamed.

These are formally named herein as:

M. surda perparvus subsp. nov. from the Cape Range area of Western Australia;

M. surda praemitis subsp. nov. from Mardathuna/Kennedy Range, Western Australia;

M. surda facileoccultatur subsp. nov. from the Pilbara region of Western Australia, generally south of the Fortescue River basin.

The five subspecies are separated from one another as follows: Nominate *M. surda* is, as was broadly defined by Storr (1976), separated from the other four subspecies by the following suite of characters:

A dark *Menetia* Gray, 1845 with only one supraciliary. Further distinguishable from *M. greyii* by 5 (rather than 4) small scales in outer arc between largest supraciliary and penultimate labial, lack of obvious ear aperture, and absence of lateral stripes, and from *M. greyii* by single presubocular (rather than 2), longer first supraocular, and no enlarged upper circumocular granule. This form has a well-defined dark brown stripe on the dorsolateral line on the upper flank, running from eye to hind limb, and then less distinct on the tail, bound below with white anteriorly and grey posteriorly, versus not so or barely distinct in *M. surda cresswelli*. The thin black lines on the tail are distinct, versus not so in *M. surda cresswelli*.

M. surda cresswelli besides being separated from *M. surda* by colour as just outlined, is also separated from *M. surda* by having a slightly smaller eye; in having fewer scales along paravertebral series; paravertebral scale series wider than more lateral scales along entire length of body (posterior paravertebrals not widened in nominate *M. surda*); claws on manus and pes shorter and recurved (essentially modified from Aplin and Adams (1998).

M. surda perparvus subsp. nov. is in many ways intermediate in form to the two preceding subspecies and separated from both as follows:

It is relatively small, with low paravertebral counts and relatively short claws in line with *M. surda cresswelli*, however it's dorsal body pattern as more consistent with that of *M. surda surda* as described above, except that the dorsolateral line is divided in

the midbody region and the dorsal colouration includes a distinct darkening along the vertebral line of moderate thickness, forming a semi-distinct line.

The posterior paravertebral scales are not widened as seen in *M. surda surda* but they are broader than the second row scales as seen in *M. surda cresswelli*.

M. surda perparvus subsp. nov. has an unusually high incidence of moderate to broad contact between the prefrontal scales (38%), accentuating the trend for medial contact observed in *M. surda cresswelli*.

M. surda praemitis subsp. nov. is similar in most respects to *M. surda perparvus subsp. nov.* but is separated from that subspecies by the dark brown, rather than light brownish-grey dorsum, and further by the fact that the dorsolateral line becomes less distinct towards the rear end of the body. Furthermore the lower edge of this line on the body is not well-defined.

M. surda facileoccultatur subsp. nov. is similar in most respects to the type form of *M. surda surda*, but is separated from that form by being slightly smaller in adult size and with higher paravertebral counts.

Type *M. surda surda* have well-defined partially divided (by narrow separation) dorsolateral lines on the midbody, whereas this is usually not present in *M. surda facileoccultatur subsp. nov.* or otherwise not well-defined or separated in the mid-section. All subspecies of *M. surda* are separated from the closely related *M. maini* Storr, 1976 by the absence of an external ear opening and the fact that the first supraocular is about twice as long as wide, versus a tiny ear opening present and the first supraocular is at least 2.5 times as long as wide.

Until now, the seven species (four formally named in this paper) within the subgenus *Pertenuisscincus subgen. nov.* have been treated as ordinary members of the genus *Menetia* Gray, 1845, type species *Menetia greyii* Gray, 1845 by all publishing Australian herpetologists.

However the species within the subgenus *Pertenuisscincus subgen. nov.* are a morphologically divergent species group, sympatric to the other species and warrant subgenus-level recognition at least.

Chapple *et al.* (2023) also found a divergence between the two groups of over 10 MYA (see Fig. 2. on page 186), supporting the preceding contention.

Species within *Pertenuisscincus subgen. nov.* are separated from those within the nominate subgenus *Menetia* Gray, 1845 and the subgenus *Ignobilisscincus subgen. nov.* as diagnosed in this paper, by the fact that the second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species.

In the subgenus *Menetia* Gray, 1845, the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

The two species within the other subgenus *Ignobilisscincus subgen. nov.* are separated from other species within *Menetia*, including within the subgenus *Pertenuisscincus subgen. nov.* by the following unique combination of characters: the presence of two presuboculars; the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

M. surda facileoccultatur subsp. nov. is depicted in life in Wilson and Swan (2021) on page 411 middle right.

M. surda cresswelli is depicted in life in Wilson and Swan (2021) on page 411, middle left and Cogger (2014) on page 657 at bottom.

M. surda perparvus subsp. nov. is depicted in life in Storr, Smith and Johnstone (1981) on plate 17, third picture from bottom on the right.

Distribution: *M. surda praemitis subsp. nov.* is endemic to the Mardathuna/Kennedy Range area, area of Western Australia. It is a range-restricted endemic.

Etymology: The Latin word “*praemitis*” means “tiny” which is in line with this skink species.

MENETIA (PERTENUISSCINCUS) SURDA FACILEOCCULTATUR SUBSP. NOV.

LSIDDurn:lsid:zoobank.org:act:B5B0D56A-89A1-4510-A91C-E5EEB5D46E1A

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R119917 collected from 3.5 km northeast of Mount Brockman, Western Australia, Australia, Latitude -22.466667 S., Longitude 117.3 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R119911 collected from 3.5 km northeast of Mount Brockman, Western Australia, Australia, Latitude -22.466667 S., Longitude 117.3 E.

Diagnosis: The west Australian taxon *Menetia surda* Storr, 1976, with a type locality of “*Budjan Creek, Corunna Downs, Western Australia, in -21.42' S, 119.50' E.*” was formally split into two subspecies by Aplin and Adams (1998), with the southernmost population, found generally in the Shark Bay region of Western Australia formally identified as *M. surda cresswelli* Aplin and Adams (1998).

That taxon had a type locality of “*19 km N Yuna, WA, in -28.10' S, 115.03' E.*”

However their paper indicated three other allopatric subspecies, that have until now been unnamed.

These are formally named herein as:

M. surda perparvus subsp. nov. from the Cape Range area of Western Australia;

M. surda praemitis subsp. nov. from Mardathuna/Kennedy Range, Western Australia;

M. surda facileoccultatur subsp. nov. from the Pilbara region of Western Australia, generally south of the Fortescue River basin.

The five subspecies are separated from one another as follows: Nominate *M. surda* is, as was broadly defined by Storr (1976), separated from the other four subspecies by the following suite of characters:

A dark *Menetia* with only one supraciliary. Further distinguishable from *M. greyii* by 5 (rather than 4) small scales in outer arc between largest supraciliary and penultimate labial, lack of obvious ear aperture, and absence of lateral stripes, and from *M. greyii* by single presubocular (rather than 2),

longer first supraocular, and no enlarged upper circumocular granule. This form has a well-defined dark brown stripe on the dorsolateral line on the upper flank, running from eye to hind limb, and then less distinct on the tail, bound below with white anteriorly and grey posteriorly, versus not so or barely distinct in *M. surda cresswelli*. The thin black lines on the tail are distinct, versus not so in *M. surda cresswelli*.

M. surda cresswelli besides being separated from *M. surda* by colour as just outlined, is also separated from *M. surda* by having a slightly smaller eye; in having fewer scales along paravertebral series; paravertebral scale series wider than more lateral scales along entire length of body (posterior paravertebrals not widened in nominate *M. surda*); claws on manus and pes shorter and recurved (essentially modified from Aplin and Adams (1998).

M. surda perparvus subsp. nov. is in many ways intermediate in form to the two preceding subspecies and separated from both as follows:

It is relatively small, with low paravertebral counts and relatively short claws in line with *M. surda cresswelli*, however its dorsal body pattern as more consistent with that of *M. surda surda* as described above, except that the dorsolateral line is divided in the midbody region and the dorsal colouration includes a distinct darkening along the vertebral line of moderate thickness, forming a semi-distinct line.

The posterior paravertebral scales are not widened as seen in *M. surda surda* but they are broader than the second row scales as seen in *M. surda cresswelli*.

M. surda perparvus subsp. nov. has an unusually high incidence of moderate to broad contact between the prefrontal scales (38%), accentuating the trend for medial contact observed in *M. surda cresswelli*.

M. surda praemitis subsp. nov. is similar in most respects to *M. surda perparvus subsp. nov.* but is separated from that subspecies by the dark brown, rather than light brownish-grey dorsum, and further by the fact that the dorsolateral line becomes less distinct towards the rear end of the body. Furthermore the lower edge of this line on the body is not well-defined.

M. surda facileoccultatur subsp. nov. is similar in most respects to the type form of *M. surda surda*, but is separated from that form by being slightly smaller in adult size and with higher paravertebral counts.

Type *M. surda surda* have well-defined partially divided (by narrow separation) dorsolateral lines on the midbody, whereas this is usually not present in *M. surda facileoccultatur subsp. nov.* or otherwise not well-defined or separated in the mid-section.

M. surda facileoccultatur subsp. nov. is depicted in life in Wilson and Swan (2021) on page 411 middle right.

M. surda cresswelli is depicted in life in Wilson and Swan (2021) on page 411, middle left and Cogger (2014) on page 657 at bottom.

M. surda perparvus subsp. nov. is depicted in life in Storr, Smith and Johnstone (1981) on plate 17, third picture from bottom on the right.

All subspecies of *M. surda* are separated from the closely related *M. maini* Storr, 1976 by the absence of an external ear opening and the fact that the first supraocular is about twice as long as wide, versus a tiny ear opening present and the first supraocular is at least 2.5 times as long as wide.

Until now, the seven species (four formally named in this paper) within the subgenus *Pertenuisscincus subgen. nov.* have been treated as ordinary members of the genus *Menetia* Gray, 1845, type species *Menetia greyii* Gray, 1845 by all publishing Australian herpetologists.

However the species within the subgenus *Pertenuisscincus subgen. nov.* are a morphologically divergent species group, sympatric to the other species and warrant subgenus-level recognition at least.

Chapple *et al.* (2023) also found a divergence between the two groups of over 10 MYA (see Fig. 2. on page 186), supporting the preceding contention.

Species within *Pertenuisscincus subgen. nov.* are separated from those within the nominate subgenus *Menetia* Gray, 1845 and the subgenus *Ignobilisscincus subgen. nov.* as diagnosed in this paper, by the fact that the second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species.

In the subgenus *Menetia* Gray, 1845, the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

The two species within the other subgenus *Ignobilisscincus subgen. nov.* are separated from other species within *Menetia*,

including within the subgenus *Pertenuisscincus subgen. nov.* by the following unique combination of characters: the presence of two presuboculars; the second supraciliary is much larger than the first, it contacts the prefrontal and separates the first supraciliary from the first supraocular.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. surda facileoccultatur subsp. nov.* is endemic to the Pilbara Region of Western Australia, Australia, generally south of the Fortescue River.

Etymology: The Latin word "*facileoccultatur*" means "easily hidden" which is in line with this skink species being of small size and easily missed. It was easily hidden from science in terms of its formal classification.

MENETIA (PERTENUISSCINCUS) ADMODUMPARVA SP. NOV.
LSIDDurn:lsid:zoobank.org:act:85A9A8DE-CEE2-4B63-A660-28025C90BC7B

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R46945 collected from the Prince Regent River Reserve, Kimberley District, Western Australia, Australia, Latitude -15.28 S., Longitude 125.40 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved male specimen at the Australian National Wildlife Collection, owned by the Commonwealth Scientific and Industrial Research Organisation (CSIRO), in Canberra, ACT, Australia, specimen number R10070 collected from "Potts riparian", Western Australia, Australia, Latitude -16.4897 S., Longitude 125.3575 E.

Diagnosis: Until now, *Menetia maini* Storr, 1976, with a type locality of 23 km south, south-east of Derby, Western Australia, Australia, Latitude -17.29 S., Longitude 123.43 E, has been treated as a wide-ranging taxon with a distribution stretching from broadly from Coulomp Point, Western Australia, being west of Derby, just south of the elevated parts of the west Kimberley District, through the Kimberley District, into the top end of the Northern Territory and across to parts of adjacent north-west Queensland.

Ingram (1977) formally named the west Queensland population as *M. zynja* Ingram, 1977 with a type locality of Mount Unbunmaroo, 90 km north-west of Boulia, Western Queensland, Australia, Latitude -22.32 S., Longitude 140.18 E.

However, Cogger *et al.* (1983) synonymised this taxon with *M. maini*, as have all other publishing authors since, except for Wells and Wellington (1984 and 1985).

Besides formally resurrecting *M. zynja* from synonymy, four other divergent species are also formally named for the first time.

The six species within, what is called herein the *M. maini* complex are as follows:

M. maini from the region of Derby, Western Australia, generally south of the main Kimberley ranges in north-west Australia.

M. zynja from the Selwyn Ranges and outliers in north-west Queensland.

M. admodumparva sp. nov. from the west Kimberley district in northern Western Australia.

M. perexiguus sp. nov. from the East Kimberley district and nearby parts of the north-west Northern Territory, generally west of the Victoria River system.

M. perpusillus sp. nov. from the hilly parts of the top end of the Northern Territory.

M. pertenuis sp. nov. from the Tawallah Range, southern Gulf of Carpentaria, Northern Territory.

The six species are separated from one another by the following unique combinations of characters:

M. maini has the first (and only) supraocular much more than twice as long as wide, and

in contact with first supraciliary. Uppermost circumocular granule is not enlarged. Ear aperture is small. There is no indication of lateral stripes on the body. It has 22-24 midbody rows, 16-19 subdigital lamellae under the fourth toe, one nuchal on either side of the neck and a snout vent length of less than 27 mm.

Dorsum is a dark brown, with a greyish-black undertone, dorsal scales sometimes have a few indistinct flecks that may join at times to form sections of unbroken thin and indistinct lines, either down the midline, or otherwise on other parts of the back.

These do not extend to the tail, which is in effect uni-colour brown or slightly reddish-brown.

There are few if any darker flecks on the upper surfaces or flanks of the tail.

Upper flanks are slightly darker than the dorsum, but there is no obvious demarcation along the dorsolateral line.

Belly is generally pale, but scales (especially of throat and under tail) are often edged with greyish brown. Upper labials are bold ivory-white in colour with moderately thick dark etchings on the side borders giving a slightly barred appearance. Iris in this and all other related species is a light orange colour.

M. admodumparva sp. nov. is similar to *M. maini* in most respects including in terms of colouration, but is separated from that taxon by having 26 midbody rows, 21 subdigital lamellae under the fourth toe, one or zero nuchals on either side of the neck and a snout vent length of more than 27 mm.

M. perexiguus sp. nov. is similar to *M. admodumparva* sp. nov., but with 22-26 midbody rows and white upper labials that are heavily peppered dark or tinged dark.

On the upper surfaces of the tail, are widely scattered, but obvious dark flecks, so far apart that no obvious patterning is seen.

The demarcation between the brownish dorsum and the flank is well-defined, as is the similar demarcation at the bottom of the black on the lower flank, which also forms a thin white line, giving the appearance of a thick black line down the flank.

M. perpusillus sp. nov. is separated from the preceding taxa by the combination of white upper labials that are heavily peppered dark or tinged dark; a dull orange tail at the anterior half, with a well-defined series of paired dark grey flecks running down the upper surface. There is little obvious demarcation on the dorsolateral line between the brownish upper body and darker flanks.

M. pertenuis sp. nov. is readily separated from the other species by the reduction in colour pigment on the body, leading to light-edged scales on the dorsum and even more-so on the flanks, where each scale is white edged and dark centred. This gives the appearance of there being three semi-distinct white lines running along either flank.

This configuration starts on the neck, runs past the forelimb onto the flank, but terminates at the hind limb. On the upper surfaces of the tail, the scales are light brown with black in the centre of each, this fading in intensity towards the distal end.

There are 20-24 midbody rows.

M. zynja is of significantly different appearance to the preceding species.

Dorsally and on the flanks, the lizard is a light brown colour and although the flanks are darker than the dorsum, this is of a similar colour and not greyish or blackish as in the other species. In some specimens, so dark peppering is within the scales on the dorso-lateral edge, but even in these lizards, the demarcation is only slight. The mainly white labials are heavily washed-out brown, as are the lighter scales on the lower parts of the sides of the neck. On the tail dark peppering forms a series of three

stripes, one running down the midline of the top and one on either flank, this being most prominent on the distal end. Unlike the other five species, the anterior of the tail is not a different base colour to the body, or if so, then imperceptibly. In some specimens, the tail may be orange at the anterior end, but this same orange is on the upper surface of the body as well. The side of the lower (posterior) neck is darker in colour than above, but this rapidly fades past the forelimb.

This species has 18-22 mid-body rows

M. admodumparva sp. nov. is depicted in life online at:

https://www.flickr.com/photos/zimny_anders/42069351381/

and

<https://www.flickr.com/photos/reptileshots/50362618148/>

and

<https://www.flickr.com/photos/reptileshots/51313252199/>

M. perexiguus sp. nov. is depicted in life in Wilson and Swan (2021) on page 411 at top left.

M. perpusillus sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/52077683280/>

and

https://www.flickr.com/photos/zimny_anders/51388425155/

and

https://www.flickr.com/photos/zimny_anders/51319004286/

and

<https://www.flickr.com/photos/euprepiosaur/7531633402/>

and

<https://www.flickr.com/photos/euprepiosaur/7531634086/>

M. zynja is depicted in life online at:

<https://www.flickr.com/photos/jaricornelis/40252026435/>

and

<https://www.flickr.com/photos/ryanfrancis/12510164115/>

and

<https://www.flickr.com/photos/elliottbudd/40457718034/>

The six preceding species are separated from all others in *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species; there is an external ear opening, albeit a tiny one and the first supraocular is at least 2.5 times as long as it is wide.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. admodumparva* sp. nov. appears to be confined to the west Kimberley Region of Western Australia, from at least the Prince Regent River in the south to Mitchell Plateau in the north.

Etymology: The Latin words "*admodum parva*" means "very small" which is in line with this skink species being of small size.

MENETIA (PERTENUISSCINCUS) PEREXIGUUS SP. NOV.

LSIDurn:lsid:zoobank.org:act:7F277323-90B6-4F92-BDF7-0D9CF1428BFD

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R75494 collected from 11 km northwest of the New Lissadell Homestead, Western Australia, Australia, Latitude -16.65 S., Longitude 128.466667 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R75530 and R70271, both collected from 12 to 12.1 km northwest of the New Lissadell Homestead, Western Australia, Australia, Latitude -16.616667 S., Longitude 128.466667 E.

Diagnosis: Until now, *Menetia maini* Storr, 1976, with a type locality of 23 km south, south-east of Derby, Western Australia, Australia, Latitude -17.29 S., Longitude 123.43 E, has been treated as a wide-ranging taxon with a distribution stretching from broadly from Coulomp Point, Western Australia, being west of Derby, just south of the elevated parts of the west Kimberley District, through the Kimberley District, into the top end of the Northern Territory and across to parts of adjacent north-west Queensland.

Ingram (1977) formally named the west Queensland population as *M. zynja* Ingram, 1977 with a type locality of Mount Unbunmaroo, 90 km north-west of Boulia, Western Queensland, Australia, Latitude -22.32 S., Longitude 140.18' E. However, Cogger *et al.* (1983) synonymised this taxon with *M. maini*, as have all other publishing authors since, except for Wells and Wellington (1984 and 1985).

Besides formally resurrecting *M. zynja* from synonymy, four other divergent species are also formally named for the first time.

The six species within, what is called herein the *M. maini* Gray, 1845 complex are as follows:

M. maini from the region of Derby, Western Australia, generally south of the main Kimberley ranges in north-west Australia.

M. zynja from the Selwyn Ranges and outliers in north-west Queensland.

M. admodumparva sp. nov. from the west Kimberley district in northern Western Australia.

M. perexiguus sp. nov. from the East Kimberley district and nearby parts of the north-west Northern Territory, generally west of the Victoria River system.

M. perpusillus sp. nov. from the hilly parts of the top end of the Northern Territory.

M. pertenuis sp. nov. from the Tawallah Range, southern Gulf of Carpentaria, Northern Territory.

The six species are separated from one another by the following unique combinations of characters:

M. maini has the first (and only) supraocular much more than twice as long as wide, and

in contact with first supraciliary. Uppermost circumocular granule is not enlarged. Ear aperture is small. There is no indication of lateral stripes on the body. It has 22-24 midbody rows, 16-19 subdigital lamellae under the fourth toe, one nuchal on either side of the neck and a snout vent length of less than 27 mm.

Dorsum is a dark brown, with a greyish-black undertone, dorsal scales sometimes have a few indistinct flecks that may join at times to form sections of unbroken thin and indistinct lines, either down the midline, or otherwise on other parts of the back.

These do not extend to the tail, which is in effect uni-colour brown or slightly reddish-brown.

There are few if any darker flecks on the upper surfaces or flanks of the tail.

Upper flanks are slightly darker than the dorsum, but there is no obvious demarcation along the dorsolateral line.

Belly is generally pale, but scales (especially of throat and under tail) are often edged with greyish brown. Upper labials are bold ivory-white in colour with moderately thick dark etchings on the side borders giving a slightly barred appearance. Iris in this and all other related species is a light orange colour.

M. admodumparva sp. nov. is similar to *M. maini* in most respects including in terms of colouration, but is separated from that taxon by having 26 midbody rows, 21 subdigital lamellae under the fourth toe, one or zero nuchals on either side of the neck and a snout vent length of more than 27 mm.

M. perexiguus sp. nov. is similar to *M. admodumparva sp. nov.*,

but with 22-26 midbody rows and white upper labials that are heavily peppered dark or tinged dark.

On the upper surfaces of the tail, are widely scattered, but obvious dark flecks, so far apart that no obvious patterning is seen.

The demarcation between the brownish dorsum and the flank is well-defined, as is the similar demarcation at the bottom of the black on the lower flank, which also forms a thin white line, giving the appearance of a thick black line down the flank.

M. perpusillus sp. nov. is separated from the preceding taxa by the combination of white upper labials that are heavily peppered dark or tinged dark; a dull orange tail at the anterior half, with a well-defined series of paired dark grey flecks running down the upper surface. There is little obvious demarcation on the dorsolateral line between the brownish upper body and darker flanks.

M. pertenuis sp. nov. is readily separated from the other species by the reduction in colour pigment on the body, leading to light-edged scales on the dorsum and even more-so on the flanks, where each scale is white edged and dark centred. This gives the appearance of there being three semi-distinct white lines running along either flank.

This configuration starts on the neck, runs past the forelimb onto the flank, but terminates at the hind limb. On the upper surfaces of the tail, the scales are light brown with black in the centre of each, this fading in intensity towards the distal end.

There are 20-24 midbody rows.

M. zynja is of significantly different appearance to the preceding species.

Dorsally and on the flanks, the lizard is a light brown colour and although the flanks are darker than the dorsum, this is of a similar colour and not greyish or blackish as in the other species.

In some specimens, so dark peppering is within the scales on the dorso-lateral edge, but even in these lizards, the demarcation is only slight. The mainly white labials are heavily washed-out brown, as are the lighter scales on the lower parts of the sides of the neck. On the tail dark peppering forms a series of three stripes, one running down the midline of the top and one on either flank, this being most prominent on the distal end. Unlike the other five species, the anterior of the tail is not a different base colour to the body, or if so, then imperceptibly. In some specimens, the tail may be orange at the anterior end, but this same orange is on the upper surface of the body as well. The side of the lower (posterior) neck is darker in colour than above, but this rapidly fades past the forelimb.

There are 18-22 midbody rows.

M. admodumparva sp. nov. is depicted in life online at:

https://www.flickr.com/photos/zimny_anders/42069351381/

and

<https://www.flickr.com/photos/reptileshots/50362618148/>

and

<https://www.flickr.com/photos/reptileshots/51313252199/>

M. perexiguus sp. nov. is depicted in life in Wilson and Swan (2021) on page 411 at top left.

M. perpusillus sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/52077683280/>

and

https://www.flickr.com/photos/zimny_anders/51388425155/

and

https://www.flickr.com/photos/zimny_anders/51319004286/

and

<https://www.flickr.com/photos/euprepiosaur/7531633402/>

and

<https://www.flickr.com/photos/euprepiosaur/7531634086/>

M. zynja is depicted in life online at:

<https://www.flickr.com/photos/jaricornelis/40252026435/>

and

<https://www.flickr.com/photos/ryanfrancis/12510164115/>

and

<https://www.flickr.com/photos/elliottbudd/40457718034/>

The six preceding species are separated from all others in *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species; there is an external ear opening, albeit a tiny one and the first supraocular is at least 2.5 times as long as it is wide.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. perexiguus sp. nov.* from the East Kimberley district and nearby parts of the north-west Northern Territory, generally west of the Victoria River system.

Etymology: The Latin word "*perexiguus*" means "very tiny" which is in line with this skink species being of small size.

MENETIA (PERTENUISSCINCUS) PERPUSILLUS SP. NOV.

LSIDurn:lsid:zoobank.org:act:9EA1E607-6AB0-4EB8-ADC6-E7BB2BB85671

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R24694 collected from the Mount Harris Mine, Upper Mary River, Northern Territory, Australia, Latitude -13.272 S., Longitude 131.906 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R24696 collected from the Mount Harris Mine, Upper Mary River, Northern Territory, Australia, Latitude -13.272 S., Longitude 131.906 E.

Diagnosis: Until now, *Menetia maini* Storr, 1976, with a type locality of 23 km south, south-east of Derby, Western Australia, Australia, Latitude -17.29 S., Longitude 123.43 E, has been treated as a wide-ranging taxon with a distribution stretching from broadly from Coulomp Point, Western Australia, being west of Derby, just south of the elevated parts of the west Kimberley District, through the Kimberley District, into the top end of the Northern Territory and across to parts of adjacent north-west Queensland.

Ingram (1977) formally named the west Queensland population as *M. zynja* Ingram, 1977 with a type locality of Mount Unbunmaroo, 90 km north-west of Boulia, Western Queensland, Australia, Latitude -22.32 S., Longitude 140.18' E. However, Cogger *et al.* (1983) synonymised this taxon with *M. maini*, as have all other publishing authors since, except for Wells and Wellington (1984 and 1985).

Besides formally resurrecting *M. zynja* from synonymy, four other divergent species are also formally named for the first time.

The six species within, what is called herein the *M. maini* Gray, 1845 complex are as follows:

M. maini from the region of Derby, Western Australia, generally south of the main Kimberley ranges in north-west Australia.

M. zynja from the Selwyn Ranges and outliers in north-west Queensland.

M. admodumparva sp. nov. from the west Kimberley district in northern Western Australia.

M. perexiguus sp. nov. from the East Kimberley district and nearby parts of the north-west Northern Territory, generally west

of the Victoria River system.

M. perpussillus sp. nov. from the hilly parts of the top end of the Northern Territory.

M. pertenuis sp. nov. from the Tawallah Range, southern Gulf of Carpentaria, Northern Territory.

The six species are separated from one another by the following unique combinations of characters:

M. maini has the first (and only) supraocular much more than twice as long as wide, and

in contact with first supraciliary. Uppermost circumocular granule is not enlarged. Ear aperture is small. There is no indication of lateral stripes on the body. It has 22-24 midbody rows, 16-19 subdigital lamellae under the fourth toe, one nuchal on either side of the neck and a snout vent length of less than 27 mm.

Dorsum is a dark brown, with a greyish-black undertone, dorsal scales sometimes have a few indistinct flecks that may join at times to form sections of unbroken thin and indistinct lines, either down the midline, or otherwise on other parts of the back.

These do not extend to the tail, which is in effect uni-colour brown or slightly reddish-brown.

There are few if any darker flecks on the upper surfaces or flanks of the tail.

Upper flanks are slightly darker than the dorsum, but there is no obvious demarcation along the dorsolateral line.

Belly is generally pale, but scales (especially of throat and under tail) are often edged with greyish brown. Upper labials are bold ivory-white in colour with moderately thick dark etchings on the side borders giving a slightly barred appearance. Iris in this and all other related species is a light orange colour.

M. admodumparva sp. nov. is similar to *M. maini* in most respects including in terms of colouration, but is separated from that taxon by having 26 midbody rows, 21 subdigital lamellae under the fourth toe, one or zero nuchals on either side of the neck and a snout vent length of more than 27 mm.

M. perexiguus sp. nov. is similar to *M. admodumparva sp. nov.*, but with 22-26 midbody rows and white upper labials that are heavily peppered dark or tinged dark.

On the upper surfaces of the tail, are widely scattered, but obvious dark flecks, so far apart that no obvious patterning is seen.

The demarcation between the brownish dorsum and the flank is well-defined, as is the similar demarcation at the bottom of the black on the lower flank, which also forms a thin white line, giving the appearance of a thick black line down the flank.

M. perpussillus sp. nov. is separated from the preceding taxa by the combination of white upper labials that are heavily peppered dark or tinged dark; a dull orange tail at the anterior half, with a well-defined series of paired dark grey flecks running down the upper surface. There is little obvious demarcation on the dorsolateral line between the brownish upper body and darker flanks.

M. pertenuis sp. nov. is readily separated from the other species by the reduction in colour pigment on the body, leading to light-edged scales on the dorsum and even more-so on the flanks, where each scale is white edged and dark centred. This gives the appearance of there being three semi-distinct white lines running along either flank.

This configuration starts on the neck, runs past the forelimb onto the flank, but terminates at the hind limb. On the upper surfaces of the tail, the scales are light brown with black in the centre of each, this fading in intensity towards the distal end.

There are 20-24 midbody rows.

M. zynja is of significantly different appearance to the preceding species.

Dorsally and on the flanks, the lizard is a light brown colour and although the flanks are darker than the dorsum, this is of a similar colour and not greyish or blackish as in the other species.

In some specimens, so dark peppering is within the scales on the dorso-lateral edge, but even in these lizards, the demarcation

is only slight. The mainly white labials are heavily washed-out brown, as are the lighter scales on the lower parts of the sides of the neck. On the tail dark peppering forms a series of three stripes, one running down the midline of the top and one on either flank, this being most prominent on the distal end. Unlike the other five species, the anterior of the tail is not a different base colour to the body, or if so, then imperceptibly. In some specimens, the tail may be orange at the anterior end, but this same orange is on the upper surface of the body as well. The side of the lower (posterior) neck is darker in colour than above, but this rapidly fades past the forelimb.

There are 18-22 midbody rows.

M. admodumparva sp. nov. is depicted in life online at:

https://www.flickr.com/photos/zimny_anders/42069351381/
and

<https://www.flickr.com/photos/reptileshots/50362618148/>
and

<https://www.flickr.com/photos/reptileshots/51313252199/>

M. perexiguus sp. nov. is depicted in life in Wilson and Swan (2021) on page 411 at top left.

M. perpusillus sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/52077683280/>
and

https://www.flickr.com/photos/zimny_anders/51388425155/
and

https://www.flickr.com/photos/zimny_anders/51319004286/
and

<https://www.flickr.com/photos/euprepiosaur/7531633402/>
and

<https://www.flickr.com/photos/euprepiosaur/7531634086/>

M. zynja is depicted in life online at:

<https://www.flickr.com/photos/jaricornelis/40252026435/>
and

<https://www.flickr.com/photos/ryanfrancis/12510164115/>
and

<https://www.flickr.com/photos/elliottbudd/40457718034/>

The six preceding species are separated from all others in *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species; there is an external ear opening, albeit a tiny one and the first supraocular is at least 2.5 times as long as it is wide.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. perpusillus* sp. nov. occurs in the hilly parts of the tropical top end of the Northern Territory, west of the Gulf of Carpentaria and north-east of the Victoria River system.

Etymology: The Latin word "*perpusillus*" means "dwarf like" which is in line with this skink species being of very small size.

MENETIA (PERTENUISSCINCUS) PERTENUIS SP. NOV.

LSIDurn:lsid:zoobank.org:act:59BE656C-D77F-4BB1-85D3-FCF5A9FE5DF2

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R36328 collected from the Upper Karn's Creek, Pungalina Station, Gulf of Carpentaria, Northern Territory,

Australia, Latitude -16.867 S., Longitude 137.55 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R36329 collected from the Upper Karn's Creek, Pungalina Station, Gulf of Carpentaria, Northern Territory, Australia, Latitude -16.867 S., Longitude 137.55 E.

Diagnosis: Until now, *Menetia maini* Storr, 1976, with a type locality of 23 km south, south-east of Derby, Western Australia, Australia, Latitude -17.29 S., Longitude 123.43 E, has been treated as a wide-ranging taxon with a distribution stretching from broadly from Coulomp Point, Western Australia, being west of Derby, just south of the elevated parts of the west Kimberley District, through the Kimberley District, into the top end of the Northern Territory and across to parts of adjacent north-west Queensland.

Ingram (1977) formally named the west Queensland population as *M. zynja* Ingram, 1977 with a type locality of Mount Unbunmaroo, 90 km north-west of Boulia, Western Queensland, Australia, Latitude -22.32 S., Longitude 140.18' E. However, Cogger *et al.* (1983) synonymised this taxon with *M. maini*, as have all other publishing authors since, except for Wells and Wellington (1984 and 1985).

Besides formally resurrecting *M. zynja* from synonymy, four other divergent species are also formally named for the first time.

The six species within, what is called herein the *M. maini* Gray, 1845 complex are as follows:

M. maini from the region of Derby, Western Australia, generally south of the main Kimberley ranges in north-west Australia.

M. zynja from the Selwyn Ranges and outliers in north-west Queensland.

M. admodumparva sp. nov. from the west Kimberley district in northern Western Australia.

M. perexiguus sp. nov. from the East Kimberley district and nearby parts of the north-west Northern Territory, generally west of the Victoria River system.

M. perpusillus sp. nov. from the hilly parts of the top end of the Northern Territory.

M. pertenuis sp. nov. from the Tawallah Range, southern Gulf of Carpentaria, Northern Territory.

The six species are separated from one another by the following unique combinations of characters:

M. maini has the first (and only) supraocular much more than twice as long as wide, and

in contact with first supraciliary. Uppermost circumocular granule is not enlarged. Ear aperture is small. There is no indication of lateral stripes on the body. It has 22-24 midbody rows, 16-19 subdigital lamellae under the fourth toe, one nuchal on either side of the neck and a snout vent length of less than 27 mm.

Dorsum is a dark brown, with a greyish-black undertone, dorsal scales sometimes have a few indistinct flecks that may join at times to form sections of unbroken thin and indistinct lines, either down the midline, or otherwise on other parts of the back.

These do not extend to the tail, which is in effect uni-colour brown or slightly reddish-brown.

There are few if any darker flecks on the upper surfaces or flanks of the tail.

Upper flanks are slightly darker than the dorsum, but there is no obvious demarcation along the dorsolateral line.

Belly is generally pale, but scales (especially of throat and under tail) are often edged with greyish brown. Upper labials are bold ivory-white in colour with moderately thick dark etchings on the side borders giving a slightly barred appearance. Iris in this and all other related species is a light orange colour.

M. admodumparva sp. nov. is similar to *M. maini* in most respects including in terms of colouration, but is separated from that taxon by having 26 midbody rows, 21 subdigital lamellae under the fourth toe, one or zero nuchals on either side of the neck and a snout vent length of more than 27 mm.

M. perexiguus sp. nov. is similar to *M. admodumparva sp. nov.*, but with 22-26 midbody rows and white upper labials that are heavily peppered dark or tinged dark.

On the upper surfaces of the tail, are widely scattered, but obvious dark flecks, so far apart that no obvious patterning is seen.

The demarcation between the brownish dorsum and the flank is well-defined, as is the similar demarcation at the bottom of the black on the lower flank, which also forms a thin white line, giving the appearance of a thick black line down the flank.

M. perpusillus sp. nov. is separated from the preceding taxa by the combination of white upper labials that are heavily peppered dark or tinged dark; a dull orange tail at the anterior half, with a well-defined series of paired dark grey flecks running down the upper surface. There is little obvious demarcation on the dorsolateral line between the brownish upper body and darker flanks.

M. pertenuis sp. nov. is readily separated from the other species by the reduction in colour pigment on the body, leading to light-edged scales on the dorsum and even more-so on the flanks, where each scale is white edged and dark centred. This gives the appearance of there being three semi-distinct white lines running along either flank.

This configuration starts on the neck, runs past the forelimb onto the flank, but terminates at the hind limb. On the upper surfaces of the tail, the scales are light brown with black in the centre of each, this fading in intensity towards the distal end.

There are 20-24 midbody rows.

M. zynja is of significantly different appearance to the preceding species.

Dorsally and on the flanks, the lizard is a light brown colour and although the flanks are darker than the dorsum, this is of a similar colour and not greyish or blackish as in the other species.

In some specimens, so dark peppering is within the scales on the dorso-lateral edge, but even in these lizards, the demarcation is only slight. The mainly white labials are heavily washed-out brown, as are the lighter scales on the lower parts of the sides of the neck. On the tail dark peppering forms a series of three stripes, one running down the midline of the top and one on either flank, this being most prominent on the distal end. Unlike the other five species, the anterior of the tail is not a different base colour to the body, or if so, then imperceptibly. In some specimens, the tail may be orange at the anterior end, but this same orange is on the upper surface of the body as well. The side of the lower (posterior) neck is darker in colour than above, but this rapidly fades past the forelimb.

There are 18-22 midbody rows.

M. admodumparva sp. nov. is depicted in life online at:
https://www.flickr.com/photos/zimny_anders/42069351381/
and

<https://www.flickr.com/photos/reptileshots/50362618148/>
and

<https://www.flickr.com/photos/reptileshots/51313252199/>

M. perexiguus sp. nov. is depicted in life in Wilson and Swan (2021) on page 411 at top left.

M. perpusillus sp. nov. is depicted in life online at:
<https://www.flickr.com/photos/reptileshots/52077683280/>
and

https://www.flickr.com/photos/zimny_anders/51388425155/
and

https://www.flickr.com/photos/zimny_anders/51319004286/
and

<https://www.flickr.com/photos/euprepiosaur/7531633402/>
and

<https://www.flickr.com/photos/euprepiosaur/7531634086/>

M. zynja is depicted in life online at:

<https://www.flickr.com/photos/jaricornelis/40252026435/>
and

<https://www.flickr.com/photos/ryanfrancis/12510164115/>
and

<https://www.flickr.com/photos/elliottbudd/40457718034/>

The six preceding species are separated from all others in *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The second supraciliary is either smaller than, or roughly the same size as the first and does not contact the prefrontal. The first supraciliary and first supraocular are in contact. There is one presubocular, versus 2 in some of the other species; there is an external ear opening, albeit a tiny one and the first supraocular is at least 2.5 times as long as it is wide.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. pertenuis sp. nov.* occurs in the area of the Tawallah Range, southern Gulf of Carpentaria, Northern Territory. It is assumed to be a range-restricted endemic in line with some other recently described taxa from this area, like *Silubosaurus hoseerae maxinehoseerae* Hoser, 2018.

Etymology: The Latin word "*pertenuis*" means "very thin" or "very small" which is in line with this skink species being of very small size and thin build.

MENETIA (MENETIA) TANYADAYAE SP. NOV.

LSIDurn:lsid:zoobank.org:act:788A8B7E-7F43-4D80-AF5B-5AAAAF92F7D0

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R01670 collected from Armstrong Creek, 100km west of Ayers Rock (Uluru), Central Australia, Northern Territory, Australia, Latitude -25.083 S., Longitude 130.05 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen numbers R01693 and R01694 both collected from Armstrong Creek, 100km west of Ayers Rock (Uluru), Central Australia, Northern Territory, Australia, Latitude -25.083 S., Longitude 130.05 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named herein, including two with distributions including the far north of South Australia, that were flagged as distinct species by Adams *et al.* (2003), being to date the only other identified species within this species complex.

These eight hitherto unnamed species are as follows:

1/ *M. tanyadayae* sp. nov. from the central Australian deserts and ranges, of the Northern Territory, extending into South Australia in the far north and north-west (flagged by Adams *et al.* in 2003).

2/ *M. kullilli* sp. nov. from northeast South Australia and nearby south-west Queensland, generally conforming to the lower Lake Eyre basin (flagged by Adams *et al.* in 2003).

3/ *M. bibbulmun* sp. nov. from Perth and environs, Western Australia.

4/ *M. dhuae* sp. nov. from Shark Bay, Western Australia.

5/ *M. dungayi* sp. nov. from the east Pilbara, Western Australia.

6/ *M. langdoni* sp. nov. from Kakadu and nearby parts of the Northern Territory.

7/ *M. anindilyakwa* sp. nov. endemic to Groote Eylandt, Northern Territory.

8/ *M. yidinjii* sp. nov. from far north-east Queensland, west of the Great Dividing Range.

Each of the eight species and the three previously described species are readily separated from one another by the following unique combinations of characters:

M. tanyadayae sp. nov. is separated from the other 10 species in the *M. greyii* complex by the unique combination of:

20 midbody rows, a thick blackish stripe on the neck and flank; a brown dorsum with scattered dark spots on the back and a greyish tail. The upper surfaces of the hind limbs are light brown and with a small amount of indistinct dark spotting on the medial line. On the neck to just past the forelimb and below the dark lateral stripe is a well-defined immaculate white line, bordered below by a well-defined area of dark purplish-grey. This terminates on the forebody and does not extend down the flank.

M. tanyadayae sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/1258099>

and

<https://www.inaturalist.org/observations/171513172>

M. kullilli sp. nov. is similar in most respects to *M. tanyadayae* sp. nov., as detailed above, which it is evidently closely related to, but differs from that species in that it has numerous dark spots on the dorsum, these forming rows, especially towards the base of the tail, as well as a thinner dark blackish stripe on the neck and flank, being medium in thickness rather than wide.

The upper surfaces of the hind limbs are blackish in colour, this being the obvious colouration, but also including limited amounts of brown spots or markings.

On the neck to just past the forelimb and below the dark lateral stripe is a poorly defined and very thin white line, bordered below by indistinct peppering of dark purplish-grey. This terminates on the forebody and does not extend down the flank.

Perhaps the easiest way to separate *M. tanyadayae* sp. nov. from *M. kullilli* sp. nov. is by the fact that in *M. tanyadayae* sp. nov. the dark lateral stripe is wide anterior to the forelimb and then effectively disintegrates posteriorly, so that along the body there is a dark edge only along the dorso-lateral line, but no well-defined dark line along the upper flank, versus a well-defined thin dark brown (rather than blackish) line of even thickness running along the lateral edge, being thin from eye to forelimb and remaining of the same thickness and intensity along the length of the body to the hind limb, so that there remains a well-defined line along the upper flank and not just a dark edge.

M. kullilli sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/69755051>

M. bibbulmun sp. nov. is a dark blackish to chocolate brown form (on the dorsum), with 22-24 midbody rows. It also has mainly dark (black or blackish) upper labials; no obvious line separating the dark upper flank from the slightly less dark outer dorsum and

no obvious line demarcating the dark upper flank with the slightly lighter lower flank. Any dark specks or flecks on the dorsum are of similar colour to the rest of the dorsum and so are barely noticeable.

Upper surfaces of the limbs are a dark greyish-black and without any obvious spots, flecks, or other markings. Top of the head is mainly unicolour, but with some slightly darker marbling present. Tail is dark with barely distinct markings and of similar colour to the upper body.

Lighter coloured specimens, being either brown or grey on the dorsum, which are also found in the same populations still have the same colour configurations as outlined above.

M. bibbulmun sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/15348493575/>

and

<https://www.flickr.com/photos/chrisjcooper/9659975699/>

and

<https://www.inaturalist.org/observations/141493196>

and

<https://www.inaturalist.org/observations/139108032>

M. dhuae sp. nov. is separated from the other species as follows: The dorsum and flanks are peppered heavily with small cream or white spots, giving the lizard a sandy appearance. The white spotting continues onto the anterior tail where they tend to form two obvious rows on either side of the mid-dorsal line.

The dark of the upper flank is faded to a slightly more greyish-brown than that of the dorsum and due to the white spotting, is barely noticeable in any way. Upper surfaces of the limbs also have the same white spotting as seen on the rest of the upper body, but the spots on the limbs are well scattered. Spotting tends to marbling on the upper surfaces of the head, especially anteriorly, where the white spotting disappears.

Upper labials are white and with dark bars, but otherwise forming a well-defined white line from snout to ear. The white line seen on the lower flank of other species in the complex is not present in this species. There are 22 midbody rows.

M. dhuae sp. nov. is depicted in life in Wilson and Swan (2021) on page 409 at bottom.

M. dungayi sp. nov. is separated from the other species as follows:

Most noticeably by its distinctive orange-red dorsum, which is almost immaculate in colour save for some indistinct peppering on the neck and darker brown mottling on the head.

The dark brown stripe from the snout to the top of the forelimb is extremely wide and well-defined between the eye and forelimb, being well-defined on the upper edge and bound by white on the lower edge. On the flank and anterior tail, the line is a thin blackish-brown, well-defined line, bound on either side (top and below) with immaculate orange.

About half-way down the flank, this colouration tends to fade, but not suddenly and with orange continuing to the ventral surface.

Upper surfaces of the limbs are orange, but heavily marked with dark purplish-brown spots. The dorsal surface of the tail has either no spots, or at best barely distinct peppering.

Anterior upper labials are mainly dark and posterior upper labials are immaculate white. There are 22 midbody rows.

M. dungayi sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/54876436@N08/6966016226/>

M. langdoni sp. nov. is readily separated from the other species in the complex by having 22 midbody rows, a very light dorsum, a very thick black stripe on the flank, being thick along the entire side of the flank and scattered large spots on the back.

The stripe on the flank has a well-defined border on the upper edge (on the dorso-lateral edge), where it is prominent because the dorsum lightens markedly at the outer edge. On the lower edge of the dark flank line, is a thin well-defined immaculate white line, bounded by a thin black line underneath, below which is the immaculate white of the far lower flank and belly.

The light brown dorsum has scattered blackish spots, which are

sparse anteriorly and become more prevalent towards the tail and remaining moderately spaced on the anterior end of the upper surface of the tail. The spots are rectangular shaped, the longer edge being on the snout-tail edge, rather than crossways. The black line of the flank continues onto the lateral edges of the tail, where it remains distinct for most of the length of the tail. The latter half of the upper surface of the tail has no obvious blackish flecks or markings and is of the same colour as the upper surface of the dorsum.

The upper surfaces of the limbs are marked blackish on the medial line and light brown on the sides.

M. langdoni sp. nov. is depicted in life in Horner (1992) on page 119 in Fig. 105.

M. anindilyakwa sp. nov. is diagnosed as for *M. langdoni* sp. nov. but is readily separated from that species by having 20 mid-body rows (not 22) and a thinner black stripe on the flank as well as by having a significant number of indistinct flecks on the upper surface of the dorsum.

M. yidinji sp. nov. is separated from the other species in the complex by the following combination of characters: A dusty brown coloured dorsum and similar on the sides, with semi-distinct scattered dark flecks of irregular, but generally circular shape. This means that the dark side band is not distinct, being of similar colour to the dorsum and therefore with an indistinct upper border.

On the lower part of the flank, the dark fades to brown, but at the far bottom of the lower flank and where the colour is light brown, there is a well-defined and thin white line, sometimes broken with brown and also without border. The upper labials (front and back) are immaculate white and without etching or bars. The rest of the side of the head is dark in colour, this being an artefact of heavy peppering on white.

Upper surfaces of the limbs are dark grey brown, with light edges on the scales, but otherwise no obvious markings. The tail is a light brown on top, being significantly lighter in colour than the body.

There are 22 midbody rows.

M. yidinji sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/136993916>

M. greyii of the nominate form from inland parts of the southern two thirds of Western Australia are separated from the preceding species by the following character suite:

The dark band from eye to top of forelimb is distinct, but relatively thin. Along the body the line is thin, with a distinct upper edge and a faded lower edge. The dorsum itself has indistinct flecks of slightly darker colour than the surrounding scales. Most of the flank is whitish brown or grey, but slightly lighter at the bottom than on the mid flank. The dorsolateral line continues onto the anterior part of the tail whereupon it breaks up.

Upper surfaces of the limbs are light brown, but heavily marked dark purplish-brown, especially on the uppermost parts.

Anterior upper labials are mainly dark. Rear upper labials are mainly white or creamish-white.

There are 22 midbody rows.

M. greyii of the nominate form is depicted in life online at:

<https://www.inaturalist.org/observations/24643408>

and

<https://www.inaturalist.org/observations/154926326>

M. microscincus is as described for *M. bibbulmun* sp. nov. above, but separated from that taxon by having a well-defined thick black line along the flank and the length of the tail on either side. This black line is bordered below by a thin white line, below which is peppered grey on white.

There are 22-24 midbody rows.

Head is heavily peppered.

M. microscincus is depicted in life online at:

<https://www.inaturalist.org/observations/13060357>

M. reidi is readily separated from the other (preceding) species as follows:

Heavy flecking or peppering on the dorsum, these forming into well-defined longitudinal lines, that extend onto the upper surface of the tail, at which point they become more dense and defined and then continue as bold thin lines down the anterior half of the tail.

Dorsum is otherwise a light brown colour, or grey-brown and the head is usually completely or near completely immaculate and without spots, flecks or mottling.

Upper surfaces of the limbs are darker than the dorsum, that is they are dark in colour and essentially unicolour as in no obvious markings.

The dark blackish stripe down the side is distinctly bordered on the upper surface and also below where greyish-white forms the border.

Upper labials are white but with obvious darker brown or grey markings.

22 midbody rows.

M. reidi is depicted in life online at:

<https://www.flickr.com/photos/23031163@N03/7033164119/>

and

<https://www.inaturalist.org/observations/42666397>

and

<https://www.inaturalist.org/observations/151188381>

The eleven preceding species are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraocular is much larger than the first, contacts the prefrontal and separates the first supraocular from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior of body. 12-23 lamellae under fourth toe; 20-24 midbody rows. Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Skinks of the genus *Pygmaescincus* Couper and Hoskin, 2014, formerly treated as being within *Menetia* Gray, 1845, are separated from that genus by the fact that the interparietal scale is distinct and not fused to the fronto-parietals, versus the opposite condition in to at least some degree in all *Menetia*.

Distribution: *M. tanyadayae* sp. nov. appears to be confined to the coastal region immediately surrounding the city of Perth in and around the nearby coastal plain and adjacent hills.

Etymology: *M. tanyadayae* sp. nov. is named in recognition of a Yorta Yorta (Australian Aboriginal) woman named Tanya Day.

In December 2017 she was attacked by corrupt Victorian Police (aren't most of them corrupt?) while unlawfully detained at the Castlemaine police station. She died shortly after.

More details of this and the other Aboriginal killings at the hands of Australian police referred to in this paper can be found online at: <https://antar.org.au/issues/justice/deaths-custody/>

MENETIA (MENETIA) KULLILLI SP. NOV.

LSIDurn:lsid:zoobank.org:act:FADCBE3A-9E74-4110-AB90-A62C6C766F26

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R45768 collected from 3.7 km southwest of Frew Well, South

Australia, Australia, Latitude -26.0564 S., Longitude 140-0692 E. This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R44971 collected from 4.7 km northeast of Mount Gow, South Australia, Australia, Latitude -26.525 S., Longitude 140.7375 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However, published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. kullilli sp. nov. is found in the general region of northeast South Australia and nearby south-west Queensland, generally conforming to the lower Lake Eyre basin (and was a taxon flagged as a species by Adams *et al.* in 2003).

A morphologically similar species *M. tanyadayae* sp. nov. occurs in the deserts of Central Australia, including the central Australian Ranges and Tanami desert to the north. It also occurs in the far north-west of South Australia.

The two species *M. tanyadayae* sp. nov. and *M. kullilli* sp. nov. are readily separated from all other species within the *M. greyii* species complex by the following unique combinations of characters;

M. tanyadayae sp. nov. is separated from the other 10 species in the *M. greyii* complex by the unique combination of:

20 midbody rows, a thick blackish stripe on the neck and flank; a brown dorsum with scattered dark spots on the back and a greyish tail. The upper surfaces of the hind limbs are light brown and with a small amount of indistinct dark spotting on the medial line. On the neck to just past the forelimb and below the dark lateral stripe is a well-defined immaculate white line, bordered below by a well-defined area of dark purplish-grey. This terminates on the forebody and does not extend down the flank.

M. tanyadayae sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/1258099>

and

<https://www.inaturalist.org/observations/171513172>

M. kullilli sp. nov. is similar in most respects to *M. tanyadayae* sp. nov., as detailed above, which it is evidently closely related to, but differs from that species in that it has numerous dark spots on the dorsum, these forming rows, especially towards the base of the tail, as well as a thinner dark blackish stripe on the neck and flank, being medium in thickness rather than wide.

The upper surfaces of the hind limbs are blackish in colour, this being the obvious colouration, but also including limited amounts of brown spots or markings.

On the neck to just past the forelimb and below the dark lateral

stripe is a poorly defined and very thin white line, bordered below by indistinct peppering of dark purplish-grey. This terminates on the forebody and does not extend down the flank.

Perhaps the easiest way to separate *M. tanyadayae* sp. nov. from *M. kullilli* sp. nov. is by the fact that in *M. tanyadayae* sp. nov. the dark lateral stripe is wide anterior to the forelimb and then effectively disintegrates posteriorly, so that along the body there is a dark edge only along the dorso-lateral line, but no well-defined dark line along the upper flank, versus a well-defined thin dark brown (rather than blackish) line of even thickness running along the lateral edge, being thin from eye to forelimb and remaining of the same thickness and intensity along the length of the body to the hind limb, so that there remains a well-defined line along the upper flank and not just a dark edge.

M. kullilli sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/69755051>

The eleven species in the *M. greyii* complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuiscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. kullilli* sp. nov. is a taxon found generally in the lower Lake Eyre basin of northern South Australia and immediately adjacent parts of south-west Queensland.

Etymology: *M. kullilli* sp. nov. is named in recognition of the Kullilli people, being the Aboriginal Australians who inhabited the part of Australia from where this species occurs, that being the Channel Country of south-west Queensland and nearby parts of north-east South Australia.

The spelling of the species name is deliberate and should not be altered or emended to the form of "orum" as may be contemplated by a first reviser, to potentially correct the Latinisation of the name. The same applies to any other species name in honour of an Aboriginal tribe or group of peoples that I have named either in this paper, any earlier papers, or others published in 2024, unless already named in such a format (e.g. as "orum").

MENETIA (MENETIA) BIBBULMUN SP. NOV.

LSIDurn:lsid:zoobank.org:act:E3A87B89-FF3A-4428-81F1-3CEB2FD5A56A

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R118197 collected from Bold Park, Perth, Western Australia, Australia, Latitude -31.941389 S., Longitude 115.766944 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R62707 collected from Jandakot, Western Australia, Australia, Latitude -32.15 S., Longitude 115.833333 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been

treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However, published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. bibbulmun sp. nov. appears to be confined to Perth and environs, Western Australia, including the hilly areas to the east of the city.

M. bibbulmun sp. nov. is separated from the other ten species in the *M. greyii* species complex by the following unique combination of characters:

It is a dark blackish to chocolate brown form (on the dorsum), with 22-24 midbody rows. It also has mainly dark (black or blackish) upper labials; no obvious line separating the dark upper flank from the slightly less dark outer dorsum and no obvious line demarcating the dark upper flank with the slightly lighter lower flank. Any dark specks or flecks on the dorsum are of similar colour to the rest of the dorsum and so are barely noticeable.

Upper surfaces of the limbs are a dark greyish-black and without any obvious spots, flecks, or other markings. Top of the head is mainly unicolour, but with some slightly darker marbling present. Tail is dark with barely distinct markings and of similar colour to the upper body.

Lighter coloured specimens, being either brown or grey on the dorsum, which are also found in the same populations still have the same colour configurations as outlined above.

M. bibbulmun sp. nov. is depicted in life online at:
<https://www.flickr.com/photos/reptileshots/15348493575/>
and

<https://www.flickr.com/photos/chrisjcooper/9659975699/>
and

<https://www.inaturalist.org/observations/141493196>
and

<https://www.inaturalist.org/observations/139108032>

The eleven species in the *M. greyii* species complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. bibbulmun* sp. nov. appears to be confined to Perth and environs, Western Australia, including the hilly areas to the east of the city.

Etymology: *M. bibbulmun* sp. nov. is named in recognition of the Noongar/Bibbulmun people, who are the traditional (Aboriginal) owners of the southwest of Western Australia, prior to the European invasion, being where this species occurs. The spelling of this name should not be emended by any first reviser.

MENETIA (MENETIA) DHUAE SP. NOV.

LSIDurn:lsid:zoobank.org:act:5B423C0F-F8F2-4347-BB56-1277BC973B2A

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R135528 collected from 4 km north-west of Tamala Homestead, Western Australia, Australia, Latitude -26.65 S., Longitude 113.666667 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R135529 collected from 4 km north-west of Tamala Homestead, Western Australia, Australia, Latitude -26.65 S., Longitude 113.666667 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. dhuae sp. nov. is a taxon apparently confined to the lower Shark Bay region in Western Australia and it is separated from the other species in the *M. greyii* species complex as follows: The dorsum and flanks are peppered heavily with small cream or white spots, giving the lizard a sandy appearance. The white spotting continues onto the anterior tail where they tend to form two obvious rows on either side of the mid-dorsal line.

The dark of the upper flank is faded to a slightly more greyish-brown than that of the dorsum and due to the white spotting, is barely noticeable in any way. Upper surfaces of the limbs also

have the same white spotting as seen on the rest of the upper body, but the spots on the limbs are well scattered. Spotting tends to marbling on the upper surfaces of the head, especially anteriorly, where the white spotting disappears.

Upper labials are white and with dark bars, but otherwise forming a well-defined white line from snout to ear. The white line seen on the lower flank of other species in the complex is not present in this species. There are 22 midbody rows.

M. dhuae sp. nov. is depicted in life in Wilson and Swan (2021) on page 409 at bottom.

The eleven species in the *M. greyii* species complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. dhuae* sp. nov. appears to be confined to coastal areas of the lower Shark Bay Region in western Western Australia, Australia.

Etymology: *M. dhuae* sp. nov. is named in honour of Julieka Ivanna Dhu. She was a 22-year-old Aboriginal Australian woman who died after being unlawfully bashed by racist police in South Hedland, Western Australia, in 2014.

Her stature in Australian society was small, as is the stature of the skink named in her honour. However her murder by corrupt police should not go unnoticed.

It is fitting that a species be named in honour of an oppressed, rather than an oppressor as has been the case all too often in recent history in Australia.

MENETIA (MENETIA) DUNGAYI SP. NOV.

LSIDDurn:lsid:zoobank.org:act:E63FAB88-910F-45BC-936B-02585017D74B

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R125483 collected from 30 km east of Newman, Western Australia, Australia, Latitude -23.316667 S., Longitude 120 E. This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R125090 collected from 30 km east of Newman, Western Australia, Australia, Latitude -23.316667 S., Longitude 120 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of

morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooley, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. dungayi sp. nov. a taxon apparently confined to the Pilbara region of Western Australia, is separated from the other species in the *M. greyii* species complex by the following unique combination of characters:

Most noticeably by its distinctive orange-red dorsum, which is almost immaculate in colour save for some indistinct peppering on the neck and darker brown mottling on the head.

The dark brown stripe from the snout to the top of the forelimb is extremely wide and well-defined between the eye and forelimb, being well-defined on the upper edge and bound by white on the lower edge. On the flank and anterior tail, the line is a thin blackish-brown, well-defined line, bound on either side (top and below) with immaculate orange.

About half-way down the flank, this colouration tends to fade, but not suddenly and with orange continuing to the ventral surface.

Upper surfaces of the limbs are orange, but heavily marked with dark purplish-brown spots. The dorsal surface of the tail has either no spots, or at best barely distinct peppering.

Anterior upper labials are mainly dark and posterior upper labials are immaculate white. There are 22 midbody rows.

M. dungayi sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/54876436@N08/6966016226/>

The eleven species in the *M. greyii* species complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. dungayi* sp. nov. is a taxon apparently confined to the Pilbara region of Western Australia.

Etymology: *M. dungayi* sp. nov. is named in honour of David Dungay Junior.

This 26 year old Dughutti man (native Aboriginal Australian) was attacked and killed by prison officers in Sydney in 2015. David's family are still fighting for justice, which in reality is a fight they will never win in a country as racist and corrupt as Australia.

MENETIA (MENETIA) LANGDONI SP. NOV.

LSIDurn:lsid:zoobank.org:act:92962C03-6C9E-4F70-88B6-FD8A144779BE

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R13839 collected from Kakadu National Park, Northern Territory, Australia, Latitude -13.483 S., Longitude 132.25 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen numbers R13840 and R13841, both collected from Kakadu National Park, Northern Territory, Australia, Latitude -13.483 S., Longitude 132.25 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. langdoni sp. nov. is a species apparently confined to the Kakadu National Park escarpment and associated hilly areas to the south, extending almost to the Tanami Desert to the south-west.

M. langdoni sp. nov. readily separated from the other species in the *Menetia greyii* Gray, 1845 complex by having 22 midbody rows, a very light dorsum, a very thick black stripe on the flank, being thick along the entire side of the flank and scattered large spots on the back.

The stripe on the flank has a well-defined border on the upper edge (on the dorso-lateral edge), where it is prominent because the dorsum lightens markedly at the outer edge. On the lower edge of the dark flank line, is a thin well-defined immaculate white line, bounded by a thin black line underneath, below which is the immaculate white of the far lower flank and belly.

The light brown dorsum has scattered blackish spots, which are sparse anteriorly and become more prevalent towards the tail and remaining moderately spaced on the anterior end of the upper surface of the tail. The spots are rectangular shaped, the longer edge being on the snout-tail edge, rather than crossways. The black line of the flank continues onto the lateral edges of the tail, where it remains distinct for most of the length of the tail. The latter half of the upper surface of the tail has no obvious blackish flecks or markings and is of the same colour as the upper surface of the dorsum.

The upper surfaces of the limbs are marked blackish on the medial line and light brown on the sides.

M. langdoni sp. nov. is depicted in life in Horner (1992) on page 119 in Fig. 105.

The eleven species in the *M. greyii* species complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. langdoni* sp. nov. is a species apparently confined to the Kakadu National Park escarpment and associated hilly areas to the south, extending almost to the Tanami Desert to the south-west.

Etymology: *M. langdoni* sp. nov. is named in honour of Kumanjaji or Kwementyaye Langdon, known in life as Perry Jabanangka Langdon.

He was an acclaimed Warlpiri (Aboriginal) artist whose work is held by the National Gallery of Victoria.

He died on 21 May 2015 of heart failure in Darwin Watch House, around three hours after being bashed senseless by corrupt, racist Northern Territory (NT) Police in one of their regular "boong bashings".

The racist NT police call Aboriginals "boong" or "boongs" because that is the sound they make when they run them over in their police vehicles.

See also for Kumanjaji Walker in Hoser (2020).

MENETIA (MENETIA) ANINDILYAKWA SP. NOV.

LSIDurn:lsid:zoobank.org:act:958B287A-4E91-47A9-AEDB-7D3E0E43F51E

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen number R38402 collected from Groote Eylandt, Gulf of Carpentaria, Northern Territory, Australia, Latitude 13.83442 S., Longitude 136.5133 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Museum and Art Gallery of the Northern Territory, Darwin, Northern Territory, Australia, specimen numbers R38403 and R33713 collected from Groote Eylandt, Gulf of Carpentaria, Northern Territory, Australia, Latitude 13.83442 S., Longitude 136.5133 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However, published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of

morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. langdoni sp. nov. is a species apparently confined to the Kakadu National Park escarpment and associated hilly areas to the south, extending almost to the Tanami Desert to the south-west. It is morphologically similar to *M. anindilyakwa* sp. nov. from Groote Eylandt in the Gulf of Carpentaria and so it is also described within this formal description of *M. anindilyakwa* sp. nov..

Notable is that *M. langdoni* sp. nov. is not known from the Northern Territory coast immediately adjacent to Groote Eylandt. *M. langdoni* sp. nov. is readily separated from the other species in the *M. greyii* species complex by having 22 midbody rows, a very light dorsum, a very thick black stripe on the flank, being thick along the entire side of the flank and scattered large spots on the back.

The stripe on the flank has a well-defined border on the upper edge (on the dorso-lateral edge), where it is prominent because the dorsum lightens markedly at the outer edge. On the lower edge of the dark flank line, is a thin well-defined immaculate white line, bounded by a thin black line underneath, below which is the immaculate white of the far lower flank and belly.

The light brown dorsum has scattered blackish spots, which are sparse anteriorly and become more prevalent towards the tail and remaining moderately spaced on the anterior end of the upper surface of the tail. The spots are rectangular shaped, the longer edge being on the snout-tail edge, rather than crossways. The black line of the flank continues onto the lateral edges of the tail, where it remains distinct for most of the length of the tail. The latter half of the upper surface of the tail has no obvious blackish flecks or markings and is of the same colour as the upper surface of the dorsum.

The upper surfaces of the limbs are marked blackish on the medial line and light brown on the sides.

M. langdoni sp. nov. is depicted in life in Horner (1992) on page 119 in Fig. 105.

M. anindilyakwa sp. nov. is diagnosed as for *M. langdoni* sp. nov., save the following: It is readily separated from that species by having 20 mid-body rows (not 22) and a thinner black stripe on the flank as well as by having a significant number of indistinct flecks on the upper surface of the dorsum.

The eleven species in the *M. greyii* species complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skins within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus* subgen. nov.); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. anindilyakwa* sp. nov. is known only from Groote Eylandt in the Gulf of Carpentaria and is presumed to be endemic to the island.

Etymology: *M. anindilyakwa* sp. nov. is named in recognition of the Anindilyakwa people, being the original native Australian inhabitants of Groote Eylandt in the Gulf of Carpentaria. The spelling of the species name should not be altered by any first reviser.

MENETIA (MENETIA) YIDNINJI SP. NOV.

LSIDurn:lsid:zoobank.org:act:B2087ACA-1481-41F9-937D-9328E6230D51

Holotype: A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.113828 collected from the south-west side of Chillagoe, Queensland, Australia, Latitude -17.15 S., Longitude 144.516 E. This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J31228 collected from Chillagoe, Queensland, Australia, Latitude -17.15 S., Longitude 144.516667 E.

Diagnosis: Until now, *Menetia greyii* Gray, 1845 has been treated as a single pan Australian species with a distribution extending from east coast to west coast of continental Australia, as well as north and south coasts, occupying pretty much the entire continental landmass except for the coldest and wettest parts of the south and east, including Tasmania, as well as a tiny section of far south-west, Western Australia.

However published molecular data, including Adams *et al.* (2003) have confirmed that the putative taxon is a complex of morphologically similar species.

Besides the nominate form, with a type locality of "Western Australia", but believed to be of the form found in most of the southern two-thirds of that state, two other forms have also been named previously as species.

These are *M. reidi* McCooey, 1895 with a type locality of Dubbo, New South Wales, and being of the form found in most of the Murray/Darling basin of New South Wales and southern Queensland as well as *M. microscincus* Wells and Wellington, 1985 with a type locality of Kangaroo Island, South Australia and being of the form from the Eyre Peninsula, south-east South Australia and nearby parts of north-east Victoria and far south-west New South Wales.

Both are herein recognized as valid species.

Eight other divergent forms are formally named within this paper as detailed in the preceding formal description of *M. tanyadayae* sp. nov. which is relied upon explicitly as part of this formal description.

M. yidinji sp. nov. is a species known only from the lower Cape York area of far north Queensland, generally west of the wetter parts of the Great Dividing Range in the northern wet tropics.

M. yidinji sp. nov. is separated from the other species in the *M. greyii* species complex by the following unique combination of characters:

A dusty brown coloured dorsum and similar on the sides, with semi-distinct scattered dark flecks of irregular, but generally circular shape. This means that the dark side band is not distinct, being of similar colour to the dorsum and therefore with an

indistinct upper border.

On the lower part of the flank, the dark fades to brown, but at the far bottom of the lower flank and where the colour is light brown, there is a well-defined and thin white line, sometimes broken with brown and also without border. The upper labials (front and back) are immaculate white and without etching or bars. The rest of the side of the head is dark in colour, this being an artefact of heavy peppering on white.

Upper surfaces of the limbs are dark grey brown, with light edges on the scales, but otherwise no obvious markings. The tail is a light brown on top, being significantly lighter in colour than the body.

There are 22 midbody rows.

M. yidinji sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/136993916>

The eleven species in the *M. greyii* species complex are separated from all others in the genus *Menetia* Gray, 1845 *sensu lato* by the following unique combination of characters:

The interparietal is fused with the frontoparietal to form a single shield, distinct from the small interparietal. The second supraciliary is much larger than the first, contacts the prefrontal and separates the first supraciliary from the first supraocular. The two large and elongated supraoculars are distinctively oblique and the first is nearly three times longer than wide.

There is one presubocular, versus 2 in some of the other species. There is a dark stripe on the upper flank, with an ill-defined to well-defined pale stripe below, at least in the anterior part of the body.

12-23 lamellae under the fourth toe; 20-24 midbody rows.

Skinks within the genus *Menetia* Gray, 1845 are separated from all other Australian skinks by the following unique combination of characters: Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and usually fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.*); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: *M. yidinji* sp. nov. is a species known only from the lower Cape York area of far north Queensland, generally west of the wetter parts of the Great Dividing Range in the northern wet tropics.

Etymology: *M. yidinji* sp. nov. is named in recognition of the Yidinji peoples, being one of the largest groups of indigenous Australians from the region where this species occurs in far north-east Queensland, generally west of Cairns in Queensland, Australia. The spelling of the species name should not be emended by any first reviser.

PYGMAESCINCUS TIMLOWI GEYNYON SUBSP. NOV.

LSIDDurn:lsid:zoobank.org:act:DC093DB9-3770-4F9B-9027-3BD82FFF2B56

Holotype: A preserved specimen at the Queensland, Museum, Brisbane, Queensland, Australia, specimen number J59546 collected from the Inglewood State Forest, Queensland, Australia, Latitude -28.334167 S., Longitude 151.143056 E. This government-owned facility allows access to its holdings.

Paratype: Two preserved specimens at the Queensland, Museum, Brisbane, Queensland, Australia, being specimen number J62658 collected from the Eena State Forest, Queensland, Australia, Latitude -28.338889 S., Longitude 150.855278 E. and specimen number J66815 collected from "State Forest 189" via Millmerran, Queensland, Australia, Latitude -28.083056 S., Longitude 150.9575 E.

Diagnosis: The subspecies *Pygmaescincus timlowi geynyon subsp. nov.* occurs near the New South Wales and Queensland border near the coast in far southern Queensland. Nominate *P. timlowi* (Ingram, 1977), with a type locality of 80 km north-west of

Marlborough, Queensland, Australia, occurs further north in mid-eastern Queensland.

Pygmaescincus timlowi geynyon subsp. nov. is most readily separated from the nominate subspecies by colouration, being a very dark chocolate brown on the dorsum, versus dark brown in the nominate form. The tiny dark and light flecks that are prominent on the dorsum in the nominate form are not so in *P. timlowi geynyon subsp. nov.*. The upper surfaces of the hind limbs in *P. timlowi geynyon subsp. nov.* are blackish in colour with scattered well-defined small white spots. By contrast, the upper surfaces of the hind limbs in nominate *P. timlowi timlowi* are a light whitish-grey colour, over which are smallish dark or light blotches.

The dark stripe on the flank that is reasonably distinct in *P. timlowi timlowi* is indistinct in *P. timlowi geynyon subsp. nov.*. Dark barring of the white upper labials in *P. timlowi timlowi* is thick (at the anterior edge), versus a thin etching only in *P. timlowi geynyon subsp. nov.*

P. timlowi geynyon subsp. nov. in life is depicted online at:

<https://www.inaturalist.org/observations/155993255>

The nominate form of *P. timlowi timlowi* (Ingram, 1977) is depicted online at:

<https://www.inaturalist.org/observations/161522965>

P. timlowi of both subspecies are separated from the other two species within the genus *Pygmaescincus* Couper and Hoskin, 2014 by the presence of a single pretemporal scale, versus two in the other two species, both being from north Queensland. Those species are *P. koshtlandae* (Greer, 1991) and *P. sadlieri* (Greer, 1991).

Skinks of the genus *Pygmaescincus* Couper and Hoskin, 2014, formerly treated as being within *Menetia* Gray, 1845, are separated from that genus by the fact that the interparietal scale is distinct and not fused to the fronto-parietals, versus the opposite condition in to at least some degree in all *Menetia*.

Both *Menetia* and *Pygmaescincus* are separated from all other Australian skinks by the following unique combination of characters:

Tiny lizards, characterised by short limbs that fail to overlap by at least several rows when adpressed; fingers four and toes five; no supranasals; parietal shields are in contact behind the interparietal and may or may not be fused to it; prefrontals are large and usually narrowly separated, but sometimes in contact; lower eyelid immovable, fixed above to form a permanent transparent spectacle; ear opening is small but distinct (absent in some members of the subgenus *Pertenuisscincus subgen. nov.* being within *Menetia*); preanals are slightly enlarged (modified from Cogger 2014).

Distribution: The subspecies *P. timlowi geynyon subsp. nov.* occurs near the New South Wales and Queensland border near the coast in far southern Queensland. Nominate *P. timlowi* (Ingram, 1977), with a type locality of 80 km north-west of Marlborough, Queensland, Australia, occurs further north in mid-eastern Queensland.

Etymology: *P. timlowi geynyon subsp. nov.* is named in recognition of the Geynyon people, sometimes also written as Keinjan, being the original (Aboriginal) inhabitants of the region this species occurs. The spelling of the species name should not be emended by any first reviser.

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CONFLICT OF INTEREST - NONE.

Three new gecko species within the Australian *Underwoodisaurus milii* species complex (Carphodactylidae).

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ABSTRACT

Hoser (2016) in a major revision of the Australian Carphodactylidae divided the putative species complex generally known as the Barking Gecko or *Underwoodisaurus milii* (Bory de Saint-Vincent, 1825) into a total of six defined species, two being formally named for the first time.

Three other divergent forms were not formally named and these are formally identified and named in this paper in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999). These are *U. wellsii* sp. nov. from the northern extension of the Flinders Ranges in South Australia, *U. wellingtoni* sp. nov. from central Australia in the Macdonnell Ranges and *U. dorseyi* sp. nov. from south-east Queensland.

Keywords: Taxonomy; nomenclature; gecko; thick-tailed gecko; Carphodactylidae; Australia; *Underwoodisaurus*; *milii*; *mensforthi*; *asper*; *martinekae*; *perthensis*; *husbandi*; *seorsus*; new species; *wellsii*; *wellingtoni*; *dorseyi*.

INTRODUCTION

Hoser (2016) in a major revision of the Australian Carphodactylidae divided the putative species complex generally known as the Barking Gecko or *Underwoodisaurus milii* (Bory de Saint-Vincent, 1825) into a total of six well defined species, two being formally named for the first time.

Three other allopatric and divergent forms were not formally named due to the lack of either molecular data, specimens to examine, or both.

Since 2016 further specimens of these three populations have been inspected and it has been determined to name them within this paper as new species.

As mentioned in the abstract, these are *U. wellsii* sp. nov. from the northern extension of the Flinders Ranges in South Australia, *U. wellingtoni* sp. nov. from central Australia in the Macdonnell Ranges and *U. dorseyi* sp. nov. from south-east Queensland.

In terms of the population from the north Flinders Ranges in South Australia, Oliver and Bauer (2011) provided molecular evidence of species-level divergence of this population from all others sampled by them in their paper.

There has not been an available name for this population and so it is formally named herein as *U. wellsii* sp. nov..

The centralian population of putative *U. milii* has long been known to be divergent and isolated from all others further south, west or east. It appears to be confined to rocky parts of the Macdonnell Ranges.

Specimens recently examined from this area have shown

consistent morphological differences from those further south.

In terms of the South-east Queensland specimens, clearly most similar to *U. husbandi* Wells and Wellington, 1984 they are morphologically divergent from them and separated near the NSW / Qld border by more than 100 km, this gap not being an artefact of an absence of collection, but rather of specimens.

As the south-east Queensland population appears to be evolving separately, it makes sense for it to also be formally named as a new species.

MATERIALS AND METHODS

Inspected were live and dead specimens from across the range of the putative species *Underwoodisaurus milii sensu lato* as generally defined (*sensu* Cogger 2014), predating the publication of Hoser (2016).

Obviously the emphasis of this paper were specimens from south-east Queensland, central Australia and the northern Flinders Ranges and with respect to those taxa formally recognized and defined in Hoser (2016).

All relevant literature was reviewed as well.

Publications relevant to the ultimate taxonomic conclusions within this paper included all those cited and listed by Hoser (2016) and these are not re-cited here to save space.

There have been no significant publications regarding the taxonomy of this species complex since the publication of Hoser (2016).

Hoser (2016) remains available as hard copy as of 2023 and is also available as an identical pdf file for free download at: <http://www.smuggled.com/issue-32-pages-3-25.pdf>

RESULTS

As already inferred, inspection of specimens yielded consistent morphological differences between populations and so the three flagged species are formally named herein.

While there is no molecular data supporting the designation of the south-east Queensland or Centralian populations as species, (conversely there is none refuting the proposition), both populations are separated from their nearest relatives by uninhabitable (by them) zones of known antiquity and affecting similarly constrained species groups, enabling speciation to have occurred.

This is why there has been no hesitation in formally identifying the two relevant populations as full species.

The Centralian population is separated by sand dune habitat and black soil to the south from all other populations within the *U. milii* complex.

Competing gecko species within the Carphodactylidae occur there.

The south-east Queensland population appears to be separated from that in northern New South Wales by the Border Ranges biogeographical barrier, with a gap between the north and south population being about 100 km in a straight line.

That gap appears to be artefact of absence of lizards as opposed to absence of collection, because it is within a heavily populated (by people) region and is an area heavily collected by herpetologists and museums. It is a relatively rock free upland zone south of the NSW and Queensland border.

The northern Flinders Ranges population was flagged as a distinct species by the molecular data of Oliver and Bauer (2011), but as already mentioned, formal description was deferred pending further material to be inspected.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (Ride *et al.* 1999 and ICZN 2012).

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 2 December 2022, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

Unless otherwise stated explicitly, colour descriptions apply to living adult male specimens of generally good health and not under any form of stress by means such as excessive cool, heat, dehydration or abnormal skin reaction to chemical or other input.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within each formal description and does not rely on material within publications not explicitly cited herein.

In the unlikely event any "first reviser" seeks to merge two or more newly named taxa into one, then the name to be retained is that which is first by page priority as listed in the abstract keywords.

CONSERVATION

Delays in recognition of these species and subspecies could jeopardise the long-term survival of the taxa as outlined by Hoser (2019a, 2019b) and sources cited therein.

Also refer to the relevant comments within Hoser (1989, 1991, 1993, 1996 and 2007).

Therefore attempts by taxonomic vandals like the Wolfgang

Wüster gang via Kaiser (2012a, 2012b, 2013, 2014a, 2014b) and Kaiser *et al.* (2013) (as frequently amended and embellished, e.g. Rhodin *et al.* 2015, Thiele *et al.* 2020, Hammer and Thiele 2021) to unlawfully suppress the recognition of these taxa on the basis they have a personal dislike for the person who formally named them should be resisted (e.g. Ceriaco *et al.* 2023, Cogger 2014, Dubois *et al.* 2019, Mosyakin 2022 and Wellington 2015). Claims by the Wüster gang against this paper and the descriptions herein will no doubt be no different to those the gang have made previously, all of which were discredited long ago as outlined by Ceriaco *et al.* (2023), Cogger (2014), Cotton (2014), Dubois *et al.* (2019), Hawkeswood (2021), Hoser, (2007a-b, 2009, 2012a, 2012b, 2013, 2015a-f, 2019a, 2019b), ICZN (1991, 2001, 2012, 2021), Mosyakin (2022), Wellington (2015) and sources cited therein.

Some material within descriptions is repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

UNDERWOODISAURUS WELLSI SP. NOV.

LSIDurn:lsid:zoobank.org:act:121F2100-E236-4D8A-ABC8-ECD96BB0FB75

Holotype: A preserved specimen at the South Australian Museum, Adelaide South Australia, Australia, specimen number R53051 collected from "site 5" at a Magnesite Mine, 20 km south-east of the Leigh Creek township in South Australia, Australia, Latitude -30.4283 S., Longitude 8.3106 E.

This government-owned facility allows access to its holdings.

Paratypes: Three preserved specimens at the South Australian Museum, Adelaide South Australia, Australia, specimen number R53044 collected from "site 6" at a Magnesite Mine, 20 km south-east of the Leigh Creek township in South Australia, Australia, Latitude -30.4367 S., Longitude 138.3653 E.; specimen number R28099 collected from 5 km north of Copley, South Australia, Australia, Latitude -30.50 S., Longitude 138.42 E. and specimen number R66547 collected from 17.8 km east of Mulgaria Homestead, South Australia, Australia, Latitude -30.0942 S., Longitude 137.7489 E.

Diagnosis: *Underwoodisaurus wellsi* sp. nov. is separated from the other six species (and one subspecies) in the *U. milii* species complex as described and diagnosed by Hoser (2016) at pages 16 and 17 under the heading "*UNDERWOODISAURUS MILII* (BORY DE SAINT-VINCENT, 1825)", as well as *U. wellingtoni* sp. nov. and *U. dorsei* sp. nov. as described in this paper, by the following combination of characters: The dorsum is a medium purplish brown to brown in colour, with minimal yellow spotting. There is dull indistinct spotting on the front dorsum of the head, sides and across the back of the head. Between the forelimbs on the dorsum is a thick bold yellow cross-band, sometimes broken at the midline. Behind this are two rows of large dots forming bands across the body and a third across the pelvis, which also runs onto the upper hind limbs. The first such band on the upper surface of the tail is bound by black posteriorly. There are either very few, or no scattered yellow spots on the body other than the bands as mentioned already and this is in stark contrast to most other species in the complex which have scattered yellow spots across the dorsum which are more-or-less evenly spread (e.g. as seen in *U. husbandi* Wells and Wellington, 1984 or *U. perthensis* Hoser, 2016), or a greater number of dorsal bands formed by the yellow spots as seen for example in *U. milii* (Shark Bay, WA form), which typically has five bands on the dorsum formed by scattered yellow spots, excluding the band across the pelvis. Upper surfaces of the legs are purplish-pink and spotted with bold medium-sized yellow spots. *Underwoodisaurus* Wermuth, 1965 is separated from *Uvidicolus* Oliver and Bauer, 2011, this latter genus being the totality of the subtribe *Uvidicolina* Hoser, 2016 as defined by Hoser (2016) by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus*.

The species within the tribe Nephruini Hoser, 2016 are separated from all other geckoes in the family Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus now consists of nine defined species and one subspecies.

U. wellsii sp. nov. is depicted in life online at: <https://www.inaturalist.org/observations/156374721>

Distribution: *U. wellsii* sp. nov. is believed to be confined to the northern Flinders Ranges, and adjacent areas in northern South Australia, Australia.

Etymology: *Underwoodisaurus wellsii* sp. nov. is named in honour of pioneering Australian herpetologist Richard Wells of Drake, New South Wales, in recognition of a lifetime's work in Australian herpetology, including sensible generic-level classifications of most of Australia's herpetofauna including as published by Wells and Wellington (1984, 1985).

UNDERWOODISAURUS WELLINGTONI SP. NOV.

LSIDurn:lsid:zoobank.org:act:E18B19A1-7971-4A22-BED1-9074773F7454

Holotype: A preserved specimen at the Museum and Art Gallery of the Northern Territory, Australia, specimen number R37527, collected from Owen Springs Reserve, south-west of Alice Springs, Central Australia, Northern Territory, Australia, Latitude -23.84966 S., Longitude 133.49124 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Three preserved specimens at the Museum and Art Gallery of the Northern Territory, Australia, specimen number R34320, collected from Owen Springs Station, south-west of Alice Springs, Central Australia, Northern Territory, Australia, Latitude -23.883 S., Longitude 133.55 E., specimen number R15281 collected from 1km west of the Junction of Larapinta and Nanajird Drives, Alice Springs, Northern Territory, Australia, Latitude -23.7 S., Longitude 133.867 E. and specimen number R37320 collected from Simpsons Gap National Park, Central Australia, Northern Territory, Australia, Latitude -23.72527 S., Longitude 133.73472 E.

2/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R18717 collected from north of Rodinga, Northern Territory, Australia, Latitude -24.0583 S., Longitude 134.0417 E.

Diagnosis: *Underwoodisaurus wellingtoni* sp. nov. is separated from the other six species (and one subspecies) in the *U. millii* species complex as described and diagnosed by Hoser (2016) at pages 16 and 17 under the heading "UNDERWOODISAURUS MILII (BORY DE SAINT-VINCENT, 1825)", as well as *U. wellsii* sp. nov. and *U. dorseyi* sp. nov. as described in this paper, by the following combination of characters:

The yellow spotting on the back is in the form of light yellow to cream in colour, as opposed to being bright yellow, with the spots being enlarged and at times forming thick bands on the body, especially at the back of the head and between the forelimbs, where the light band is wide and distinct and without any darker peppering, spots or incursions. White bands on the original tail are exceptionally wide, but often with darker interiors or incursions and the yellow spots on the legs join to form numerous elongated and/or irregularly shaped blotches. There are also extensive areas of yellow on the sides of the head formed by large blotches of yellow that may or may not be joined. Spots on the dorsum sometimes join in a linear manner (running from anterior to posterior) forming short lines running down the body, this usually occurring at the rear of the body.

Dorsum is typically coloured a dark purple-brown colour or

otherwise a light brown colour.

Between the fore and hind limbs, spots on the dorsum often cluster to form two semi-distinct and wide crossbands and are invariably more dense at these parts than between, where there is little or no spotting. The mid to lower flanks have numerous fairly evenly spaced white spots on a lighter brownish background, not strictly corresponding to the bands above, but rather being more continuous along the flank.

Underwoodisaurus Wermuth, 1965 is separated from *Uvidicolus* Oliver and Bauer, 2011, this latter genus being the totality of the subtribe Uvidicolina Hoser, 2016 as defined by Hoser (2016) by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus*.

The species within the tribe Nephruini Hoser, 2016 are separated from all other geckoes in the family Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus now consists of nine defined species and one subspecies.

Distribution: *U. wellingtoni* sp. nov. is confined to the Macdonnell Ranges in Central Australia and suitable habitats immediately to the south.

Etymology: *U. wellingtoni* sp. nov. is named in honour of herpetologist Cliff Ross Wellington, of Ramornie, New South Wales, Australia in recognition of a lifetime's services to herpetology, including the writing of numerous species recovery programs for rare and threatened species in New South Wales, Australia and also for his ongoing vigilance in combating taxonomic vandalism (e.g. Wellington, 2015).

UNDERWOODISAURUS DORSEI SP. NOV.

LSIDurn:lsid:zoobank.org:act:FCE81E0F-209F-4FE9-B516-A2474F20B5FC

Holotype: A preserved specimen in the Queensland Museum, Brisbane, Queensland, Australia, specimen number J74951 collected from the Blackdown Tableland National Park, Queensland, Australia, Latitude -23.791667 S., Longitude 149.041667 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen in the Queensland Museum, Brisbane, Queensland, Australia, specimen number J78956 collected from Mount Morgan, Queensland, Australia, Latitude -23.644722 S., Longitude 150.357222 E.

Diagnosis: *Underwoodisaurus dorseyi* sp. nov. is separated from the other six species (and one subspecies) in the *U. millii* species complex as described and diagnosed by Hoser (2016) at pages 16 and 17 under the heading "UNDERWOODISAURUS MILII (BORY DE SAINT-VINCENT, 1825)", as well as *U. wellsii* sp. nov. and *U. wellingtoni* sp. nov. as described in this paper (before this description), by the following combination of characters: It is similar to *U. husbandi* Wells and Wellington, 1984 as defined in Hoser (2016), but separated from that taxon (and by extension all others in the species complex) by a lack of obvious yellow spots on the limbs, a lack of dark spots on the dorsum (unique to that species) and a lower size, density and colour intensity of yellow spots forming a crossband pattern on the dorsum. Any yellow on the head of *U. dorseyi* sp. nov. is also faded and relatively indistinct.

Some specimens of *U. dorseyi* sp. nov. have light brown spots in place of the equivalent dark spots seen in *U. husbandi* on the dorsum.

Both *U. dorseyi* sp. nov. and *U. husbandi* are characterised by a

distinctively black tail (original tail), without greying as seen in other species in the complex and particularly strongly contrasting white bands, which may or may not have darker infusions.

U. dorsei sp. nov. in life is depicted online at:

<https://www.inaturalist.org/observations/8651979>

U. husbandi is depicted in life in Swan *et al.* (2022) on page 53 and online at:

<https://www.inaturalist.org/observations/143334947>

Underwoodisaurus Wermuth, 1965 is separated from *Uvidicolus* Oliver and Bauer, 2011, this latter genus being the totality of the subtribe *Uvidicolina* Hoser, 2016 as defined by Hoser (2016) by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus*.

The species within the tribe Nephruini Hoser, 2016 are separated from all other geckoes in the family Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

The genus *Underwoodisaurus* now consists of nine defined species, all commonly known as Thick-tailed geckoes and one subspecies.

Distribution: *U. dorsei* sp. nov. is found in most of south-east Queensland, Australia in a region generally bound by Rockhampton in the north-east, the Gold Coast in the south, Bogantungan in the north-west and Wallumbilla in the south-west.

Etymology: *U. dorsei* sp. nov. is named in honour of wildlife displayer and herpetologist Marc Dorse of Toowoomba, Queensland, Australia, in recognition of his contributions to wildlife conservation over many decades. He was also the first person in the world to breed the rare and potentially endangered Manning River Turtle *Wollumbinia purvisi* (Wells and Wellington, 1985).

The genus name *Myuchelys* Thomson and Georges, 2009 is an illegally coined junior synonym of *Wollumbinia* Wells, 2007, that was created in an act of egregious taxonomic vandalism and therefore should not be used as correct under any circumstance. It is not the correct ICZN name (ICZN 2021).

It is also worth noting that as Thomson and Georges (2009) was only published in the online only journal "Zootaxa" and not in hard copies in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) at the time and predating a 2012 amendment to the Code allowing for online only publications, the name *Myuchelys* is simply unavailable for zoological nomenclature.

Online publication was only allowed by the ICZN post-dating year 2012 (ICZN 2012).

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CONFLICT OF INTEREST

None.

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Hiding in plain sight: Yet ten more new species and five new subspecies of skink lizard from mainly southern Australia (Scincidae: *Liopholis* and *Flamoscincus*).

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ABSTRACT

In the wake of numerous new species of skink being described from south-east Australia in the past five years, new species and subspecies within the genera *Liopholis* Fitzinger, 1843 and *Flamoscincus* Wells and Wellington, 1984 are formally named in this paper.

The putative species *Liopholis montana* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality: Mount Gingera, Brindabella Ranges, Australian Capital Territory (ACT), Australia, Latitude 35.35 S., Longitude 148.46 E., has long been known to consist of at least two deeply divergent lineages separated by 2.4-4.1 MYA (Chapple *et al.* 2005).

This paper formally identifies and names as a new species the divergent population from far southern New South Wales and North-east Victoria as a new species, *Liopholis adelynhoserae* sp. nov.. The south-western outlier population, currently known only from the Wombat State Forest between Bacchus Marsh and Ballarat in Victoria (upper Lerderderg River drainage, mainly on the rocky southern side) is also formally named as a new subspecies of the same species, being *L. adelynhoserae divergens* subsp. nov..

L. guthega (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality: Charlotte Pass, New South Wales, Australia, Latitude 36.26 S., Longitude 148.19 E, is split, with the Bogong High Plains (Victoria) population formally named as a subspecies, *L. guthega warkwoolowlerensis*.

A western outlier population of putative *L. compressicauda* Quoy and Gaimard, 1824, commonly treated as *E. whitii* (LaCépède, 1804) found mainly west of the Great Dividing Range in central/north New South Wales, are also formally named herein as *L. jackyhoserae* sp. nov. based on morphological and molecular divergence.

The morphologically and genetically divergent South Australian population of *Liopholis margaretae* (Storr, 1968), type locality: Palm Valley, Northern Territory, Australia, Latitude 24.03 S., Longitude 132.42 E. is formally named as a new species *L. faaaark* sp. nov..

The northernmost outlier population of *Liopholis personata* (Storr, 1968), type locality: Wilpena Gorge, South Australia, Australia, Latitude -31.33 S., Longitude 138.34 E, from the Gammon Ranges area, including Freeling Heights, South Australia, Australia, (Latitude -30.14 S., Longitude 139.23 E.) is formally named as a new subspecies *L. personata remota* sp. nov..

A population previously ascribed to either *L. margaretae* or *L. modesta* (Storr, 1968), found in south-west New South Wales, is herein formally named as a new species *L. shanescarffi* sp. nov..

Putative species within the putative genus *Flamoscincus* Wells and Wellington, 1984 of arid Australia for which regional variation had been previously noted had specimens inspected from across their known distributions. Diagnosable unnamed forms have been herein formally named as new species and subspecies.

These are four new species associated with *F. inornata* (Rosen, 1905) and a new species and two subspecies associated with *F. striata* (Sternfeld, 1919).

South-west Australian "*Egernia pulchra* Werner, 1910" is split three ways with all being assigned to a new genus and a new species formally named as *F. perthensis* sp. nov..

Keywords: Taxonomy; nomenclature; Australia; New South Wales; Victoria; ACT; skink; Brindabella Ranges; Wombat State Forest; Bogong High Plain; *Egernia*; *Liopholis*; *Flamoscincus*; *montana*; *guthega*; *whitii*; *compressicauda*; *coplandi*; *margaretae*; *personata*; *striata*; *inornata*; *kintorei*; *webberi*; *pulchra*; *longicauda*; new genus; *Pseudoegernia*; new species; *adelynhoserae*; *jackyhoserae*; *faaaark*; *shanescarffi*; *arrernteorum*; *pitjantjatjaraorum*; *yamatjiorum*; *wiranguorum*; *kaprunorum*; *perthensis*; new subspecies; *divergans*; *warkwoolowlerensis*; *remota*; *waramunguorum*; *yamajiorum*.

INTRODUCTION

For decades it has been known that species diversity in Australia's lizards has been severely under-estimated (Wells and Wellington, 1983, 1985).

To 10 August 2023, I (Raymond Hoser) have added more than 230 species of reptiles to the Australian total over the preceding two and a half decades, the bulk of these being lizards, many being skinks and yet more forms await formal description.

To get an idea of the actual diversity of reptiles in Australia, one may see the complete list of relevant papers from the last decade on "www.zoobank.org", or as examples, see Hoser (2007), Hoser (2018a) or Hoser (2023) and sources cited therein.

Hawkeswood (2021) also provides a list of relevant newly named Australian taxa to that date.

Included among the obviously unnamed species within Australia's herpetofauna, has been the population of putative *Liopholis montana* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality: Mount Gingera, Brindabella Ranges, Australian Capital Territory (ACT), Australia, Latitude 35.35 S., Longitude 148.46 E. from south of the type locality in a region encompassing the snowy Mountains and nearby north-east Victoria.

L. montana has long been known to consist of at least two deeply divergent lineages (Chapple *et al.* 2005), having diverged between 2.4 to 4.1 MYA (Chapple 2005).

Therefore the putative species was inspected more closely from across the known distribution with a view to formally name the southern population (hitherto unnamed) as a new species in accordance with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999), assuming it was identifiable as such, by means of breeding isolation from the type population and consistent morphological differences.

It should be noted that similar biogeographical breaks between sibling species and subspecies found in the Brindabella Ranges to the north and Snowy Mountains to the south have been noted in other herpetofauna including within the genera *Oxyphryne* Hoser, 2020 (Hoser 2020b; Wells and Wellington 1985) (a frog genus) and *Rankinia* Wells and Wellington, 1984 (Hoser 2019c) (a lizard genus), so the concept of a similar species-level split in the *Liopholis montana* complex was not unexpected.

Chapple *et al.* (2005) also flagged two divergent populations of *L. guthega* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality: Charlotte Pass, New South Wales, Australia, Latitude 36.26 S., Longitude 148.19 E, with the Bogong High Plains (Victoria) population being more than 1 MYA divergent. Specimens from relevant locations were inspected to see if consistent identifiable features diverged, allowing subspecies-level division.

It has been noted that the two populations are allopatric and evolving as separate species.

The south-western outlier population, of putative *L. montana* currently known only from the Wombat State Forest between Bacchus Marsh and Ballarat in Victoria (upper Lerderderg River drainage, mainly on the rocky southern side) was also investigated to see if it required taxonomic recognition.

Chapple *et al.* (2005) also flagged one or two divergent populations of northern "Egernia whitii", now generally regarded as *Liopholis compressicauda* Quoy and Gaimard, 1824, *sensu* Hoser (2018a) as significantly divergent with an estimated divergence in the vicinity of at least 2 MYA.

These were from the west of the Great Dividing Range in central and central northern, New South Wales, with an intrusion along the Hunter Valley dry zone, east of the Great Dividing Range, but away from the coast, as well as a possible second outlier population from near Coonabarabran in north-west New South Wales.

These were also inspected along with other specimens from the *L. whitii* (LaCépède, 1804) complex across their known distribution to determine if they warranted species or subspecies level recognition.

The South Australian population of *Liopholis margaretae* (Storr, 1968), type locality: Palm Valley, Northern Territory, Australia, Latitude 24.03 S., Longitude 132.42 E. has long been known to be divergent from the same putative species from the Northern Territory (type form) (Storr, 1968, Chapple *et al.* 2005), and again specimens were inspected to see if they could be separated at either the species or subspecies level.

The northernmost outlier population of *Liopholis personata* (Storr, 1968), type locality: Wilpena Gorge, South Australia, Australia, Latitude -31.33 S., Longitude 138.34 E, from Freeling Heights, South Australia, Australia, Latitude -30.14 S., Longitude 139.23 E. part of the population from the Gammon Ranges, north of the main Flinders Ranges escarpment shown by Chapple *et al.* (2005) to be divergent from the rest was inspected to confirm whether or not it could be separated at the subspecies level, based on divergence found by Chapple *et al.* (2005).

A population previously ascribed to either *L. margaretae* or *L. modesta* (Storr, 1968) in the past, occurring in from south-west New South Wales was inspected to see where it would be best placed. Putative species within the putative genus *Flamoscincus* Wells and Wellington, 1984 for which regional variation had been previously noted by Storr (1968) and Wells and Wellington (1985) had specimens inspected from across their known distributions.

This was to see if there were any diagnosable unnamed forms worthy of recognition as species or subspecies.

The candidate forms included potential species and subspecies associated with putative *F. inornata* (Rosen, 1905) and *F. striata* (Sternfeld, 1919).

Hoser (2018a) also previously described two subspecies of *F. kintorei* (Stirling and Zeitz, 1893) from central Australia, for which molecular divergence had already been established.

The enigmatic "Egernia pulchra Werner, 1910" for which two described forms, as subspecies are recognized to date was inspected with a view to ascertaining genus-level placement (in light of the molecular results of

Chapple and Scott Keogh, 2004) and species-level placements of populations in light of the available distributional data (based on museum specimens to the present date) and the previous morphological analysis of the putative species by Storr (1968).

MATERIALS AND METHODS

Specimens were inspected from across the putative range for the *L. montana* complex, this being areas from the southern highlands in southern New South Wales to the higher parts of central Victoria. Consistent differences were noted and readily matched with relevant species or subspecies.

Relevant literature as cited below was also consulted to confirm the absence of any possible synonym forms or names to the potential southern taxa.

The same methodology was done with respect of putative *L. guthega* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality: Charlotte Pass, New South Wales, Australia, Latitude 36.26 S., Longitude 148.19 E, which Chapple *et al.* (2005) found had a divergence between the nominate form and specimens from the Bogong High Plains (Victoria) of 1.1 to 1.7 MYA.

The same methodology was also done with respect of the *L. whitii* complex *sensu* Chapple *et al.* (2005) and Hoser (2018a).

In terms of the previously named putative species within *Flamoscincus* Wells and Wellington, 1984, all taxa within that genus as defined by Hoser (2018a) were audited in the same way as the above-named taxa within *Liopholis*.

The relevant references generally relevant to putative species within *Liopholis* and *Flamoscincus* were audited to help confirm the taxonomy of the relevant forms and regional populations, potential synonyms available names for various forms and other relevant matters.

Literature relevant to the taxonomic and nomenclatural decisions herein (below) included Atkins *et al.* (2020), Boulenger (1887), Chapple and Scott Keogh (2004), Chapple *et al.* (2005, 2008), Cogger (2014), Cogger *et al.* (1983), Condon (1941), Couper *et al.* (2006), Dissanayake (2020), Donnellan *et al.* (2002), Duméril and Bibron (1839), Eldridge *et al.* (2020), Farquhar *et al.* (2021), Fitzinger (1843), Ford (1963a, 1963b), Gardner *et al.* (2008), Glauert (1969), Gray (1827, 1832, 1838), Guibé (1954), Halliwell *et al.* (2017), Henle and Osborne (1986), Hickman (1960), Horner (1992), Horton (1972a, 1972b), Hoser (1989, 2007, 2018a, 2018b, 2019, 2020a, 2020b, 2023), Hutchinson (1979), Kluge (1963a, 1963b), LaCépède (1804), Lucas and Frost (1894), Michell (1950), Oliver *et al.* (2007), Quoy and Gaimard (1824), Raine (2000), Reeder (2003), Ride *et al.* (1999), Rosen (1905), Senior *et al.* (2021), Sternfeld (1919, 1925), Stirling and Zeitz (1893), Storr

(1968, 1978), Storr *et al.* (1981), Swan *et al.* (2017, 2022), Taylor *et al.* (1993), Werner (1910), Wells and Wellington (1984, 1985), Wilson and Swan (2017, 2021) and sources cited therein.

RESULTS

The original naming and placement of the relevant species "*Egernia montana*" by Donnellan, Hutchinson, Dempsey and Osborne (2002), was in error.

The genus *Egernia* Gray, 1832 has as its type species *Tiliqua cunninghami* Gray, 1832.

These are large squat spinose lizards, very different to the medium-sized generally smooth scaled-skinks (no obvious body spines) within the genus *Liopholis* Fitzinger, 1843, within which "*Egernia montana* Donnellan, Hutchinson, Dempsey and Osborne, 2002" is best placed and generally conforms with.

Hence the placement within *Liopholis* Fitzinger, 1843 for the relevant species within this paper. This also reflects the most up-to-date generic arrangement of Hoser (2018a), that paper being the major work on all Australian skinks within the genus *Egernia sensu lato* (being those species placed in the genus by Cogger *et al.* 1983 and most relevant authors predating them and postdating them, 40 years either side of 1983).

Lygosoma moniligera Duméril and Bibron, 1839, (a subjective synonym of *Scincus compressicauda* Quoy and Gaimard, 1824) part of the *Scineus* [sic] *whitii* LaCépède, 1804 species complex is the type species of the genus *Liopholis* Fitzinger, 1843.

The two clades of *Liopholis montana sensu* Donnellan, Hutchinson, Dempsey and Osborne, 2002 and Chapple *et al.* (2005) diverged 2.4 to 4.1 MYA (Chapple 2005), clearly warranting species-level recognition.

As they are morphologically divergent, allopatric, being separated across a wide relatively rock-free low altitude area, I have no hesitation in formally naming them *L. adelynhoserae* sp. nov. in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

The south-western outlier population, currently known only from the Wombat State Forest between Bacchus Marsh and Ballarat in Victoria (upper Lerderderg River drainage, mainly on the rocky southern side) is also morphologically divergent from the nearest populations of putative *L. adelynhoserae* sp. nov. (and/or *L. montana*) and is therefore formally named as a new subspecies of the same species, being *L. adelynhoserae divergens* subsp. nov..

Putative *L. guthega* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality: Charlotte Pass, New South Wales, Australia, Latitude 36.26 S., Longitude 148.19 E, was found to be morphologically divergent to the Bogong High Plains (Victoria) population and combined with obvious allopatry is herein formally named as a subspecies, *L. guthega warkwoolowlerensis*.

Within *L. whitii sensu lato*, *L. whitii* clearly applies to the southern Australian populations (South Australia, Tasmania and most of Victoria, except for the far north-east of East Gippsland, Victoria), and *L. compressicauda* for the specimens previously attributed to *L. whitii* from far north-east Victoria, the Australian Capital Territory (ACT), New South Wales and far south-east Queensland, the exceptions being indicated below.

Within the New South Wales / ACT populations of putative *L. compressicauda*, the molecular data of Chapple *et al.* (2005) does not confirm or refute the taxonomic status of "*Liopholis coplandi* Wells and Wellington, 1985". I note that Donnellan *et al.* (2002) found them to be conspecific with what they identified as "*Egernia whitii*", a statement quite emphatically refuted by the molecular data of Chapple *et al.* (2005). If "*Liopholis coplandi* Wells and Wellington, 1985" is in fact conspecific with any species, it would be *L. compressicauda*, however the type form of that taxon, is significantly larger and more robust in build, (adult snout-vent length average 110 mm vs 90 mm) and diagnosable by its dorsal colour pattern, with discontinuous dark paravertebral stripes, indicating species-level divergence between both putative taxa.

In any event, "*Liopholis coplandi* Wells and Wellington, 1985" is an "eastern" New South Wales form within a clade of coastal New South Wales animals, not connected with the putative taxa from west of the Great Dividing Range in central and northern New South Wales, deemed potential candidate species at the time this paper was in preparation.

Significantly two related clades appeared to diverge from others about 2 MYA (Chapple *et al.* 2005), these being one population from the west of the Great Dividing Range in central and central northern, New South Wales, with an intrusion along the Hunter Valley dry zone, east of the Great Dividing Range, but away from the coast, as well as a second outlier population from near Coonabarabran in north-west New South Wales.

However, they are morphologically similar and herein treated as a single diagnosable species. This is formally named as *L. jackyhoserae* sp. nov..

Gongylus (Lygosoma) moniligera Duméril and Bibron, 1839 is a subjective junior synonym of *L. compressicauda* Quoy and Gaimard, 1824.

The South Australian population of *Liopholis margaretae* (Storr, 1968), type locality: Palm Valley, Northern Territory (NT), Australia, Latitude 24.03 S., Longitude 132.42 E, was found to be easily morphologically separable from the NT population, allopatrically separated by a large zone of relatively flat and unsuitable habitat known as the Amadeus flats and so is formally named as a new species *L. faaaaark* sp. nov..

In terms of the northern South Australian specimens of putative *Liopholis margaretae* (Storr, 1968), Storr (1968) effectively flagged that they may be taxonomically distinct, which is a fact that seems to have been overlooked by all herpetologists between 1968 and 2024.

In his formal description of "*Egernia margaretae*" Storr (1968) wrote:

"Geographic variation. - The two specimens from South Australia have not been used in the above description. Their snout-vent length is 99 and 62 mm. They differ from northern specimens in the very narrow separation of nasals, wider interparietal (as wide as frontal in smaller specimen), fewer supraciliaries (6), more palpebrals (11 and 13), and fewer rows of midbody scales (32 and 36). The smaller has relatively long limbs (31 and 42% of SVL) and is patternless. The larger specimen's pattern merely consists of inconspicuous black spots suggesting the outline of a laterodorsal stripe. This population is separated from the Northern Territory populations by the arid Amadeus lowlands."

Chapple *et al.* (2005) also found evidence of the two populations being different species, but did not mention this fact in the text of their paper, take any taxonomic action or flag any.

The northernmost outlier population of *Liopholis personata* (Storr, 1968), type locality: Wilpena Gorge, South Australia, Australia, Latitude -31.33 S., Longitude 138.34 E, from Freeling Heights, South Australia, Australia, Latitude -30.14 S., Longitude 139.23 E, which includes those specimens from the greater Gammon Ranges, is also morphologically divergent from the type form and so is formally named as a new subspecies *L. personata remota* sp. nov..

A population previously ascribed to either *L. margaretae* or *L. modesta* (Storr, 1968), found in south-west New South Wales, was found to be most similar to *L. modesta* from north-east New South Wales and nearby south-east Queensland, generally west of the coastal ranges. However it was sufficiently divergent to warrant being formally named as a new species *L. shanescaffi* sp. nov..

As already mentioned, putative species within the putative genus *Flamoscincus* Wells and Wellington, 1984 for which regional variation had been previously noted had specimens inspected from across their known distributions.

Diagnosable unnamed forms were identified and have been formally named as follows:

Four new species associated with *F. inornata* (Rosen, 1905) and a new species and two subspecies associated with *F. striata* (Sternfeld, 1919). These are in addition to two subspecies of *F. kintorei* (Stirling and Zeitz, 1893) formally named in Hoser (2018a). In line with various published molecular phylogenies, including Gardner *et al.* (2008) and Pyron *et al.* (2013), the genus allocation *Flamoscincus* Wells and Wellington, 1984 is clearly appropriate for the relevant species.

Likewise for the recognition of the obviously distinct species *Flamoscincus webberi* Wells and Wellington, 1984, which has been effectively ignored by publishing herpetologists in Australia, save for Hoser (2018a).

"*Egernia pulchra* Werner, 1910" as an entity, was found to be sufficiently divergent from both type species of *Liopholis* and *Flamoscincus* to warrant being placed in a genus of its own. The genus *Pseudoegernia* gen. nov. is formally named for the first time in this paper, being the only genus-level divergence from Hoser (2018a).

This placement in effect reflects the molecular results of Chapple and Scott Keogh (2004) and the morphological divergence of the relevant taxa as well as the biogeographical reality.

"*Egernia pulchra* Werner, 1910" has until now been treated as two subspecies, namely, "*Egernia pulchra* Werner, 1910" with a type locality of Torbay, Western Australia, and the more recently named "*Egernia pulchra longicauda* Ford, 1963", both most recently placed in the genus *Liopholis*, since the publication of Wells and Wellington, 1985, being the first authors to do so in the recent period.

The putative species is split three ways with all being assigned to the new genus *Pseudoegernia* gen. nov. as full species. The new species formally named, being *P. perthensis* sp. nov., is the distinctive and separated population from the Darling Range, immediately west of Perth, Western Australia.

While there is no molecular divergence information with respect of the three geographically disjunct populations of morphologically divergent putative *Pseudoegernia* gen. nov. species, other south-west Australian herpetofaunal taxa have diverged at the species-level across the same biogeographical barriers, as noted in Hoser (2020b).

P. perthensis sp. nov. is the designated type species for the new genus *Pseudoegernia* gen. nov..

NOTES RELEVANT TO THE FORMAL DESCRIPTIONS IN THIS PAPER

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal descriptions, spelling should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (ICZN).

This includes if Latinisation is wrong, apparent spelling mistakes and so on.

Any online citations within this paper, including copied emails and the like, are not as a rule cited in the references part of this paper and have the same most recent viewing and checking date of 25 January 2024 (at which time they were still online as cited).

Unless otherwise stated explicitly, colour and other descriptions apply to living adult male specimens of generally good health, as seen by day and not under any form of stress by means such as excessive cool, heat, dehydration, excessive ageing, abnormal skin or reaction to chemical or other input

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within the formal description and does not rely on material within publications not explicitly cited herein.

Formal acknowledgments of collaborators (names of people) and others who have provided valuable assistance in terms of this paper and other recent (circa last 2 decades) papers of myself are not given at the end of this and other relevant papers because members of the Wolfgang Wuster gang as detailed in Ceriaco *et al.* (2023), Cogger (2014), Cotton (2014), Dubois *et al.* (2019), Hawkeswood (2021), Hoser, (2007a-b, 2009a, 2012a, 2012b, 2013, 2015a-f, 2019a, 2019b), ICZN (1991, 2001, 2021), Mosyakin (2022), Wellington (2015) and sources cited therein, have unlawfully harassed them, including by various criminal acts including as a rule making unlawful telephone death threats and the like at strange hours (late at night), unlawful assaults at herpetological conferences, acts of theft and wilful damage to property, attacks on children and other family members, as well as militarising police and other government agents to launch unlawful

raids, including as detailed by Hawkeswood (2021) and Hoser, (2007a-b, 2009, 2012a, 2012b, 2013, 2015a-f, 2019a, 2019b). Some material within descriptions is repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended (ICZN 2012).

A SERIOUS THREAT TO THE LONG-TERM CONSERVATION OF ALL NEWLY NAMED SPECIES AND SUBSPECIES HEREIN

Delays in recognition of these species and subspecies could jeopardise the long-term survival of the taxa as outlined by Hoser (2019a, 2019b) and sources cited therein.

Also refer to the relevant comments within Hoser (1989, 1991, 1993, 1996 and 2007).

Therefore attempts by taxonomic vandals like the Wolfgang Wuster gang via Kaiser (2012a, 2012b, 2013, 2014a, 2014b) and Kaiser *et al.* (2013) (as frequently amended and embellished, e.g. Rhodin *et al.* 2015, Thiele *et al.* 2020, Hammer and Thiele 2021) to unlawfully suppress the recognition of these taxa on the basis they have a personal dislike for the person who formally named it should be resisted (e.g. Ceriaco *et al.* 2023, Cogger 2014, Dubois *et al.* 2019, Hawkeswood, 2021, Mosyakin 2022 and Wellington 2015).

Claims by the Wuster gang against this paper and the descriptions herein will no doubt be no different to those the gang have made previously, all of which were discredited long ago as outlined by Ceriaco *et al.* (2023), Cogger (2014), Cotton (2014), Dubois *et al.* (2019), Hawkeswood (2021), Hoser, (2007a-b, 2009, 2012a, 2012b, 2013, 2015a-f, 2019a, 2019b), ICZN (1991, 2001, 2021), Mosyakin (2022), Wellington (2015) and sources cited therein.

LIOPHOLIS ADELYNHOSERAE SP. NOV.

LSIDurn:lsid:zoobank.org:act:A87A2CED-A9B3-4172-908D-5A8FBF57C9F2

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number: R37809, collected from Rennix Gap, New South Wales, Australia, Latitude 36.22 S., Longitude 148.31 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number: R37812, collected from Rennix Gap, New South Wales, Australia, Latitude 36.22 S., Longitude 148.31 E.

Diagnosis: Until now the species *Liopholis adelynhoserae* sp. nov. has been treated as a southern population (being most of the distribution) of putative *Liopholis montana* (Donnellan, Hutchinson, Dempsey and Osborne, 2022), type locality: Mount Gingera, Brindabella Ranges, Australian Capital Territory (ACT), Australia, Latitude. 35.35 S., Longitude 148.46 E.

That species is herein confined to the Brindabella Ranges area of the western edge of the Australian Capital Territory (ACT) and immediately adjacent New South Wales confined to the Brindabella Ranges upland.

Liopholis adelynhoserae sp. nov. is found in the Snowy Mountains area, generally south of Rennix Gap (the high ridge area west of Lake Jindabyne), south-west through elevated and rocky parts of north-east Victoria to the higher parts of the Yarra Ranges National Park, east of Melbourne in southern central Victoria.

An outlier population from west of Melbourne, presently only known from the Wombat State Forest (upper Lerderderg River drainage, mainly on the rocky southern side) is morphologically divergent and in this paper is formally named as a subspecies, *L. adelynhoserae divergens* subsp. nov..

That population is reproductively isolated from the more eastern populations, separated by the basalt plains of Melbourne, from which the species is absent and replaced by the aggressive *L. whitii* (LaCépède, 1804), as outlined in Hoser (2018b).

The same applies in terms of potential habitat for *L. adelynhoserae* sp. nov. north of Melbourne east of the Kilmore Gap, in areas such as Kinglake, Pheasant's Nest and Kinglake West, meaning that the western population of *L. adelynhoserae divergens* subsp. nov. is separated from the eastern population of the nominate form by about 80 km or more in a straight line.

Adult *L. adelynhoserae* sp. nov. are separated from *L. montana* by having orange on the dorsum (light grey down the midline), sometimes light marone, versus dark marone or purple in *L. montana* as well as numerous light orange or brown markings or

interspaces within the dark line of the upper flank, versus not so in *L. montana*.

Any markings on the black line of the upper flank in *D. montana* are invariably white or faded to obscurity.

Upper labials of *L. montana* and *L. adelynhoserae sp. nov.* are distinctly and uniformly dark etched, versus not so in *L. adelynhoserae divergens subsp. nov.*, where dark etching is either absent or not uniform in thickness.

L. montana is a generally darker and more greyish coloured lizard, than both subspecies of *L. adelynhoserae sp. nov.*

L. adelynhoserae divergens subsp. nov. is separated from both nominate *L. adelynhoserae sp. nov.* and *L. montana* by a general lack of dark or black markings on the head anterior to the ear and the upper flanks so faded as to lack the wide blackish zone on the upper flank as seen in the other two species. The upper flank only has scattered small faded dark brown to black blotches, (usually triangular in shape) interspersed with orange-brown on the upper flank and greyish-white on the majority of the flank, on the lower two thirds.

In the other two forms (*L. montana* and nominate *L. adelynhoserae sp. nov.*) the dark zone of the upper flank is wider than the light lower part, vs. reverse in *L. adelynhoserae divergens subsp. nov.*

Juveniles and subadults of all of *L. adelynhoserae sp. nov.*, *L. montana* and *L. adelynhoserae divergens subsp. nov.* are brightly marked with white spots and markings and quite unlike the adults and the previous diagnostic information does not apply to them.

L. adelynhoserae sp. nov., *L. montana* and *L. adelynhoserae divergens subsp. nov.* as a trio are separated from all other species within *Liopholis* by the following unique combination of characters: adult snout-vent length of 110 mm, versus 90 cm for all other species in the *L. whitii* complex (excluding *L. compressicauda* (Quoy and Gaimard, 1824) from the NSW Central Coast region); smooth dorsal scales, dorsum including a light to medium greyish but ill-defined mid-lateral stripe, bounded by darker on the sides of the dorsum, forming to two orangish to purple or marone lines down either side of the back; usually, but not always a reasonably well-defined blackish line on the upper lateral surface enclosing white, orange or yellow spots or blotches, often ill defined; a normally proportioned interparietal and smooth subdigital lamellae.

Longitudinal scale rows at midbody number 31-37; scales smooth; 57-62 paravertebral scales; 19-25 subdigital lamellae under fourth toe; lamellae undivided and palms and soles smooth. Nasals separated. Prefrontals in point to broad contact, rarely separated; frontoparietals paired. Interparietal distinctly narrower than frontal, much longer than wide, separating parietals.

Each parietal bordered posteriorly by an enlarged nuchal scale and laterally by an elongate upper secondary temporal scale, this scale separated from the nuchal by a smaller tertiary temporal contacting the posterolateral corner of the parietal. Supraciliaries 7-9, usually 8. Supralabials 8, rarely 7, the sixth and seventh subocular. Subocular supralabials separated from granular scales of the eyelid by a row of small subocular scales (largely modified from Donnellan *et al.* (2002).

The morphologically similar species *L. guthaga* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), of both subspecies is separated from other species in the *L. whitii* complex by the following suite of characters: The presence of a blackish upper lateral stripe usually overlain by two or three roughly longitudinal series of light, whitish grey, cream, yellow or light orange dots. Adults with a complex back pattern similar to that of other species in the *L. whitii* complex including *L. compressicauda* (Quoy and Gaimard, 1824) and *L. coplandi* Wells and Wellington, 1985, but with only two main colours, a greyish background colour and blackish brown pattern. Further distinguished by the low numbers of subdigital lamellae (mode <20, versus >20 for *L. montana* and all others in the *L. whitii* complex) and shorter tail (<140% SVL, versus >140% SVL) (largely modified from Donnellan *et al.* 2002).

The putative taxon, *Liopholis coplandi* Wells and Wellington, 1985, is of the *L. whitii* complex as stated by Wells and Wellington in their paper. Significantly, this is confirmed by the molecular results of Chapple *et al.* (2005), who notably had molecular results for specimens from both the type locality and near Adaminaby, New South Wales, another cited location for the same taxon.

If their taxon is in fact distinct from *L. compressicauda* Quoy and Gaimard, 1824, as stated by Wells and Wellington, 1985, it is evidently most closely related to it and not either *L. montana* or *L. adelynhoserae sp. nov.*

The molecular results of Chapple *et al.* (2005), confirms that *L. coplandi* Wells and Wellington, 1985 is neither *L. montana* or *L. adelynhoserae sp. nov.*. However they do not settle the question as to whether or not it is in fact conspecific with *L. compressicauda*.

L. montana in life is depicted in Swan *et al.* (2022) on page 192 and online at:

<https://canberra.naturemapr.org/species/7770>

and

<https://www.flickr.com/photos/136643623@N03/37534007882>

L. adelynhoserae sp. nov. is depicted in life in Wilson and Swan (2021) on page 397 bottom, Brown (2014) on page 511, second from bottom on right and online at:

<https://www.flickr.com/photos/88708273@N03/52838574805/>

L. adelynhoserae divergens subsp. nov. is depicted online at: <https://www.flickr.com/photos/julesfarquhar/51247943593/>

and

<https://www.flickr.com/photos/88708273@N03/52857508700/>

Distribution: *Liopholis adelynhoserae sp. nov.* is found in the Snowy Mountains area, generally south of Rennix Gap (the high ridge area west of Lake Jindabyne), south-west through elevated and rocky parts of north-east Victoria to the higher parts of the Yarra Ranges National Park, east of Melbourne in southern central Victoria.

Liopholis montana (Donnellan, Hutchinson, Dempsey and Osborne, 2022), type locality: Mount Gingera, Brindabella Ranges, ACT, Australia, Latitude: 35.35 S., Longitude 148.46 E., is herein confined to the Brindabella Ranges area of western Australian Capital Territory and immediately adjacent New South Wales being confined to the Brindabella Ranges upland.

An outlier population from west of Melbourne, presently only known from the Wombat State Forest (upper Lerderderg River drainage, mainly on the rocky southern side) is morphologically divergent and in this paper is formally named as a subspecies, *L. adelynhoserae divergens subsp. nov.*

Conservation: Most known populations (of the nominate form) of *Liopholis adelynhoserae sp. nov.* are within National Parks and other protected areas.

There is little potential demand from the reptile keeping hobby or pet trade and excess regulation of this taxon would be a waste of tax-payer's money.

This remains the case unless and until some currently unknown threat is detected or emerges.

Government money should not be unnecessarily spent on this taxon when more critically endangered or threatened species deserve government funds and attention.

A caveat to this is that all east Victorian populations of this putative species are in fact of the same species taxon.

It would make sense for DNA to be taken from all known Victorian populations to confirm that they are of the same species-level taxon.

Etymology: *L. adelynhoserae sp. nov.* is named in honour of my daughter, Adelyn Hoser, AKA Snake Girl, born in Box Hill, Melbourne, Victoria, Australia in recognition of her many contributions to wildlife conservation over 25 years.

Contrary to reports on a Wikipedia hate page and other parts of the internet, she did not die in 2011 from the bite of a venomoid inland Taipan that had (allegedly) regenerated venom.

There is no truth to the false and defamatory claim whatsoever.

Venomoid snakes by definition cannot possibly regenerate venom (Hoser, 2004a, 2004b).

LIOPHOLIS ADELYNHOSERAEE DIVERGANS SUBSP. NOV.
LSIDDurn:lsid:zoobank.org:act:803FE469-B3AD-4A2E-87CD-4E8109CAC671

Holotype: An adult specimen depicted in life online at:

<https://www.thecourier.com.au/story/7364272/what-are-you-doing-here-new-population-of-mountain-skinks-discovered-in-forest/> from from Wombat State Forest, Victoria, Australia.

Paratype: A live specimen depicted online at:

<https://www.flickr.com/photos/88708273@N03/52857119756/> from from Wombat State Forest, Victoria, Australia.

Diagnosis: Until now the species *Liopholis adelynhoserae* sp. nov. has been treated as a southern population (being most of the distribution) of putative *Liopholis montana* (Donnellan, Hutchinson, Dempsey and Osborne, 2022), type locality: Mount Gingera, Brindabella Ranges, Australian Capital Territory (ACT), Australia, Latitude. 35.35 S., Longitude 148.46 E..

That species is herein confined to the Brindabella Ranges area of the western edge of the Australian Capital Territory (ACT) and immediately adjacent New South Wales confined to the Brindabella Ranges upland.

Liopholis adelynhoserae sp. nov. is found in the Snowy Mountains area, generally south of Rennix Gap (the high ridge area west of Lake Jindabyne), south-west through elevated and rocky parts of north-east Victoria to the higher parts of the Yarra Ranges National Park, east of Melbourne in southern central Victoria.

An outlier population from west of Melbourne, presently only known from the Wombat State Forest (upper Lerderberg River drainage, mainly on the rocky southern side) is morphologically divergent and in this paper is formally named as a subspecies, *L. adelynhoserae divergens* subsp. nov..

That population is reproductively isolated from the more eastern populations, separated by the basalt plains of Melbourne, from which the species is absent and replaced by the aggressive *L. whitii* (LaCépède, 1804), as outlined in Hoser (2018b).

The same applies in terms of potential habitat for *L. adelynhoserae* sp. nov. north of Melbourne east of the Kilmore Gap, in areas such as Kinglake, Pheasant's Nest and Kinglake West, meaning that the western population of *L. adelynhoserae divergens* subsp. nov. is separated from the eastern population of the nominate form by about 80 km or more in a straight line.

Adult *L. adelynhoserae* sp. nov. are separated from *L. montana* by having orange on the dorsum (light grey down the midline), sometimes light marone, versus dark marone or purple in *L. montana* as well as numerous light orange or brown markings or interspaces within the dark line of the upper flank, versus not so in *L. montana*.

Any markings on the black line of the upper flank in *L. montana* are invariably white or faded to obscurity.

Upper labials of *L. montana* and *L. adelynhoserae* sp. nov. are distinctly and uniformly dark etched, versus not so in *L. adelynhoserae divergens* subsp. nov., where dark etching is either absent or not uniform in thickness.

L. montana is a generally darker and more greyish coloured lizard, than both subspecies of *L. adelynhoserae* sp. nov..

L. adelynhoserae divergens subsp. nov. is separated from both nominate *L. adelynhoserae* sp. nov. and *L. montana* by a general lack of dark or black markings on the head anterior to the ear and the upper flanks so faded as to lack the wide blackish zone on the upper flank as seen in the other two species. The upper flank only has scattered small faded dark brown to black blotches, (usually triangular in shape) interspersed with orange-brown on the upper flank and greyish-white on the majority of the flank, on the lower two thirds.

In the other two forms (*L. montana* and nominate *L. adelynhoserae* sp. nov.) the dark zone of the upper flank is wider than the light lower part, versus the reverse in *L. adelynhoserae divergens* subsp. nov..

Juveniles and subadults of all of *L. adelynhoserae* sp. nov., *L. montana* and *L. adelynhoserae divergens* subsp. nov. are brightly marked with white spots and markings and quite unlike the adults and the previous diagnostic information does not apply to them.

L. adelynhoserae sp. nov., *L. montana* and *L. adelynhoserae divergens* subsp. nov. as a trio are separated from all other species within *Liopholis* by the following unique combination of characters: adult snout-vent length of 110 mm, versus 90 cm for all other species in the *L. whitii* complex (excluding *L. compressicauda* (Quoy and Gaimard, 1824) from the NSW Central Coast region); smooth dorsal scales, dorsum including a light to medium greyish but ill-defined mid-lateral stripe, bounded by darker on the sides of the dorsum, forming to two orangish to purple or marone lines down either side of the back; usually, but not always a reasonably well-

defined blackish line on the upper lateral surface enclosing white, orange or yellow spots or blotches, often ill defined; a normally proportioned interparietal and smooth subdigital lamellae.

Longitudinal scale rows at midbody number 31-37; scales smooth; 57-62 paravertebral scales; 19-25 subdigital lamellae under fourth toe; lamellae undivided and palms and soles smooth. Nasals separated. Prefrontals in point to broad contact, rarely separated; frontoparietals paired. Interparietal distinctly narrower than frontal, much longer than wide, separating parietals.

Each parietal bordered posteriorly by an enlarged nuchal scale and laterally by an elongate upper secondary temporal scale, this scale separated from the nuchal by a smaller tertiary temporal contacting the posterolateral corner of the parietal. Supraciliaries 7-9, usually 8. Supralabials 8, rarely 7, the sixth and seventh subocular. Subocular supralabials separated from granular scales of the eyelid by a row of small subocular scales (Largely modified from Donnellan *et al.* (2002).

The morphologically similar species *L. guthoga* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), of both subspecies is separated from other species in the *L. whitii* complex by the following suite of characters: The presence of a blackish upper lateral stripe usually overlain by two or three roughly longitudinal series of light, whitish grey, cream, yellow or light orange dots. Adults with complex back pattern similar to that of other species in the *L. whitii* complex including *L. compressicauda* (Quoy and Gaimard, 1824) and *L. coplandi* Wells and Wellington, 1985, but with only two main colours, a greyish background colour and blackish brown pattern. Further distinguished by the low numbers of subdigital lamellae (mode <20, versus >20 for *L. montana* and all others in the *L. whitii* complex) and shorter tail (<140% SVL, versus >140% SVL) (largely modified from Donnellan *et al.* 2002).

The putative taxon, *Liopholis coplandi* Wells and Wellington, 1985, is of the *L. whitii* complex as stated by Wells and Wellington in their paper. Significantly, this is confirmed by the molecular results of Chapple *et al.* (2005), who notably had molecular results for specimens from both the type locality and near Adaminaby, New South Wales, another cited location for the same taxon.

If their taxon is in fact distinct from *L. compressicauda* Quoy and Gaimard, 1824, as stated by Wells and Wellington, 1985, it is evidently most closely related to it and not either *L. montana* or *L. adelynhoserae* sp. nov..

The molecular results of Chapple *et al.* (2005), confirms that *L. coplandi* Wells and Wellington, 1985 is neither *L. montana* or *L. adelynhoserae* sp. nov.. However they do not settle the question as to whether or not it is in fact conspecific with *L. compressicauda*.

L. adelynhoserae divergens subsp. nov. is depicted online at: <https://www.flickr.com/photos/julesfarquhar/51247943593/> and

<https://www.flickr.com/photos/88708273@N03/52857508700/>

L. montana in life is depicted in Swan *et al.* (2022) on page 192 and online at:

<https://canberra.naturemapr.org/species/7770> and

<https://www.flickr.com/photos/136643623@N03/37534007882>

L. adelynhoserae sp. nov. is depicted in life in Wilson and Swan (2021) on page 397 bottom, Brown (2014) on page 511, second from bottom on right and online at:

<https://www.flickr.com/photos/88708273@N03/52838574805/>

Distribution: *Liopholis adelynhoserae* sp. nov. is found in the Snowy Mountains area, generally south of Rennix Gap (being the very high ridge area west of Lake Jindabyne), south-west through elevated and rocky parts of north-east Victoria to the higher parts of the Yarra Ranges National Park, east of Melbourne in southern central Victoria.

Liopholis montana (Donnellan, Hutchinson, Dempsey and Osborne, 2022), type locality: Mount Gingera, Brindabella Ranges, ACT, Australia, Latitude. 35.35 S., Longitude 148.46 E., is herein confined to the Brindabella Ranges area of western Australian Capital Territory and immediately adjacent New South Wales confined to the Brindabella Ranges upland.

An outlier population from west of Melbourne, presently only known from the Wombat State Forest (upper Lerderberg River drainage,

mainly on the rocky southern side) is morphologically divergent and in this paper is formally named as a subspecies, *L. adelynhoserae divergens subsp. nov.*

Conservation: The only known distribution for the subspecies *L. adelynhoserae divergens subsp. nov.* is the Wombat State Forest, north-east of Ballarat, Victoria and north-west of Bacchus Marsh, Victoria. To better protect this isolated population, this State Forest should be incorporated within the adjoining Lerderderg State Park, an area also likely to have this subspecies present.

State forests do not have the same protections for wildlife as National Parks, although it is noted that this species has been found in areas previously logged and/or burnt in bushfires within the Wombat State Forest.

Other species of *Liopholis* in Eastern Australia seem able to survive in heavily degraded habitat and it is likely that the greatest risk to this species probably comes from aggressive actions from other species within this genus or morphologically similar species, such as species within *Eulamprus* Fitzinger, 1843, also common in the same State Forest (namely *E. tympanum* Lönnberg and Andersson, 1915).

Etymology: *L. adelynhoserae divergens subsp. nov.* is named in reflection of the fact that it is divergent from the populations of the putative species, *L. adelynhoserae sp. nov.*, warranting taxonomic recognition.

The choice of spelling is deliberate to avoid the possibility of the inadvertent creation of any homonyms and should not be emended or changed.

LIOPHOLIS GUTHEGA WARKWOOLWLERENSIS SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:993F89D7-3589-473F-A249-8EE6D2426772

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R56035 collected from Falls Creek, (near the ruined Castle Ski Run) Victoria, Australia, Latitude 36.86 S., Longitude 147.27 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number D76839 collected from Falls Creek, Victoria, Australia, Latitude 36.86 S., Longitude 147.27 E.

Diagnosis: *L. guthega warkwoolwlerensis subsp. nov.* from the Bogong High Plains in Victoria, is readily separated from the nominate form of *L. guthega* (Donnellan, Hutchinson, Dempsey and Osborne, 2002), type locality of Charlotte's Pass, New South Wales, Australia, Latitude -36.26 S., Longitude 148.19 E, being confined to the Snowy Mountains area of New South Wales, by the fact that the spotting on the dorsum and flanks in all but old specimens is cream to light yellow, versus dark yellow to light orange in *L. Guthega*. Spotting on the flanks of *L. guthega* is bold and the spots are of medium size and generally more-or-less circular in shape. By contrast in *L. guthega warkwoolwlerensis subsp. nov.* the spots are relatively small and somewhat irregular in shape.

Three brown stripes down the back of adult *L. guthega* are distinct, versus semi-distinct in *L. guthega warkwoolwlerensis subsp. nov.* Upper labials of *L. guthega* are usually yellowish in colour, versus cream to white in *L. guthega warkwoolwlerensis subsp. nov.*

L. guthega (Donnellan, Hutchinson, Dempsey and Osborne, 2002), of both subspecies is separated from all other species in the *L. whitii* (LaCépède, 1804) complex by the following suite of characters: The presence of a blackish upper lateral stripe usually overlain by two or three roughly longitudinal series of light, whitish grey, cream, yellow or light orange dots. Adults with complex back pattern similar to that of other species in the *L. whitii* complex including *L. compressicauda* (Quoy and Gaimard, 1824) and *L. coplandi* Wells and Wellington, 1985, but with only two main colours, a greyish background colour and blackish brown pattern. Further distinguished by the low numbers of subdigital lamellae (mode <20, versus >20 for *L. montana* and all others in the *L. whitii* complex) and shorter tail (<140% SVL, versus >140% SVL) (largely modified from Donnellan *et al.* 2002).

Chapple *et al.* (2005) found a 1.1 to 1-7 MYA divergence between the two populations of *L. Guthega*, each separated by a low valley

region of unsuitable habitat, which was found by Hoser (2020a) to be similarly blocking gene flow between populations of putative *Burrumys parvus*.

These were also split by Hoser (2020a) at the subspecies level, confirming the sensibility of the taxonomic decision herein to formally name the Victorian population of *L. guthega* as *L. guthega warkwoolwlerensis subsp. nov.*

L. guthega warkwoolwlerensis subsp. nov. is depicted in life in Brown (2014) on page 511, second from bottom on left and online at:

<https://www.flickr.com/photos/whawha88/23160916463/> and

<https://www.flickr.com/photos/whawha88/23160799333/>

Nominate *L. guthega* (Donnellan, Hutchinson, Dempsey and Osborne, 2002) is depicted in life in Swan *et al.* (2022) on page 189, Wilson and Swan (2021) on page 395 middle, Cogger (2014) page 637, top left and online at:

<https://www.flickr.com/photos/moloch05/46100177461/> and

<https://www.flickr.com/photos/moloch05/44283843530/> and

<https://www.flickr.com/photos/whawha88/23705377711/> and

<https://www.flickr.com/photos/whawha88/23705377711/> and

<https://www.flickr.com/photos/whawha88/23705377711/> and

<https://www.flickr.com/photos/whawha88/23705377711/> and

<https://www.flickr.com/photos/189037423@N06/52063030404/>

Distribution: *L. guthega warkwoolwlerensis subsp. nov.* is only known from the Bogong High Plains region of Victoria generally near the ski resorts of Mount Hotham and Falls Creek.

Nominate *L. guthega* (Donnellan, Hutchinson, Dempsey and Osborne, 2002) is confined to the vicinity of the ski resort areas near the Mount Kosciuszko National Park.

Conservation: Fortunately all or most of the entire known distribution for this taxon is within National Parks and conservation areas of Victoria and so their habitat is largely protected.

There are no known threats at this stage to the survival of the subspecies, short of long-term issues such as competing species, climate change, invasive pests that may alter habitat, unknown pathogens and the like, meaning that the only immediate conservation action required for the taxon is monitoring of populations on a semi-regular basis.

Significant conservation funds are otherwise better spent elsewhere.

Etymology: *L. guthega warkwoolwlerensis subsp. nov.* is named in reflection of where the subspecies occurs. In the native Australian Aboriginal tribes languages, Waywuru and Dhudhuroa, Mount Bogong is named Warkwoolwler, meaning the mountain where Aboriginal people collected the Bogong Moths.

LIOPHOLIS JACKYHOSERAEE SP. NOV.

LSIDurn:lsid:zoobank.org:act:77CF9081-FEFB-424A-A2F9-B900A800F0A7

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R34757 collected from "Tibuc", 16 km West of Coonabarabran, New South Wales (NSW), Australia, Latitude -31.25 S., Longitude 149.53 E.

This government-owned facility allows access to its holdings.

Paratypes: Three preserved specimens at the Queensland Museum, Brisbane, Queensland, Australia, specimen numbers J26043-J26045 all collected 16 km west of the Warrumbungles, in New South Wales, Australia, Latitude -31.216667 S., Longitude 149.083333 E.

Diagnosis: *Liopholis jackyhoserae sp. nov.* from immediately west of the Great Dividing Range in central and northern New South Wales, Australia, has until now been treated as a population of *L. compressicauda* (Quoy and Gaimard, 1824) a taxon from eastern New South Wales, including far south-east Queensland and far north-east Victoria, or the better-known *Liopholis whitii* LaCépède, 1804, from most parts of Victoria, very far west New South Wales, Tasmania and nearby parts of south-east South Australia with which it shares most morphological features.

L. jackyhoserae sp. nov. is however readily separated from those species (as well as the morphologically similar *L. coplandi* Wells and Wellington, 1985, in turn most similar to *L. compressicauda*) by the following combination of characters: The dorsolateral edge is

bound by a relatively bold whitish-grey line and on the flanks proper there are black edged, white blotches, in which the white dominates the black (occupies a greater area), versus no bold whitish-grey line on the dorso-lateral edge (some specimens with a faint one), and on the flanks proper, the white spots are heavily bounded with dark black (dominating) in the other species. On the dorsum of *L. jackyhoserae* sp. nov. the white spots are barely distinct, being faded or greyish-red, versus white and prominent in spotted adults of the other species.

The other species also have an adult morph which is unspotted dorsally, for which the last diagnostic difference does not apply. However this morph is rare in *L. jackyhoserae* sp. nov..

All the preceding species are separated from all other species within the genus *Liopholis* Fitzinger, 1843 by the following suite of characters: smooth dorsal scales, an ocellate lateral pattern, in which the upper flank is not distinctively darker than the lower, dorsal pattern (when present) including a rusty brown vertebral stripe and blackish dorsolateral stripes enclosing a single series of cream or whitish spots or dashes, 30-43 midbody scale rows, normally proportioned interparietal; the smooth subdigital lamellae under the fourth toe number 17-20; lamellae often paired under basal phalanx; palms and soles smooth to weakly granular smooth subdigital lamellae. Nasals separated. Prefrontals separated or in point to broad contact. Frontoparietals paired. Interparietal similar in shape and only slightly smaller than frontal, much longer than wide, separating parietals. Each parietal bordered posteriorly by an enlarged nuchal scale and laterally by an elongate upper secondary temporal scale, this scale separated from the nuchal by a smaller tertiary temporal contacting the posterolateral corner of the parietal. Supraciliaries 5-9, usually 8; supralabials 7-9, the sixth and seventh subocular. Subocular supralabials separated from granular scales of the eyelid by a row of small subocular scales (largely modified from Donnellan et al. 2002).

L. jackyhoserae sp. nov. is depicted in life online at: <https://www.inaturalist.org/observations/146683277> and

<https://www.inaturalist.org/observations/11364284> and

<https://www.inaturalist.org/observations/153239189>

L. compressicauda in life is depicted in Hoser (1989) on page 94 on bottom right.

L. whitii in life is depicted online at:

<https://www.inaturalist.org/observations/25659329>

Distribution: *Liopholis jackyhoserae* sp. nov. occurs immediately west of the Great Dividing Range in central and northern New South Wales, Australia, in a general region commencing west of the Australian capital Territory and extending north of the Hunter Valley, west of the New England Tableland, with an easterly intrusion down the Hunter Valley.

L. compressicauda, generally occurs east of this area including most of the coast and near ranges of New South Wales and including far north-east Victoria and south-east Queensland.

Liopholis whitii LaCépède, 1804, occurs in most parts of Victoria, very far west New South Wales, Tasmania and nearby parts of south-east South Australia.

Conservation: Significant populations are within National Parks and similar conservation zones. The species is not regarded as rare, uncommon or hard to find and catch. Therefore it is not of immediate conservation concern.

Etymology: *L. jackyhoserae* sp. nov. is named in honour of my younger daughter, Jacky Hoser, born in 2001 in recognition of over 20 years of services to herpetology and wildlife conservation in general.

LIOPHOLIS FAAAAAARK SP. NOV.

LSIDurn:lsid:zoobank.org:act:4B15ED4F-FF8D-48E8-86CF-49618271EFD0

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R51590 collected from 36.5 km south east of Amata, South Australia, Australia, Latitude -26.2558 S., Longitude 131.4933 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Australian Museum,

Sydney, New South Wales, Australia, specimen number R.17456 collected from the Erliwunyawunya Rockhole, Musgrave Ranges, South Australia, Australia, Latitude -26.35833 S., Longitude 131.72499 E.

2/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R60802 collected from approximately 10km north of Ernabella (now called Pukatja), South Australia, Australia, Latitude -26.1917 S., Longitude 132.1458 E.

3/ A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.17271 collected from the Piltadi Rockhole in South Australia, Australia, Latitude -26.116 S., Longitude 130.283 E.

Diagnosis: Since Glen Storr's original description of "*Egernia margaretae*" in 1968, the South Australian population of *Liopholis margaretae* (Storr, 1968) as it is now known, type locality: Palm Valley, Northern Territory (NT), Australia, Latitude 24.03 S., Longitude 132.42 E. has been treated by all Australian herpetologists until now as the same species.

However the concept of the South Australian population being of the same species is biogeographically untenable.

Therefore it is formally described herein as *Liopholis faaaaaark* sp. nov..

L. faaaaaark sp. nov. is readily separated from *L. margaretae* by the very narrow separation of nasals (versus wide), wider interparietal (more-or-less as wide as the frontal), versus not so in *L. margaretae*, fewer supraciliaries (6) versus 7-9 (usually 8) in *L. margaretae*, usually more upper palpebrals (11 to 13) versus 10-12 in *L. margaretae*, and on average fewer rows of midbody scales (32 to 36), versus 34-38 in *L. margaretae*. The relatively long limbs are about 31 and 42 percent of SVL (versus 22-28% and 31-38% in *L. margaretae*).

Colouration of both *L. margaretae* and *L. faaaaaark* sp. nov. is olive brown dorsally with reddish-brown anteriorly and paler on the tail. In *L. margaretae* there is black spotting on the back and tail that is irregularly distributed, but tending towards longitudinal alignment. Small black spots are scattered on the top and side of the head. Sutures of chin shields are irregularly margined with black. There are dark brownish grey spots or short wavy lines on the throat. In about a third of specimens black markings are almost or completely lacking.

L. faaaaaark sp. nov. generally lacks patterning on the dorsum in adults. Sometimes there are faded black spots, these being the remnants of a laterodorsal stripe that is better defined in juveniles. Both preceding species have a narrow to moderately-wide ear aperture, 3-5 lobules, usually obtuse, sometimes rectangular, rarely acute. Snout-vent length averages about 95 mm in adults and a snout that is no more depressed than the rest of the head (versus strongly depressed and concave in plan in the closely related species *M. personata* (Storr, 1968), the latter being found in more southern parts of South Australia, generally in or around the Flinders Ranges district.

The three preceding species are separated from all others in the genus *Liopholis* Fitzinger, 1843 by the presence of smooth dorsal scales, the presence of conspicuous black callus along the free edge of the subdigital lamellae and the scales of the soles and palms each with a prominent black tubercle.

L. faaaaaark sp. nov. from hilly country in far north South Australia, is separated from the Northern

Territory population of *L. margaretae* with a distribution centred on the central ranges of central Australia by the Amadeus Lowlands, a well-known biogeographical barrier.

A molecular phylogeny of Oliver et al. (2007) at fig. 3. found that centralian populations of geckos in the genus *Diplodactylus* subgenus *Yankunytjatjaragecko* Hoser, 2023, namely *D. (Yankunytjatjaragecko) galeatus* Kluge, 1963 from the Coober Pedy area of South Australia, *D.*

(Yankunytjatjaragecko) aah Hoser, 2023 from the Macdonell Ranges of central Australia and *D. (Yankunytjatjaragecko)* ooh Hoser, 2023 from the Bagot and Beddoma Ranges in northern South Australia, diverged from one another between 5 and 10 MYA. A similar divergence between *L. faaaaaark* sp. nov. and *L. margaretae* can therefore also be reasonably expected.

This is more than sufficient divergence for species-level recognition. *L. faaaaark sp. nov.* is depicted in life in Cogger (2014) on page 639 bottom left.

L. margaretae in life is depicted in Wilson and Swan (2021) on page 397, second image from top and Brown (2014) on page 513, second from top on right.

Distribution: *L. faaaaark sp. nov.* is confined the hilly region in the north-west of South Australia, just south of the NT/SA border. It is separated from the Centralian population of the closely related species *L. margaretae* by the Amadeus Lowlands, a well-known biogeographical barrier.

Conservation: While this taxon is relatively range restricted by virtue of relevant biogeographical barriers, the remoteness of the region in terms of human activity offers the species significant protection.

Long-term habitat destruction by feral or native animals is perhaps the biggest potential issue facing this taxon in the foreseeable future and to that extent populations of this and other species and subspecies restricted to this region, such as the recently described range restricted gecko *Diplodactylus (Yankunytjatjaragecko) ooh* Hoser, 2023 should have their populations monitored at regular intervals.

Etymology: In 1983, when searching for the newly named species in far north-west South Australia, I recruited the assistance of some native Pitjantjatjara children who said they knew where and how to find them. When a child saw a lizard scuttle under a boulder he yelled out "FAAAAAARK", giving this species its scientific name.

LIOPHOLIS PERSONATA REMOTA SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:11B0F5BF-0E67-4AC5-AFBA-6E899320AA53

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R52989 collected from 4.6 km north-east of Freeling Heights, Arkaroola, South Australia, Australia, Latitude -30.1108 S., Longitude 139.4158 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R52978 collected from 4.6 km north-east of Freeling Heights, Arkaroola, South Australia, Australia, Latitude -30.1108 S., Longitude 139.4158 E.

2/ Three preserved specimens at the South Australian Museum, Adelaide, South Australia, Australia, specimen numbers R8724-8726 collected from North Tusk, Gammon Ranges, South Australia, Australia.

Diagnosis: *Liopholis personata remota subsp. nov.* is the Gammon Ranges region outlier population of *L. personata* (Storr, 1968), type locality: Wilpena Gorge, South Australia, Australia, Latitude -31.33 S., Longitude 138.34 E, a taxon with a centre of distribution in the central Flinders Ranges.

L. personata remota subsp. nov. is readily separated from the nominate form of *L. personata* by the presence of about 60 small but distinct, well scattered white spots on either flank. These are usually absent in *L. personata* or if present, very faded. For *L. personata remota subsp. nov.* on the distinct or semi-distinct darker stripes running longitudinally down the sides of the dorsum, are small whitish spots. These are absent in the nominate form of *L. personata*.

L. personata remota subsp. nov. has whitish or yellowish upper labials, as opposed to having a pink, orange or reddish flush in the nominate form of *L. personata*.

Both preceding subspecies have a snout that is narrow, strongly depressed and concave in plan; wide ear aperture, 2-4 lobules, usually decreasing in size downwards. Snout-vent length averages about 95 mm in adults.

The two preceding subspecies are separated from the closely related taxa *L. margaretae* (Storr, 1978) and *L. faaaaark sp. nov.* by having a snout that is narrow, strongly depressed and concave in plan, versus a somewhat wider snout that is no more depressed than the rest of the head.

The three preceding species are separated from all others in the genus *Liopholis* Fitzinger, 1843 by the presence of smooth dorsal scales, the presence of conspicuous black callus along the free

edge of the subdigital lamellae and the scales of the soles and palms each with a prominent black tubercle.

L. personata remota subsp. nov. is depicted in life online at: <https://www.flickr.com/photos/jamesn48/8058092314/> and

<https://www.inaturalist.org/observations/133862787> and

<https://www.inaturalist.org/observations/161542637> and

<https://www.inaturalist.org/observations/141478800>

Nominate *L. personata personata* is depicted in life in Brown (2014) on page 513, second from top on left and online at:

<https://www.flickr.com/photos/58349528@N02/32111722212/> and

<https://www.flickr.com/photos/bassia09/10552712834/> and

<https://www.inaturalist.org/observations/98861242> and

<https://www.inaturalist.org/observations/15973888> and

<https://www.inaturalist.org/observations/188501000>

Distribution: *Liopholis personata remota subsp. nov.* is found in the northern Flinders Ranges region of South Australia, with a distribution centred on the Gammon Ranges.

L. personata (Storr, 1968), type locality: Wilpena Gorge, South Australia, Australia, Latitude -31.33 S., Longitude 138.34 E, is a taxon with a centre of distribution in the central Flinders Ranges.

Conservation: While the subspecies *L. personata remota subsp. nov.* is relatively range restricted by virtue of relevant biogeographical barriers, the remoteness of the region in terms of human activity offers the species significant protection.

Long-term habitat destruction by feral or native animals is perhaps the biggest potential issue facing this taxon in the foreseeable future and to that extent populations of this and other species and subspecies restricted to this region, should have their populations monitored at regular intervals.

Etymology: The subspecies name "*remota*", reflects the relatively remote location that this taxon occurs.

LIOPHOLIS SHANESCARFFI SP. NOV.

LSIDurn:lsid:zoobank.org:act:F4E72E4A-9837-4D79-AADB-AAB5F790C18D

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R39172 collected from 16 km west of Retreat, New South Wales, Australia, Latitude 32.90 S., Longitude 143.30 E.

This government-owned facility allows access to its holdings.

Diagnosis: *Liopholis shanescaffii sp. nov.* has most recently been treated as an isolated south-west New South Wales population of *L. modesta* (Storr, 1968), type locality of Chinchilla, Queensland, e.g. Swan *et al.* (2022), from which it can be separated as follows:

A complete lack of spotting on the flanks (rarely faded), in mature adults, versus anterior spotting at least, in adult *L. modesta* of both Queensland type form and that from north-east New South Wales; a dorsum which is more greyish, than brownish or olive in general background colouration and a dorsum in which the outer edging of the scales forms prominent darker longitudinal lines, versus either absent or only semi-distinct in other putative *L. modesta*.

Within the two main populations of *L. modesta* from north-east New South Wales (including the border ranges area of Queensland) and south-east Queensland, generally north and west of Toowoomba (being the type form of that species), the two populations are separated as follows:

Adults of type *L. modesta* have scattered spots on the flanks continuous along it, versus not so in the north-east New South Wales lizards.

These spots are invariably faded in aged specimens.

The name "*Egernia geophana* Horton, 1968" may be applicable to the North-east New South Wales population of putative *E. modesta* (Cogger *et al.* 1983).

Both *L. shanescaffii sp. nov.* as well as the North-east New South Wales and southern Queensland populations of putative *L.*

modesta, are separated from all other species within the *Liopholis whitii* LaCépède, 1804 species group as detailed in the description of *Liopholis jackyhoserae* sp. nov. above in this paper (being *L. jackyhoserae* sp. nov., *L. compressicauda* (Quoy and Gaimard, 1824), *L. coplandi* Wells and Wellington, 1985 and *Liopholis whitii* LaCépède, 1804), by the proportionately more elongated body, shorter limbs, and longer tail (foreleg is 23-33 percent of snout-vent length, hindleg is 33-43 percent of snout-vent length and tail is 151-177 percent of the snout-vent length); little or no colour pattern in aged adults, narrowly separated nasals and tubercular calli on proximal subdigital lamellae (modified from Storr, 1968).

All the preceding identified species, being *L. shanescaffii* sp. nov., *L. modesta* and those in the *L. whitii* group, being *L. jackyhoserae* sp. nov., *L. compressicauda* (Quoy and Gaimard, 1824), *L. coplandi* Wells and Wellington, 1985 and *Liopholis whitii* LaCépède, 1804 are separated from all other species within the genus *Liopholis* Fitzinger, 1843 by the following suite of characters: smooth dorsal scales, an ocellate lateral pattern (at least in juveniles), in which the upper flank is not distinctively darker than the lower, dorsal pattern (when present) including a rusty brown vertebral stripe and blackish dorsolateral stripes enclosing a single series of cream or whitish spots or dashes, 30-43 midbody scale rows, normally proportioned interparietal; the smooth subdigital lamellae under the fourth toe number 17-20; lamellae often paired under basal phalanx; palms and soles smooth to weakly granular smooth subdigital lamellae. Nasals separated. Prefrontals separated or in point to broad contact. Frontoparietals paired. Interparietal similar in shape and only slightly smaller than frontal, much longer than wide, separating parietals. Each parietal bordered posteriorly by an enlarged nuchal scale and laterally by an elongate upper secondary temporal scale, this scale separated from the nuchal by a smaller tertiary temporal contacting the posterolateral corner of the parietal. Supraciliaries 5-9, usually 8; supralabials 7-9, the sixth and seventh subocular. Subocular supralabials separated from granular scales of the eyelid by a row of small subocular scales (largely modified from Donnellan *et al.* 2002).

E. modesta of the type form (adult) is depicted in life in Wilson and Swan (2021) on page 397 second from bottom and in Brown (2014) page 513 second from bottom on right.

Distribution: *L. shanescaffii* sp. nov. is, as far as is known, confined to the immediate vicinity of the type locality, being Retreat, New South Wales, Australia, Latitude 32.90 S., Longitude 143.30 E, just south of Ivanhoe in the south-west of the State.

Etymology: *L. shanescaffii* sp. nov. is named in honour of Shane Scarff of Heckenberg, New South Wales, (a suburb 36 km from the CBD in south-western Sydney), Australia, owner of "Shane's Aussie Pythons" in recognition of his excellent work in breeding many species of Australian pythons over some decades, reducing pressure on wild populations by the expanding private pet trade.

FLAMOSCINCUS ARRENTEORUM SP. NOV.

LSIDurn:lsid:zoobank.org:act:E5B2AE54-0A7C-4DF0-982D-A21EEC3E97DC

Holotype: A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.25794 collected from the Alice Springs District, central Australia, Northern Territory, Australia, Latitude 23.6980 S., Longitude 133.8807 E. This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.52084 collected from Orange Creek, Stuart Highway, Central Australia, Northern Territory, Australia, Latitude -24.016 S. Longitude 133.633 E.

2/ A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.60167 collected from 72km south-west of Alice Springs on the Stuart Highway, Northern Territory, Australia, Latitude -24.283 S., Longitude 133.46 E.

Diagnosis: Until now, almost all publishing herpetologists have viewed "*Egernia inornata* Rosen, 1905" as a single species, although in the past decade, most authors have placed the putative taxon within the genus *Liopholis* Fitzinger, 1843.

Contrary to this position, Wells and Wellington, 1985 regarded the putative species as composite and formally named the west New South Wales population (extending into nearby parts of South

Australia and north-west Victoria) as a new species which they placed into the genus *Flamoscincus* Wells and Wellington, 1984, with a closely related type species of "*Egernia kintorei* Stirling and Zietz, 1893".

The position of Wells and Wellington (1984, 1985) has been confirmed as correct following this assessment of published molecular evidence (e.g. Chapple *et al.* 2004, 2005 and 2008, Donnellan *et al.* 2002, Pyron *et al.* 2013 and others), assessment of well-known biogeographical barriers within the range of the putative taxon/taxa (e.g. the Flinders Ranges and various flood plains) as well as a reassessment of morphological divergences between populations, including those flagged by Glenn Storr in Storr (1968). This paper recognizes six species in the complex including *Flamoscincus inornata* (Rosen, 1905), herein restricted to the region near the Goldfields in inland south-east Western Australia, *F. webberi* Wells and Wellington, 1985 from the region encompassing south-west New South Wales, nearby parts of South Australia (east of the Flinders Ranges) as well as north-west Victoria and four newly named species.

These are: *F. arreneteorum* sp. nov. from the Macdonnell Ranges area of central Australia; *F. pitjantjatjaraorum* sp. nov. from the Musgrave Ranges area in north-west South Australia and nearby east Western Australia, generally south of the Amadeus basin in the far south-west of the Northern Territory, *F. yamatjiorum* sp. nov. from the far central west of Western Australia and *F. wiranguorum* sp. nov. from the Eyre Peninsula and nearby parts of South Australia, generally east of the Nullarbor, west of the Eyre Peninsula and south of the Eyrean and Centralian flood plains.

The six species are separated from one another by the following unique combinations of characters:

F. inornata is a light yellowish, creamy beige coloured lizard with scattered blackish spots on the dorsum and upper flanks, these spots are of irregular shape, but usually elongated in a dorso-posterior direction, more densely spaced on the dorsum than on the upper flank (absent on the lower flank) with those on the dorsum tending to form longitudinal lines.

Upper labials have 2 or 3 prominent black spots, slightly curved and elongated in an up-down manner; iris is beige and there are 38-42 midbody rows.

This species is larger than all others in the complex, having an adult snout vent length of 79-84 mm, versus below 79 mm for all other species.

It is also more elongated and adapted to burrowing than the other species having a relatively longer tail (original) and proportionately shorter than average foreleg, being about 28 percent of the snout-vent length, versus 29-30 per cent for all the other species (as a group).

F. webberi is similar to *F. inornata* as described above, but readily separated from that species by having dense black spotting on the majority of the flanks (being the upper two thirds), coalesced to form semi-broken irregular bands, while on the dorsum there is a much lesser number of black spots, also tiny in size (meaning far more black on the flanks than on the dorsum), the tiny black spots well-spaced apart and tending to be in a longitudinal arrangement, being most prominent on the rear of the neck and body and absent from the head and tail. Iris is light grey-brown to greyish-beige in colour. Usually four ear lobules.

The dorsum has a slight, brownish-orange tinge to the otherwise yellowish colour, generally slightly darker in colour than the preceding species (*F. inornata*).

F. arreneteorum sp. nov. is a light reddish-orange lizard, with a distinctive concentration of black speckling and pigment on the upper flank along the dorso-lateral line, extending to the venter as a series of well-defined broken or unbroken lines around the region of the back of the neck and front limb. Iris is orange in colour. Usually four ear lobules.

Compared to all other species in the complex, *F. arreneteorum* sp. nov. have a shorter than average tail, being 119.9 per cent of the snout-vent length, fewer subdigital lamellae under the fourth toe being an average of 22.2 and a lesser average number of palpebrals being 10.1.

F. pitjantjatjaraorum sp. nov. is separated from the other species in the *F. inornata* complex by their longer than average hindleg being

about 38 percent of snout-vent length, versus 37 per cent in the other species in the complex, 34-38 mid-body rows, versus 37-44 in all other species in the complex; an average of 24.5 subdigital lamellae versus 23 in the rest of the complex (as a group) and an average of 11.4 upper palpebrals versus 10.4 for the rest of the complex (as a group). Iris is light yellow-brown.

F. yamatjiorum sp. nov. has a yellowish-brown dorsum and light orange iris. Black spotting coalesces on both dorsum and flanks and is of similar amounts on both, all of which extends some distance down the original tail. Usually three ear lobules (rarely four). Black spotting extends down the flank to beyond the demarcation line of the whitish lower flank. While all species in the complex have an elongated rectangular-shaped ear opening, in *F. yamatjiorum sp. nov.* this elongation is reduced as compared to all other species in the complex.

F. wiranguorum sp. nov. is readily separated from all other species in the complex by its distinctive light creamish-grey dorsal colouration, versus yellows, browns, orangish or reddish in the other species. Iris is dull grey-brown.

The black spotting is relatively dense and even in concentration on both dorsum and flanks and relative to each other. Exceptional to this is the banding that forms on the neck, which in this species also extends down the flanks of the body. The bands on the flanks extends down the lower flank and across the whitish lower flank interface to intrude the whitish lower flank.

All the six preceding species within the *F. inornata* complex, being *F. inornata*, *F. webberi*, *F. arremteorum sp. nov.*, *F. pitjantjatjaraorum sp. nov.*, *F. yamatjiorum sp. nov.* and *F. wiranguorum sp. nov.* are readily separated from all other species within *Liopholis* Fitzinger, 1843 and *Flamoscincus* Wells and Wellington, 1984, by the following unique combination of characters:

Dorsum ranges from greyish, yellow, light brown to orangish or reddish, but generally similar to the local substrate with irregular black spotting on the body, at least on the upper flanks; black around the orbit; circular or near circular pupil, sometimes slightly narrower than high; vertically elongated ear opening with uncommonly 3, or more often 4 ear lobules; maximum snout-vent length under 85 mm; head and body deep in form; tail is 1 to 1.5 times as long as the snout-vent length (largely modified from Storr 1968).

Skinks in the genus *Flamoscincus* are separated from those in the genus *Liopholis (sensu-lato)* by having a dorsal colouration that is light rather than dark and dull; without a distinctive pattern of black longitudinal lines, stripes or rows of distinctive large well-formed and arranged blotches (those being diagnostic of *Liopholis*); ventral surfaces white rather than greyish (in *Liopholis*), a head that is deep, rather than either deep or flattened; a tail that is 1 to 1.5 times as long as the snout-vent length, versus one that is 1-2.2 times as long as the snout-vent length in *Liopholis*.

F. inornata in life is depicted in Storr, Smith and Johnstone (1981) on plate 12, picture 8, Brown (2014) on page 512 at top right and online at:

<https://www.flickr.com/photos/27897324@N07/8643603735/>
and

<https://www.inaturalist.org/observations/154800471>

F. webberi is depicted in life in Swan *et al.* (2022) on page 190, Cogger (2014) on page 637 top right, Brown (2014) on page 512, second from top on left and online at:

<https://www.flickr.com/photos/jono-dashper/52944108999/>
and

<https://www.flickr.com/photos/kristianbell/49068161166/>
and

<https://www.inaturalist.org/observations/193928138>
and

<https://www.inaturalist.org/observations/138471246>
and

<https://www.inaturalist.org/observations/146359704>
and

<https://www.inaturalist.org/observations/144336199>

F. arremteorum sp. nov. is depicted in life online at:

<https://central-barkley-nt.naturemapr.org/sightings/4521640>
and

<https://www.inaturalist.org/observations/153548243>
and

<https://www.flickr.com/photos/whawha88/9432274553/>

F. yamatjiorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/24764589>

F. wiranguorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/97504181>
and

<https://www.inaturalist.org/observations/67092211>
and

<https://www.inaturalist.org/observations/149232330>

Distribution: *F. arremteorum sp. nov.* is a taxon associated with the Macdonnell Ranges area of central Australia, Northern Territory, Australia, apparently endemic to that State, being separated from other species in the complex further south by the Amadeus basin in the far south-west of the Northern Territory.

Conservation: While *F. arremteorum sp. nov.* is relatively range restricted by virtue of relevant biogeographical barriers, the remoteness of the region in terms of human activity offers the species significant protection.

Long-term habitat destruction by feral or native animals is perhaps the biggest potential issue facing this taxon in the foreseeable future and to that extent populations of this and other species and subspecies restricted to this region, such as the recently described range restricted gecko *Diplodactylus (Yankunytjatjaragecko) aah* Hoser, 2023 should have their populations monitored at regular intervals.

Etymology: *F. arremteorum sp. nov.* is named in reflection of the Arrernte people, sometimes referred to as the Aranda, Arunta or Arrarnta. They are a group of native Aboriginal Australian peoples who have lived in the Arrernte lands, at Mparntwe (AKA Alice Springs) and nearby areas of the Central Australia region for many thousands of years. Racist "white" police officers in the Northern Territory still regularly kill these people for entertainment.

FLAMOSCINCUS PITJANTJATJARAORUM SP. NOV.
LSIDurn:lsid:zoobank.org:act:BE0F41CA-8869-449A-97FD-C9D478B9D739

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R7215 collected from 5 miles north of Mount Caroline, Musgrave Park, South Australia, Australia, Latitude -26.27 S., Longitude 130.83 E. This government-owned facility allows access to its holdings.

Paratypes: Eight preserved specimens at the South Australian Museum, Adelaide, South Australia, Australia, specimen numbers R7213, R7219, R7225, R7226, R7242, R7244, R7247 and R7685 all collected from Musgrave Park, South Australia, Australia.

Diagnosis: Until now, almost all publishing herpetologists have viewed "*Egernia inornata* Rosen, 1905" as a single species, although in the past decade, most authors have placed the putative taxon within the genus *Liopholis* Fitzinger, 1843.

Contrary to this position, Wells and Wellington, 1985 regarded the putative species as composite and formally named the west New South Wales population (extending into nearby parts of South Australia and north-west Victoria) as a new species which they placed into the genus *Flamoscincus* Wells and Wellington, 1984, with a closely related type species of *Egernia kintorei* Stirling and Zietz, 1893.

The position of Wells and Wellington (1985, 1985) has been confirmed as correct following this assessment of published molecular evidence (e.g. Chapple *et al.* 2004, 2005 and 2008, Donnellan *et al.* 2002, Pyron *et al.* 2013 and others), assessment of well-known biogeographical barriers within the range of the putative taxon/taxa (e.g. the Flinders Ranges and various flood plains) as well as a reassessment of morphological divergences between populations, including those flagged by Glenn Storr in Storr (1968). This paper recognizes six species in the complex including *Flamoscincus inornata* (Rosen, 1905), herein restricted to the region near the Goldfields in inland south-east Western Australia, *F. webberi* Wells and Wellington, 1985 from the region encompassing south-west New South Wales, nearby parts of South Australia (east of the Flinders Ranges) as well as north-west Victoria and four newly named species.

These are: *F. pitjantjatjaraorum* sp. nov. from the Musgrave Ranges area in north-west South Australia and nearby east Western Australia, generally south of the Amadeus basin in the far south-west of the Northern Territory; *F. arremteorum* sp. nov. from the Macdonnell Ranges area of central Australia; *F. yamatjiorum* sp. nov. from the far central west of Western Australia and *F. wiranguorum* sp. nov. from the Eyre Peninsula and nearby parts of South Australia, generally east of the Nullarbor, west of the Eyre Peninsula and south of the Eyrean and Centralian flood plains.

The six species are separated from one another by the following unique combinations of characters:

F. inornata is a light yellowish, creamy beige coloured lizard with scattered blackish spots on the dorsum and upper flanks, these spots are of irregular shape, but usually elongated in a dorso-posterior direction, more densely spaced on the dorsum than on the upper flank (absent on the lower flank) with those on the dorsum tending to form longitudinal lines.

Upper labials have 2 or 3 prominent black spots, slightly curved and elongated in an up-down manner; iris is beige and there are 38-42 midbody rows.

This species is larger than all others in the complex, having an adult snout-vent length of 79-84 mm, versus below 79 mm for all other species.

It is also more elongated and adapted to burrowing than the other species having a relatively longer tail (original) and proportionately shorter than average foreleg, being about 28 percent of the snout-vent length, versus 29-30 per cent for the other species (as a group).

F. webberi is similar to *F. inornata* as described above, but readily separated from that species by having dense black spotting on the majority of the flanks (being the upper two thirds), coalesced to form semi-broken irregular bands, while on the dorsum there is a much lesser number of black spots, also tiny in size (meaning far more black on the flanks than on the dorsum), the tiny black spots well-spaced apart and tending to be in a longitudinal arrangement, being most prominent on the rear of the neck and body and absent from the head and tail. Iris is light grey-brown to greyish-beige in colour. Usually four ear lobules.

The dorsum has a slight, brownish-orange tinge to the otherwise yellowish colour, generally slightly darker in colour than the preceding species (*F. inornata*).

F. arremteorum sp. nov. is a light reddish-orange lizard, with a distinctive concentration of black speckling and pigment on the upper flank along the dorso-lateral line, extending to the venter as a series of well-defined broken or unbroken lines around the region of the back of the neck and front limb. Iris is orange in colour. Usually four ear lobules.

Compared to all other species in the complex, *F. arremteorum* sp. nov. have a shorter than average tail, being 119.9 per cent of the snout-vent length, fewer subdigital lamellae under the fourth toe being an average of 22.2 and a lesser average number of palpebrals being 10.1.

F. pitjantjatjaraorum sp. nov. is separated from the other species in the *F. inornata* complex by their longer than average hindleg being about 38 percent of snout-vent length, versus 37 per cent in the other species in the complex, 34-38 mid-body rows, versus 37-44 in all other species in the complex; an average of 24.5 subdigital lamellae versus 23 in the rest of the complex (as a group) and an average of 11.4 upper palpebrals versus 10.4 for the rest of the complex (as a group). Iris is light yellow-brown.

F. yamatjiorum sp. nov. has a yellowish-brown dorsum and light orange iris. Black spotting coalesces on both dorsum and flanks and is of similar amounts on both, all of which extends some distance down the original tail. Usually three ear lobules (rarely four). Black spotting extends down the flank to beyond the demarcation line of the whitish lower flank. While all species in the complex have an elongated rectangular-shaped ear opening, in *F. yamatjiorum* sp. nov. this elongation is reduced as compared to all other species in the complex.

F. wiranguorum sp. nov. is readily separated from all other species in the complex by its distinctive light creamish-grey dorsal colouration, versus yellows, browns, orangish or reddish in the other species. Iris is dull grey-brown.

The black spotting is relatively dense and even in concentration on both dorsum and flanks and relative to each other. Exceptional to this is the banding that forms on the neck, which in this species also extends down the flanks of the body. The bands on the flanks extends down the lower flank and across the whitish lower flank interface to intrude the whitish lower flank.

All the six preceding species within the *F. inornata* complex, being *F. inornata*, *F. webberi*, *F. arremteorum* sp. nov., *F. pitjantjatjaraorum* sp. nov., *F. yamatjiorum* sp. nov. and *F. wiranguorum* sp. nov. are readily separated from all other species within *Liopholis* Fitzinger, 1843 and *Flamoscincus* Wells and Wellington, 1984, by the following unique combination of characters:

Dorsum ranges from greyish, yellow, light brown to orangish or reddish, but generally similar to the local substrate with irregular black spotting on the body, at least on the upper flanks; black around the orbit; circular or near circular pupil, sometimes slightly narrower than high; vertically elongated ear opening with uncommonly 3, or more often 4 ear lobules; maximum snout-vent length under 85 mm; head and body deep in form; tail is 1 to 1.5 times as long as the snout-vent length (largely modified from Storr 1968).

Skinks in the genus *Flamoscincus* are separated from those in the genus *Liopholis* (*sensu lato*) by having a dorsal colouration that is light rather than dark and dull; without a distinctive pattern of black longitudinal lines, stripes or rows of distinctive large well-formed and arranged blotches (those being diagnostic of *Liopholis*); ventral surfaces white rather than greyish (in *Liopholis*), a head that is deep, rather than either deep or flattened; a tail that is 1 to 1.5 times as long as the snout-vent length, versus one that is 1-2.2 times as long as the snout-vent length.

F. inornata in life is depicted in Storr, Smith and Johnstone (1981) on plate 12, picture 8, Brown (2014) on page 512 at top right and online at:

<https://www.flickr.com/photos/27897324@N07/8643603735/> and

<https://www.inaturalist.org/observations/154800471>

F. webberi is depicted in life in Swan *et al.* (2022) on page 190, Cogger (2014) on page 637 top right, Brown (2014) on page 512, second from top on left and online at:

<https://www.flickr.com/photos/jono-dashper/52944108999/> and

<https://www.flickr.com/photos/kristianbell/49068161166/> and

<https://www.inaturalist.org/observations/193928138>

and <https://www.inaturalist.org/observations/138471246>

and <https://www.inaturalist.org/observations/146359704>

and <https://www.inaturalist.org/observations/144336199>

F. arremteorum sp. nov. is depicted in life online at: <https://central-barkley-nt.naturemapr.org/sightings/4521640>

and <https://www.inaturalist.org/observations/153548243>

and <https://www.flickr.com/photos/whawha88/9432274553/>

F. yamatjiorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/24764589>

F. wiranguorum sp. nov. is depicted in life online at: <https://www.inaturalist.org/observations/97504181>

and <https://www.inaturalist.org/observations/67092211>

and <https://www.inaturalist.org/observations/149232330>

Distribution: *F. pitjantjatjaraorum* sp. nov. is a taxon associated with the Musgrave Ranges area in north-west South Australia and nearby east Western Australia, generally south of the Amadeus basin in the far south-west of the Northern Territory.

Conservation: While *F. pitjantjatjaraorum* sp. nov. is relatively range restricted by virtue of relevant biogeographical barriers, the remoteness of the region in terms of human activity offers the

species significant protection.

Long-term habitat destruction by feral or native animals is perhaps the biggest potential issue facing this taxon in the foreseeable future and to that extent populations of this and other species and subspecies restricted to this region, such as the recently described range restricted gecko *Diplodactylus (Yankunytjatjaragecko) ooh* Hoser, 2023 should have their populations monitored at regular intervals.

Etymology: *F. pitjantjatjaraorum* sp. nov. is named in reflection of the Pitjantjatjara people.

They are a group of native Aboriginal Australian peoples who have lived in the relevant part of South Australia for many thousands of years.

Between 1956 and 1963, the United Kingdom and their subservient Australian government conducted seven atomic bomb tests at the Maralinga site in north-west South Australia.

The radioactive clouds subsequently covered the lands of the Pitjantjatjara people with toxic nuclear waste, causing countless deaths, birth defects and ongoing sickness among the Pitjantjatjara people. Survivors continue to suffer the after effects of this damage generations on and without substantive compensation by the British and subservient Australian governments in breach of international laws.

FLAMOSCINCUS YAMATJIORUM SP. NOV.

LSIDDurn:lsid:zoobank.org:act:77885EDB-20A8-44D1-8786-7567791BAEE9

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R43655 collected from the Buntine Nature reserve, Buntine, 6613, Western Australia, Australia, Latitude -29.983333 S., Longitude 116.6 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, being specimen number R60037 collected from 6 km east of Buntine, Western Australia, Australia, Latitude -29.983333 S., Longitude 116.616667 E. and specimen number R58201 collected from 20 km north-east of Dalwallinu, Western Australia, Australia, Latitude -30.183333 S., Longitude 116.883333 E.

Diagnosis: Until now, almost all publishing herpetologists have viewed "*Egernia inornata* Rosen, 1905" as a single species, although in the past decade, most authors have placed the putative taxon within the genus *Liopholis* Fitzinger, 1843.

Contrary to this position, Wells and Wellington, 1985 regarded the putative species as composite and formally named the west New South Wales population (extending into nearby parts of South Australia and north-west Victoria) as a new species which they placed into the genus *Flamoscincus* Wells and Wellington, 1984, with a closely related type species of *Egernia kintorei* Stirling and Zietz, 1893.

The position of Wells and Wellington (1985, 1985) has been confirmed as correct following this assessment of published molecular evidence (e.g. Chapple *et al.* 2004, 2005 and 2008, Donnellan *et al.* 2002, Pyron *et al.* 2013 and others), assessment of well-known biogeographical barriers within the range of the putative taxon/taxa (e.g. the Flinders Ranges and various flood plains) as well as a reassessment of morphological divergences between populations, including those flagged by Glenn Storr in Storr (1968). This paper recognizes six species in the complex including *Flamoscincus inornata* (Rosen, 1905), herein restricted to the region near the Goldfields in inland south-east Western Australia, *F. webberi* Wells and Wellington, 1985 from the region encompassing south-west New South Wales, nearby parts of South Australia (east of the Flinders Ranges) as well as north-west Victoria and four newly named species.

These are: *F. yamatjiorum* sp. nov. from the far central west of Western Australia being found generally west of Lake Moore, *F. pitjantjatjaraorum* sp. nov. from the Musgrave Ranges area in north-west South Australia and nearby east Western Australia, generally south of the Amadeus basin in the far south-west of the Northern Territory, *F. arremteorum* sp. nov. from the Macdonnell Ranges area of central Australia and *F. wiranguorum* sp. nov. from the Eyre Peninsula and nearby parts of South Australia, generally east of the

Nullarbor, west of the Eyre Peninsula and south of the Eyrean and Centralian flood plains.

The six species are separated from one another by the following unique combinations of characters:

F. inornata is a light yellowish, creamy beige coloured lizard with scattered blackish spots on the dorsum and upper flanks, these spots are of irregular shape, but usually elongated in a dorso-posterior direction, more densely spaced on the dorsum than on the upper flank (absent on the lower flank) with those on the dorsum tending to form longitudinal lines.

Upper labials have 2 or 3 prominent black spots, slightly curved and elongated in an up-down manner; iris is beige and there are 38-42 midbody rows.

This species is larger than all others in the complex, having an adult snout-vent length of 79-84 mm, versus below 79 mm for all other species.

It is also more elongated and adapted to burrowing than the other species having a relatively longer tail (original) and proportionately shorter than average foreleg, being about 28 percent of the snout-vent length, versus 29-30 per cent for the other species (as a group).

F. webberi is similar to *F. inornata* as described above, but readily separated from that species by having dense black spotting on the majority of the flanks (being the upper two thirds), coalesced to form semi-broken irregular bands, while on the dorsum there is a much lesser number of black spots, also tiny in size (meaning far more black on the flanks than on the dorsum), the tiny black spots well-spaced apart and tending to be in a longitudinal arrangement, being most prominent on the rear of the neck and body and absent from the head and tail. Iris is light grey-brown to greyish-beige in colour. Usually four ear lobules.

The dorsum has a slight, brownish-orange tinge to the otherwise yellowish colour, generally slightly darker in colour than the preceding species (*F. inornata*).

F. arremteorum sp. nov. is a light reddish-orange lizard, with a distinctive concentration of black speckling and pigment on the upper flank along the dorso-lateral line, extending to the venter as a series of well-defined broken or unbroken lines around the region of the back of the neck and front limb. Iris is orange in colour. Usually four ear lobules.

Compared to all other species in the complex, *F. arremteorum* sp. nov. have a shorter than average tail, being 119.9 per cent of the snout-vent length, fewer subdigital lamellae under the fourth toe being an average of 22.2 and a lesser average number of palpebrals being 10.1.

F. pitjantjatjaraorum sp. nov. is separated from the other species in the *F. inornata* complex by their longer than average hindleg being about 38 percent of snout-vent length, versus 37 per cent in the other species in the complex, 34-38 mid-body rows, versus 37-44 in all other species in the complex; an average of 24.5 subdigital lamellae versus 23 in the rest of the complex (as a group) and an average of 11.4 upper palpebrals versus 10.4 for the rest of the complex (as a group). Iris is light yellow-brown.

F. yamatjiorum sp. nov. has a yellowish-brown dorsum and light orange iris. Black spotting coalesces on both dorsum and flanks and is of similar amounts on both, all of which extends some distance down the original tail. Usually three ear lobules (rarely four). Black spotting extends down the flank to beyond the demarcation line of the whitish lower flank. While all species in the complex have an elongated rectangular-shaped ear opening, in *F. yamatjiorum* sp. nov. this elongation is reduced as compared to all other species in the complex.

F. wiranguorum sp. nov. is readily separated from all other species in the complex by its distinctive light creamish-grey dorsal colouration, versus yellows, browns, orangish or reddish in the other species. Iris is dull grey-brown.

The black spotting is relatively dense and even in concentration on both dorsum and flanks and relative to each other. Exceptional to this is the banding that forms on the neck, which in this species also extends down the flanks of the body. The bands on the flanks extends down the lower flank and across the whitish lower flank interface to intrude the whitish lower flank.

All the six preceding species within the *F. inornata* complex, being

F. inornata, *F. webberi*, *F. arremteorum* sp. nov., *F. pitjantjatjaraorum* sp. nov., *F. yamatjiorum* sp. nov. and *F. wiranguorum* sp. nov. are readily separated from all other species within *Liopholis* Fitzinger, 1843 and *Flamoscincus* Wells and Wellington, 1984, by the following unique combination of characters:

Dorsum ranges from greyish, yellow, light brown to orangish or reddish, but generally similar to the local substrate with irregular black spotting on the body, at least on the upper flanks; black around the orbit; circular or near circular pupil, sometimes slightly narrower than high; vertically elongated ear opening with uncommonly 3, or more often 4 ear lobules; maximum snout-vent length under 85 mm; head and body deep in form; tail is 1 to 1.5 times as long as the snout-vent length (largely modified from Storr 1968).

Skinks in the genus *Flamoscincus* are separated from those in the genus *Liopholis* (*sensu lato*) by having a dorsal colouration that is light rather than dark and dull; without a distinctive pattern of black longitudinal lines, stripes or rows of distinctive large well-formed and arranged blotches (those being diagnostic of *Liopholis*); ventral surfaces white rather than greyish (in *Liopholis*), a head that is deep, rather than either deep or flattened; a tail that is 1 to 1.5 times as long as the snout-vent length, versus one that is 1-2.2 times as long as the snout-vent length.

F. inornata in life is depicted in Storr, Smith and Johnstone (1981) on plate 12, picture 8, Brown (2014) on page 512 at top right and online at:

<https://www.flickr.com/photos/27897324@N07/8643603735/> and

<https://www.inaturalist.org/observations/154800471>

F. webberi is depicted in life in Swan *et al.* (2022) on page 190, Cogger (2014) on page 637 top right, Brown (2014) on page 512, second from top on left and online at:

<https://www.flickr.com/photos/jono-dashper/52944108999/> and

<https://www.flickr.com/photos/kristianbell/49068161166/> and

<https://www.inaturalist.org/observations/193928138> and

<https://www.inaturalist.org/observations/138471246> and

<https://www.inaturalist.org/observations/146359704> and

<https://www.inaturalist.org/observations/144336199>

F. arremteorum sp. nov. is depicted in life online at:

<https://central-barkley-nt.naturemapr.org/sightings/4521640> and

<https://www.inaturalist.org/observations/153548243> and

<https://www.flickr.com/photos/whawha88/9432274553/>

F. yamatjiorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/24764589>

F. wiranguorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/97504181> and

<https://www.inaturalist.org/observations/67092211> and

<https://www.inaturalist.org/observations/149232330>

Distribution: *F. yamatjiorum* sp. nov. occurs in the far central west of Western Australia, generally west of Lake Moore. Populations from near Shark Bay are also tentatively referred to this species.

Conservation: While *F. yamatjiorum* sp. nov. is potentially relatively range restricted by virtue of relevant biogeographical barriers, the remoteness of the region in terms of human activity offers the species significant protection.

Long-term habitat destruction by feral or native animals is perhaps the biggest potential issue facing this taxon in the foreseeable future and to that extent populations of this and other species and subspecies restricted to this region should have their populations monitored at regular intervals.

Etymology: *F. yamatjiorum* sp. nov. is named in reflection of the Yamatji nation being the original indigenous inhabitants of the

region.

They had a continuous association with the relevant lands for many thousands of years before British colonizers committed a genocide on the people in the 1800's.

The survivors now eke out a miserable existence at the fringes of towns or in remote "settlements", living under discarded sheets of tin and scavenging what they can from the trash of the British invaders.

FLAMOSCINCUS WIRANGUORUM SP. NOV.

LSIDurn: [lsid:zoobank.org/act:BB950496-A017-4349-ADC6-01C84942778A](https://zoobank.org/act:BB950496-A017-4349-ADC6-01C84942778A)

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R3057 collected from Jungle Paddock, Yudnapinna, South Australia, Australia, Latitude -32.12 S., Longitude 137.15 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R3041 collected from Jungle Paddock, Yudnapinna, South Australia, Australia, Latitude -32.12 S., Longitude 137.15 E. 2/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R19917 collected from Cariewerloo Station, Eyre Peninsula, South Australia, Australia, Latitude -32.40 S., Longitude 137.23 E.

Diagnosis: Until now, almost all publishing herpetologists have viewed "*Egernia inornata* Rosen, 1905" as a single species, although in the past decade, most authors have placed the putative taxon within the genus *Liopholis* Fitzinger, 1843.

Contrary to this position, Wells and Wellington, 1985 regarded the putative species as composite and formally named the west New South Wales population (extending into nearby parts of South Australia and north-west Victoria) as a new species which they placed into the genus *Flamoscincus* Wells and Wellington, 1984, with a closely related type species of *Egernia kintorei* Stirling and Zietz, 1893.

The position of Wells and Wellington (1985, 1985) has been confirmed as correct following this assessment of published molecular evidence (e.g. Chapple *et al.* 2004, 2005 and 2008, Donnellan *et al.* 2002, Pyron *et al.* 2013 and others), assessment of well-known biogeographical barriers within the range of the putative taxon/taxa (e.g. the Flinders Ranges and various flood plains) as well as a reassessment of morphological divergences between populations, including those flagged by Glenn Storr in Storr (1968). This paper recognizes six species in the complex including *Flamoscincus inornata* (Rosen, 1905), herein restricted to the region near the Goldfields in inland south-east Western Australia, *F. webberi* Wells and Wellington, 1985 from the region encompassing south-west New South Wales, nearby parts of South Australia (east of the Flinders Ranges) as well as north-west Victoria and four newly named species.

These are: *F. wiranguorum* sp. nov. from the Eyre Peninsula and nearby parts of South Australia, generally east of the Nullarbor, west of the Eyre Peninsula and south of the Eyrean and Centralian flood plains, *F. yamatjiorum* sp. nov. from the far central west of Western Australia being found generally west of Lake Moore, *F. pitjantjatjaraorum* sp. nov. from the Musgrave Ranges area in north-west South Australia and nearby east Western Australia, generally south of the Amadeus basin in the far south-west of the Northern Territory and *F. arremteorum* sp. nov. from the Macdonnell Ranges area of central Australia.

The six species are separated from one another by the following unique combinations of characters:

F. inornata is a light yellowish, creamy beige coloured lizard with scattered blackish spots on the dorsum and upper flanks, these spots are of irregular shape, but usually elongated in a dorso-posterior direction, more densely spaced on the dorsum than on the upper flank (absent on the lower flank) with those on the dorsum tending to form longitudinal lines.

Upper labials have 2 or 3 prominent black spots, slightly curved and elongated in an up-down manner; iris is beige and there are 38-42 midbody rows.

This species is larger than all others in the complex, having an adult snout-vent length of 79-84 mm, versus below 79 mm for all other

species.

It is also more elongated and adapted to burrowing than the other species having a relatively longer tail (original) and proportionately shorter than average foreleg, being about 28 percent of the snout-vent length, versus 29-30 per cent for the other species (as a group).

F. webberi is similar to *F. inornata* as described above, but readily separated from that species by having dense black spotting on the majority of the flanks (being the upper two thirds), coalesced to form semi-broken irregular bands, while on the dorsum there is a much lesser number of black spots, also tiny in size (meaning far more black on the flanks than on the dorsum), the tiny black spots well-spaced apart and tending to be in a longitudinal arrangement, being most prominent on the rear of the neck and body and absent from the head and tail. Iris is light grey-brown to greyish-beige in colour. Usually four ear lobules.

The dorsum has a slight, brownish-orange tinge to the otherwise yellowish colour, generally slightly darker in colour than the preceding species (*F. inornata*).

F. arremteorum sp. nov. is a light reddish-orange lizard, with a distinctive concentration of black speckling and pigment on the upper flank along the dorso-lateral line, extending to the venter as a series of well-defined broken or unbroken lines around the region of the back of the neck and front limb. Iris is orange in colour. Usually four ear lobules.

Compared to all other species in the complex, *F. arremteorum sp. nov.* have a shorter than average tail, being 119.9 per cent of the snout-vent length, fewer subdigital lamellae under the fourth toe being an average of 22.2 and a lesser average number of palpebrals being 10.1.

F. pitjantjatjaraorum sp. nov. is separated from the other species in the *F. inornata* complex by their longer than average hindleg being about 38 percent of snout-vent length, versus 37 per cent in the other species in the complex, 34-38 mid-body rows, versus 37-44 in all other species in the complex; an average of 24.5 subdigital lamellae versus 23 in the rest of the complex (as a group) and an average of 11.4 upper palpebrals versus 10.4 for the rest of the complex (as a group). Iris is light yellow-brown.

F. yamatjiorum sp. nov. has a yellowish-brown dorsum and light orange iris. Black spotting coalesces on both dorsum and flanks and is of similar amounts on both, all of which extends some distance down the original tail. Usually three ear lobules (rarely four). Black spotting extends down the flank to beyond the demarcation line of the whitish lower flank. While all species in the complex have an elongated rectangular-shaped ear opening, in *F. yamatjiorum sp. nov.* this elongation is reduced as compared to all other species in the complex.

F. wiranguorum sp. nov. is readily separated from all other species in the complex by its distinctive light creamish-grey dorsal colouration, versus yellows, browns, orangish or reddish in the other species. Iris is dull grey-brown.

The black spotting is relatively dense and even in concentration on both dorsum and flanks and relative to each other. Exceptional to this is the banding that forms on the neck, which in this species also extends down the flanks of the body. The bands on the flanks extends down the lower flank and across the whitish lower flank interface to intrude the whitish lower flank.

All the six preceding species within the *F. inornata* complex, being *F. inornata*, *F. webberi*, *F. arremteorum sp. nov.*, *F. pitjantjatjaraorum sp. nov.*, *F. yamatjiorum sp. nov.* and *F. wiranguorum sp. nov.* are readily separated from all other species within *Liopholis* Fitzinger, 1843 and *Flamoscincus* Wells and Wellington, 1984, by the following unique combination of characters:

Dorsum ranges from greyish, yellow, light brown to orangish or reddish, but generally similar to the local substrate with irregular black spotting on the body, at least on the upper flanks; black around the orbit; circular or near circular pupil, sometimes slightly narrower than high; vertically elongated ear opening with uncommonly 3, or more often 4 ear lobules; maximum snout-vent length under 85 mm; head and body deep in form; tail is 1 to 1.5 times as long as the snout-vent length (largely modified from Storr 1968).

Skins in the genus *Flamoscincus* are separated from those in

the genus *Liopholis (sensu-lato)* by having a dorsal colouration that is light rather than dark and dull; without a distinctive pattern of black longitudinal lines, stripes or rows of distinctive large well-formed and arranged blotches (those being diagnostic of *Liopholis*); ventral surfaces white rather than greyish (in *Liopholis*), a head that is deep, rather than either deep or flattened; a tail that is 1 to 1.5 times as long as the snout-vent length, versus one that is 1-2.2 times as long as the snout-vent length.

F. inornata in life is depicted in Storr, Smith and Johnstone (1981) on plate 12, picture 8, Brown (2014) on page 512 at top right and online at:

<https://www.flickr.com/photos/27897324@N07/8643603735/> and

<https://www.inaturalist.org/observations/154800471>

F. webberi is depicted in life in Swan *et al.* (2022) on page 190, Cogger (2014) on page 637 top right, Brown (2014) on page 512, second from top on left and online at:

<https://www.flickr.com/photos/jono-dashper/52944108999/> and

<https://www.flickr.com/photos/kristianbell/49068161166/> and

<https://www.inaturalist.org/observations/193928138> and

<https://www.inaturalist.org/observations/138471246> and

<https://www.inaturalist.org/observations/146359704> and

<https://www.inaturalist.org/observations/144336199>

F. arremteorum sp. nov. is depicted in life online at:

<https://central-barkley-nt.naturemapr.org/sightings/4521640> and

<https://www.inaturalist.org/observations/153548243> and

<https://www.flickr.com/photos/whawha88/9432274553/>

F. yamatjiorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/24764589>

F. wiranguorum sp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/97504181> and

<https://www.inaturalist.org/observations/67092211> and

<https://www.inaturalist.org/observations/149232330>

Distribution: *F. wiranguorum sp. nov.* occurs on the Eyre Peninsula and nearby parts of South Australia, generally east of the Nullarbor, west of the Eyre Peninsula and south of the Eyrean and Centralian flood plains.

Conservation: While *F. wiranguorum sp. nov.* is potentially relatively range restricted by virtue of relevant biogeographical barriers, the remoteness of the region in terms of human activity offers the species significant protection.

Long-term habitat destruction by feral or native animals is perhaps the biggest potential issue facing this taxon in the foreseeable future and to that extent populations of this and other species and subspecies restricted to this region should have their populations monitored at regular intervals.

Etymology: *F. wiranguorum sp. nov.* is named in reflection of the Wirangu people, being the original aboriginal inhabitants of the Eyre Peninsula region of South Australia, who share a strong bond with the land, going back thousands of years. After the genocide in the 1800's the British invaders rounded up the survivors and housed the majority of them in squalid conditions in so-called "settlements" away from the major towns and agricultural lands.

FLAMOSCINCUS STRIATA WARAMUNGUORUM SUBSP. NOV.
LSIDurn:lsid:zoobank.org:act:9C7D1143-49C0-424E-AC0F-8C485667C0CE

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R21459 collected from between 13 and 38 miles south of Tennant Creek in the Northern Territory, Australia.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian

Museum, Perth, Western Australia, Australia, specimen numbers R21460 and R21461 collected from between 13 and 38 miles south of Tennant Creek in the Northern Territory, Australia.

Diagnosis: The putative species originally described as "*Egernia striata* Sternfeld, 1919" as currently recognized by publishing herpetologists in Australia and elsewhere is in fact a composite of species and subspecies, the unnamed forms all of which are described within this paper.

The relevant taxa are best placed in the genus *Flamoscincus* Wells and Wellington, 1984 on the basis of divergence from the type species within the genus *Egernia* Gray, 1832 and *Liopholis* Fitzinger, 1843.

The relevant species and subspecies are as follows:

Flamoscincus striata of the type subspecies, with a type locality of Hermannsburg in the Northern Territory is a taxon confined to the Macdonnell Ranges region of central Australia, including ranges to the immediate west and north to about Ti Tree in the Northern Territory.

F. striata warumungourum subsp. nov. is restricted to the region north of Wauchope in the Northern Territory.

F. striata yamajorum subsp. nov. is a taxon from the Pilbara region of north-west Australia and nearby parts of the central west of Western Australia.

F. kaprunorum sp. nov. is a taxon from the Goldfields region and adjacent parts of south-eastern Western Australia.

The preceding taxa are separated from one another by the following combinations of characters:

Nominate *F. striata* has a dorsum and upper flanks a dark reddish orange colour with longitudinal stripes caused by darkening of the lateral edges of the scales, present on the mid dorsum only (usually three lines being vertebral and paravertebral), these same lines being broken as one moves to the outer edges of the dorsum and upper flank. Iris is a dark reddish brown. There is obvious darker reddish-brown spotting on the anterior surface of the top of the head on top of the otherwise lighter reddish-brown background. Upper labials are mainly white, but with dull pinkish-orange on the anterior edges, usually more-so near the lower edge. 39-41 mid-body rows (separating it from *F. kaprunorum sp. nov.* with 41-43 mid-body rows) 13-15 upper palpebrals; 8-9 supralabials.

F. striata warumungourum subsp. nov. is very similar to the nominate form of *F. striata* but usually a lighter orangish colour above. It is separated from *F. striata* and all other subspecies and species within the complex by having particularly thick and bold vertebral and paravertebral lines, combined with significantly reduced density of darker spotting on the sides of the dorsum and upper flank as compared to *F. striata*.

F. striata warumungourum subsp. nov. also has reduced dark on the anterior edges of the upper labials, making them almost wholly white, with white patches also present on scales behind the eye and above the labials. Iris is a bright orange colour.

F. striata yamajorum subsp. nov. is separated from the other taxa in the complex by the bright orange dorsum, an iris that is orange at the centre and from top to bottom and being bounded by yellow on the outer edges laterally. Upper labials are wholly white at the lower edge and demarcated orange on the upper edge. There are scattered white markings (smudges) on the rear of the sides of the head and on the supraciliaries, where they commonly appear as small white spots. The ear opening is more than half as wide as high, versus not so in the other species and subspecies in the complex.

Lower flanks are white.

F. kaprunorum sp. nov. is separated from all subspecies of *F. striata* by its faintly striped pale pinkish-brown dorsum, white lower flanks and having 41-43 mid-body rows, versus 39-41 in all subspecies of *F. striata*.

In appearance, this species is superficially similar to *F. kintorei* (Stirling and Zietz, 1893), but agrees more with *F. striata* in that it has 7 upper labials (versus 8 in *F. kintorei*), a maximum snout-vent length of under 120 mm, versus over 150 mm in *F. kintorei*, less than the 46 or more mid-body-rows seen in *F. kintorei* and triangular ear lobules (versus truncate in *F. kintorei*).

Iris of *F. kaprunorum sp. nov.* is dull orangish-brown.

F. striata of all subspecies and *F. kaprunorum sp. nov.* are

separated from all other species within the genus *Flamoscincus* Wells and Wellington, 1984 by the following suite of characters: Snout-vent length less than 120 mm, strongly vertically elliptical pupil; dorsum pinkish, orangish or reddish-brown, with at least three longitudinal stripes of darker colour (not black or blackish); no black or blackish pigment of any sort on the dorsum or flanks; flanks gradually lightening on the lower surfaces to become either whitish or yellow; usually 7 upper labials; 2 presuboculars; less than 44 mid-body rows; adult snout-vent length of between 90 and 115 mm. Skinks in the genus *Flamoscincus* are separated from the morphologically similar genus *Liopholis* Fitzinger, 1843 by the absence of a dorsal pattern that is dark and dull, (versus pale and/or bright, e.g. orangish or pink) and absence of a well patterned dorsum and flanks with longitudinal lines, stripes, or rows of well-defined and edged blotches; an absence of grey ventral surfaces (versus whitish or yellow in *Flamoscincus*). Head and body in *Flamoscincus* species are always deep, versus not so in *Liopholis*. Tail in *Flamoscincus* species is 1 to 1.5 times the length of the snout vent (body), versus 1-2 times in *Liopholis*.

F. striata of the type subspecies in life is depicted in Brown 2014 on page 511, bottom two images and online at:

<https://www.inaturalist.org/observations/190394717>

and

<https://www.inaturalist.org/observations/145551052>

and

<https://www.inaturalist.org/observations/68722829>

F. kaprunorum sp. nov. in life is depicted in Cogger (2014) on page 642 at top left as well as in Storr, Smith and Johnstone (1981) plate 12, image 8.

F. striata waramungorum subsp. nov. is depicted in life online at: <https://www.inaturalist.org/observations/89404393>

Distribution: *F. striata warumungourum subsp. nov.* is restricted to the region north of Wauchope in the Northern Territory including Tennant Creek and environs, but not extending to the tropics or into the Barkly Tableland.

Conservation: The arid habitat, being of little use to humans and remote location where this taxon occurs, makes it of little immediate conservation concern.

Etymology: *F. waramungorum sp. nov.* is named in honour of the Waramungu people, the original native inhabitants of the region around Tennant Creek, being the general area these lizards are found.

In January 1983, with fellow herpetologist Charles Acheson, we camped on the side of the main Stuart Highway to sleep. We slept in the back of a large van. The following morning we woke to find a heavenly "tin spot" with sheets of metal strewn across the surrounding semi-arid lands.

We lifted bits of metal finding *F. waramungorum sp. nov.* and other species of herpetofauna, only to be bailed up by some Waramungu people who complained that we were wrecking their home! They were living and sleeping under some of the bits of tin.

After convincing the natives that we did not want to kill them, the Aboriginals befriended us and took us to yet more "tin spots" where we were able to find even more herpetofauna.

FLAMOSCINCUS STRIATA YAMAJIURUM SUBSP. NOV.

LSIDDurn:lsid:zoobank.org:act:FFB6C06A-8918-4F7C-801E-B97E5A62A97F

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R13088 collected from Woodstock, near Marble Bar, Pilbara Region, Western Australia, Australia, Latitude -21.617 S., Longitude 118.950 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R13089 and R13455 collected from Woodstock, near Marble Bar, Pilbara Region, Western Australia, Australia, Latitude -21.617 S., Longitude 118.950 E., and 2/ Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R25136 and R25137 collected from 3 km south-east of Turee Creek, Western Australia, Australia, Latitude -23.633333 S., Longitude 118.666667 E.

Diagnosis: The putative species originally described as "*Egernia striata* Sternfeld, 1919" as currently recognized by publishing herpetologists in Australia and elsewhere is in fact a composite of species and subspecies, the unnamed forms all of which are described within this paper.

The relevant taxa are best placed in the genus *Flamoscincus* Wells and Wellington, 1984 on the basis of divergence from the type species within the genus *Egernia* Gray, 1832 and *Liopholis* Fitzinger, 1843.

The relevant species and subspecies are as follows:

Flamoscincus striata of the type subspecies, with a type locality of Hermannsburg in the Northern Territory is a taxon confined to the Macdonnell Ranges region of central Australia, including ranges to the immediate west and north to about Ti Tree in the Northern Territory.

F. striata warumungourum subsp. nov. is restricted to the region north of Wauchope in the Northern Territory.

F. striata yamajorum subsp. nov. is a taxon from the Pilbara region of north-west Australia and nearby parts of central west of Western Australia.

F. kaprunorum sp. nov. is a taxon from the Goldfields region and adjacent parts of south-eastern Western Australia.

The preceding taxa are separated from one another by the following combinations of characters:

Nominate *F. striata* has a dorsum and upper flanks a dark reddish orange colour with longitudinal stripes caused by darkening of the lateral edges of the scales, present on the mid dorsum only (usually three lines being vertebral and paravertebral), these same lines being broken as one moves to the outer edges of the dorsum and upper flank. Iris is a dark reddish brown. There is obvious darker reddish-brown spotting on the anterior surface of the top of the head on top of the otherwise lighter reddish-brown background. Upper labials are mainly white, but with dull pinkish-orange on the anterior edges, usually more-so near the lower edge. 39-41 mid-body rows (separating it from *F. kaprunorum sp. nov.* with 41-43 mid-body rows) 13-15 upper palpebrals; 8-9 supralabials.

F. striata warumungourum subsp. nov. is very similar to the nominate form of *F. striata* but usually a lighter orangish colour above. It is separated from *F. striata* and all other subspecies and species within the complex by having particularly thick and bold vertebral and paravertebral lines, combined with significantly reduced density of darker spotting on the sides of the dorsum and upper flank as compared to *F. striata*.

F. striata warumungourum subsp. nov. also has reduced dark on the anterior edges of the upper labials, making them almost wholly white, with white patches also present on scales behind the eye and above the labials. Iris is a bright orange colour.

F. striata yamajorum subsp. nov. is separated from the other taxa in the complex by the bright orange dorsum, an iris that is orange at the centre and from top to bottom and being bounded by yellow on the outer edges laterally. Upper labials are wholly white at the lower edge and demarcated orange on the upper edge. There are scattered white markings (smudges) on the rear of the sides of the head and on the supraciliaries, where they commonly appear as small white spots. The ear opening is more than half as wide as high, versus not so in the other species and subspecies in the complex.

Lower flanks are white.

F. kaprunorum sp. nov. is separated from all subspecies of *F. striata* by its faintly striped pale pinkish-brown dorsum, white lower flanks and having 41-43 mid-body rows, versus 39-41 in all subspecies of *F. striata*.

In appearance, this species is superficially similar to *F. kintorei* (Stirling and Zietz, 1893), but agrees more with *F. striata* in that it has 7 upper labials (versus 8 in *F. kintorei*), a maximum snout-vent length of under 120 mm, versus over 150 mm in *F. kintorei*, less than the 46 or more mid-body-rows seen in *F. kintorei* and triangular ear lobules (versus truncate in *F. kintorei*).

Iris of *F. kaprunorum sp. nov.* is dull orangish-brown.

F. striata of all subspecies and *F. kaprunorum sp. nov.* are separated from all other species within the genus *Flamoscincus* Wells and Wellington, 1984 by the following suite of characters: Snout-vent length less than 120 mm, strongly vertically elliptical

pupil; dorsum pinkish, orangish or reddish-brown, with at least three longitudinal stripes of darker colour (not black or blackish); no black or blackish pigment of any sort on the dorsum or flanks; flanks gradually lightening on the lower surfaces to become either whitish or yellow; usually 7 upper labials; 2 presuboculars; less than 44 mid-body rows; adult snout-vent length of between 90 and 115 mm.

Skinks in the genus *Flamoscincus* are separated from the morphologically similar genus *Liopholis* Fitzinger, 1843 by the absence of a dorsal pattern that is dark and dull, (versus pale and/or bright, e.g. orangish or pink) and absence of a well patterned dorsum and flanks with longitudinal lines, stripes, or rows of well-defined and edged blotches; an absence of grey ventral surfaces (versus whitish or yellow in *Flamoscincus*). Head and body in *Flamoscincus* species are always deep, versus not so in *Liopholis*. Tail in *Flamoscincus* species is 1 to 1.5 times the length of the snout vent (body), versus 1-2 times in *Liopholis*.

F. striata of the type subspecies in life is depicted in Brown 2014 on page 511, bottom two images and online at:

<https://www.inaturalist.org/observations/190394717>

and

<https://www.inaturalist.org/observations/145551052>

and

<https://www.inaturalist.org/observations/68722829>

F. kaprunorum sp. nov. in life is depicted in Cogger (2014) on page 642 at top left as well as in Storr, Smith and Johnstone (1981) plate 12, image 8.

F. striata warumungourum subsp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/89404393>

Distribution: *F. striata yamajorum subsp. nov.* is a taxon from the Pilbara region of north-west Australia and nearby parts of central west of Western Australia.

Conservation: The arid habitat, being of little use to humans and remote location where this taxon occurs, makes it of little immediate conservation concern.

Etymology: *F. striata yamajorum subsp. nov.* is named in honour of the Yamaji people, being some of the original Aboriginal inhabitants of the Pilbara region of north-west Australia.

FLAMOSCINCUS KAPRUNORUM SP. NOV.

LSIDurn:lsid:zoobank.org:act:96845A8C-7799-4064-B8B5-8FC452228133

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R13027 collected from Jumia Hill, Western Australia, Australia, Latitude -30.9 S., Longitude 127.733333 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R146984 and R146969 collected from Ora banda, Western Australia, Australia, Latitude -30.393333 S., Longitude 121.1675 E.

Diagnosis: The putative species originally described as "*Egernia striata* Sternfeld, 1919" as currently recognized by publishing herpetologists in Australia and elsewhere is in fact a composite of species and subspecies, the unnamed forms all of which are described within this paper.

The relevant taxa are best placed in the genus *Flamoscincus* Wells and Wellington, 1984 on the basis of divergence from the type species within the genus *Egernia* Gray, 1832 and *Liopholis* Fitzinger, 1843.

The relevant species and subspecies are as follows:

Flamoscincus striata of the type subspecies, with a type locality of Hermannsburg in the Northern Territory is a taxon confined to the Macdonnell Ranges region of central Australia, including ranges to the immediate west and north to about Ti Tree in the Northern Territory.

F. striata warumungourum subsp. nov. is restricted to the region north of Wauchope in the Northern Territory.

F. striata yamajorum subsp. nov. is a taxon from the Pilbara region of north-west Australia and nearby parts of central west of Western Australia.

F. kaprunorum sp. nov. is a taxon from the Goldfields region and adjacent parts of south-eastern Western Australia.

The preceding taxa are separated from one another by the

following combinations of characters:

Nominate *F. striata* has a dorsum and upper flanks a dark reddish orange colour with longitudinal stripes caused by darkening of the lateral edges of the scales, present on the mid dorsum only (usually three lines being vertebral and paravertebral), these same lines being broken as one moves to the outer edges of the dorsum and upper flank. Iris is a dark reddish brown. There is obvious darker reddish-brown spotting on the anterior surface of the top of the head on top of the otherwise lighter reddish-brown background. Upper labials are mainly white, but with dull pinkish-orange on the anterior edges, usually more-so near the lower edge. 39-41 mid-body rows (separating it from *F. kaprunorum sp. nov.* with 41-43 mid-body rows) 13-15 upper palpebrals; 8-9 supralabials.

F. striata warumungourum subsp. nov. is very similar to the nominate form of *F. striata* but usually a lighter orangish colour above. It is separated from *F. striata* and all other subspecies and species within the complex by having particularly thick and bold vertebral and paravertebral lines, combined with significantly reduced density of darker spotting on the sides of the dorsum and upper flank as compared to *F. striata*.

F. striata warumungourum subsp. nov. also has reduced dark on the anterior edges of the upper labials, making them almost wholly white, with white patches also present on scales behind the eye and above the labials. Iris is a bright orange colour.

F. striata yamajorum subsp. nov. is separated from the other taxa in the complex by the bright orange dorsum, an iris that is orange at the centre and from top to bottom and being bounded by yellow on the outer edges laterally. Upper labials are wholly white at the lower edge and demarcated orange on the upper edge. There are scattered white markings (smudges) on the rear of the sides of the head and on the supraciliaries, where they commonly appear as small white spots. The ear opening is more than half as wide as high, versus not so in the other species and subspecies in the complex.

Lower flanks are white.

F. kaprunorum sp. nov. is separated from all subspecies of *F. striata* by its faintly striped pale pinkish-brown dorsum, white lower flanks and having 41-43 mid-body rows, versus 39-41 in all subspecies of *F. striata*.

In appearance, this species is superficially similar to *F. kintorei* (Stirling and Zietz, 1893), but agrees more with *F. striata* in that it has 7 upper labials (versus 8 in *F. kintorei*), a maximum snout-vent length of under 120 mm, versus over 150 mm in *F. kintorei*, less than the 46 or more mid-body-rows seen in *F. kintorei* and triangular ear lobules (versus truncate in *F. kintorei*).

Iris of *F. kaprunorum sp. nov.* is dull orangish-brown.

F. striata of all subspecies and *F. kaprunorum sp. nov.* are separated from all other species within the genus *Flamoscincus* Wells and Wellington, 1984 by the following suite of characters: Snout-vent length less than 120 mm, strongly vertically elliptical pupil; dorsum pinkish, orangish or reddish-brown, with at least three longitudinal stripes of darker colour (not black or blackish); no black or blackish pigment of any sort on the dorsum or flanks; flanks gradually lightening on the lower surfaces to become either whitish or yellow; usually 7 upper labials; 2 presuboculars; less than 44 mid-body rows; adult snout-vent length of between 90 and 115 mm. Skinks in the genus *Flamoscincus* are separated from the morphologically similar genus *Liopholis* Fitzinger, 1843 by the absence of a dorsal pattern that is dark and dull, (versus pale and/or bright, e.g. orangish or pink) and absence of a well patterned dorsum and flanks with longitudinal lines, stripes, or rows of well-defined and edged blotches; an absence of grey ventral surfaces (versus whitish or yellow in *Flamoscincus*). Head and body in *Flamoscincus* species are always deep, versus not so in *Liopholis*. Tail in *Flamoscincus* species is 1 to 1.5 times the length of the snout vent (body), versus 1-2 times in *Liopholis*.

F. kaprunorum sp. nov. in life is depicted in Cogger (2014) on page 642 at top left as well as in Storr, Smith and Johnstone (1981) plate 12, image 8.

F. striata of the type subspecies in life is depicted in Brown 2014 on page 511, bottom two images and online at:

<https://www.inaturalist.org/observations/190394717>
and

<https://www.inaturalist.org/observations/145551052>
and

<https://www.inaturalist.org/observations/68722829>

F. striata warumungourum subsp. nov. is depicted in life online at: <https://www.inaturalist.org/observations/89404393>

Distribution: *F. kaprunorum sp. nov.* is a taxon from the Goldfields region and adjacent parts of south-eastern Western Australia.

Conservation: The arid habitat, being of little use to humans and remote location where this taxon occurs, makes it of little immediate conservation concern.

Etymology: *F. kaprunorum sp. nov.* is named in recognition of the Kaprun people, being some of the original Aboriginal inhabitants of the Goldfields region and adjacent parts of south-eastern Western Australia.

PSEUDOEGERNIA GEN. NOV.

LSIDurn:lsid:zoobank.org:act:559074D9-35B0-45ED-B001-E2207C11C2B6

Type species: *Pseudoegernia perthensis sp. nov.* (this paper).

Diagnosis: The three species within the genus *Pseudoegernia gen. nov.* are separated from all other species within *Egernia sensu lato* as outlined by Hoser (2018a), being all the species listed in the table in that paper on page 52 and including the genus *Woolfscincus* Hoser, 2018 by conforming to the diagnosis for species within the *Liopholis whitii* LaCépède, 1804 species group as detailed in this paper in the description of *Liopholis jackyhoserae sp. nov.* above in this paper (being *L. jackyhoserae sp. nov.*, *L. compressicauda* (Quoy and Gaimard, 1824), *L. coplandi* Wells and Wellington, 1985 and *Liopholis whitii* LaCépède, 1804), but instead having well keeled rather than slightly keeled or (more usually) smooth dorsal scales, as well as a moderately depressed head and body (versus one that is not so in all other *Liopholis* Fitzinger, 1843 and the associated genus *Flamoscincus* Wells and Wellington, 1984).

Further description of this genus (as defined above) can be found in Storr (1968) (also based on the species content below, being the two taxa named at the time of Storr, 1968), under the heading "*Egernia pulchra pulchra*" on pages 53-54 of that paper.

Distribution: Cooler and/or moister and nearby hilly parts of far south-west Australia including some offshore islands.

Etymology: The name "*Pseudoegernia*" means not a genuine "*Egernia*".

Genuine *Egernia*, type species being "*Tiliqua cunninghami* Gray, 1832" is a large spinose, saxicoline genus comprising several species (those species being correctly identified and named by Wells and Wellington in 1984 and 1985) confined to south-east Australia, between the Granite Belt of far south-east Queensland and the ranges of far south-east South Australia, including New South Wales and Victoria, mainly in the hilly parts of the western rain shadow of the Great Dividing Range and excluding Tasmania.

Content: *Pseudoegernia perthensis sp. nov.* (type species); *P. pulchra* (Werner, 1910); *P. longicauda* (Ford, 1963).

PSEUDOEGERNIA PERTHENSIS SP. NOV.

LSIDurn:lsid:zoobank.org:act:639B205D-1208-4F76-926F-481E86A6FF28

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R16784 collected at Mount William in the Darling Range of Western Australia, Australia, Latitude -32.933333 S., Longitude 116.016667 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers R16785 and R16786 both collected at Mount William in the Darling Range of Western Australia, Australia, Latitude -32.933333 S., Longitude 116.016667 E.

Diagnosis: Until now, *Pseudoegernia perthensis sp. nov.* has been treated as a northern population of *P. pulchra* (Werner, 1910), type locality Torbay, Western Australia, Australia a species originally placed by Werner in the genus *Egernia* Gray, 1832 and More recently placed in the genus *Liopholis* Fitzinger, 1843 by publishing authors in Australia, since about 1984, 1985, following from the works of Wells and Wellington (1984, 1985), *sensu* Cogger (2014).

The taxon formally described as “*Egernia pulchra longicauda* Ford, 1963”, type locality, Favourite Island, Jurian Bay, Western Australia, Australia is herein recognized as a distinct species as well.

The three preceding named taxa comprise the entirety of the genus *Pseudoegernia* gen. nov. for which *P. perthensis* sp. nov. is the type species.

P. longicauda (Ford, 1963) is separated from the other two species by the tail being 180-210 percent of the snout-vent length, versus 150-179 percent in *P. perthensis* sp. nov. and *P. pulchra* (Werner, 1910); an ear opening that is suffused with orange as well as an orange abdomen.

P. perthensis sp. nov. and *P. pulchra* have separated nasals, versus in contact in *P. longicauda*.

P. perthensis sp. nov. is separated from *P. pulchra* by having a longer hindleg being 39-41 percent of the snout-vent length, versus 33-38 percent of the snout-vent length in *P. pulchra* and 8 supraciliaries, versus 6-7.

The three preceding species being all the species within the genus *Pseudoegernia* gen. nov. are separated from all other species within *Egernia sensu lato* as outlined by Hoser (2018a), being all the species listed in the table in that paper on page 52 and including the genus *Woolfscincus* Hoser, 2018 by conforming to the diagnosis for species within the *Liopholis whitii* LaCépède, 1804 species group as detailed in this paper in the description of *Liopholis jackyhoseriae* sp. nov. above in this paper (being *L. jackyhoseriae* sp. nov., *L. compressicauda* (Quoy and Gaimard, 1824), *L. coplandi* Wells and Wellington, 1985 and *Liopholis whitii* LaCépède, 1804), but instead having well keeled rather than slightly keeled or (more usually) smooth dorsal scales, as well as a moderately depressed head and body (versus one that is not so in all other *Liopholis* Fitzinger, 1843 and the associated genus *Flamoscincus* Wells and Wellington, 1984).

Further description of this genus (as defined above) can be found in Storr (1968) (also based on the species content below, being the two taxa named at the time of Storr, 1968), under the heading “*Egernia pulchra pulchra*” on pages 53-54 of that paper.

L. perthensis sp. nov. is depicted in life online at:

<https://www.flickr.com/photos/jaricornelis/52461682672/>

L. pulchra is depicted in life in Storr, Smith and Johnstone (1981) on plate 12 in picture 2, Wilson and Swan (2021) on page 399 middle right and Cogger (2014) on page 641 at top right and online at: <https://biocache.ala.org.au/occurrences/e568b934-5c12-47c9-9703-f30d70902216>

and https://www.flickr.com/photos/zimny_anders/52445225598/

and <https://www.flickr.com/photos/mattsummerville/52361688219/>

and <https://www.inaturalist.org/observations/198282766>

and <https://www.inaturalist.org/observations/143547401>

L. longicauda is depicted in life in Storr, Smith and Johnstone (1981) on plate 12, in picture 1 and Wilson and Swan (2021) on page 399 middle left and online at:

<https://www.nacc.com.au/threatenedspecies-week-jurien-bay-skink-liopholis-pulchra-longicauda/>

Distribution: *P. perthensis* sp. nov. appears to be confined to the Darling Range area west of the Perth sand dunes, in south-west Western Australia, Australia.

Etymology: Named in reflection of the environs of where it occurs.

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CONFLICTS OF INTEREST - NONE.