

The inevitable further break up of the skink genus *Saproscincus* Wells and Wellington (1984) into two genera, each split to subgenera and the formal description of a new species from North Queensland, Australia.

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ABSTRACT

The skink genus *Saproscincus* Wells and Wellington (1984), type species *Mococa mustelina* O'Shaughnessy, 1874 comprises a diverse assemblage of skinks from eastern Australia.

Wells and Wellington (1985) considered erecting a new genus for the *Lygosoma challengerii* Boulenger, 1887 group, but deferred to Allen Greer, who at the time was working on the relevant species.

For the species *Lampropholis tetradactyla* Greer and Kluge, 1980, Wells and Wellington (1985) said "We herein only tentatively include this species in *Saproscincus*."

Since 1985, no further movement has been done with regards of the generic assignments of species or species groups placed within *Saproscincus* by Wells and Wellington (1985) and Greer has been retired from herpetology for many years.

In view of more recent molecular studies, including those of Moussalli *et al.* (2005) and Pyron *et al.* (2013), *Saproscincus* is formally divided into two genera, each reasonably estimated to be divergent from one another more than 10 MYA.

Furthermore each of these are divided into two subgenera.

The species originally described as *Lampropholis basiliscus* Ingram and Rawlinson, 1981, with a type locality of Charmillin Creek, via Ravenshoe, North Queensland, Latitude -17.43 S., Longitude 145.31 E. has also long been known to comprise two very divergent populations, with molecular evidence of Moussalli *et al.* (2005) confirming that they are of two species.

The previously unnamed southern population, with a distribution centred on Mount Spec, the Paluma Range and Hinchinbrook Island is herein formally named as a new species *Obscuraskinkus neglectus* sp. nov..

The putative species "*S. czechurai* (Ingram and Rawlinson, 1981)", with a type locality of Charmillin Creek, via Ravenshoe, North Queensland, Latitude -17.43 S., Longitude 145.31 E. is also split in line with morphological differences by location and molecular divergence into two subspecies, across the low-lying region biogeographical barrier between Cairns and Port Douglas, Queensland (the Black Mountain Corridor), with the northern form formally named *Obscuraskinkus (Sparsuskinkus) czechurai divergens* subsp. nov..

Keywords: Taxonomy; nomenclature; Australia; Skink; lizard; Scincidae; Queensland; New South Wales; *Saproscincus*; new genus; *Obscuraskinkus*; new subgenus; *Tractuoscincus*; *Sparsuskinkus*; new species; *neglectus*; new subspecies; *divergens*.

INTRODUCTION

The skink genus *Saproscincus* Wells and Wellington (1984), type species *Mococa mustelina* O'Shaughnessy, 1874 comprises a diverse assemblage of skinks from eastern Australia.

Wells and Wellington (1984) erected the genus as a split from the genus *Lampropholis* Fitzinger, 1843 type species *Lygosoma guichenoti* Duméril and Bibron, 1839 which included a far greater number of species including the relevant species he transferred to *Saproscincus*.

Wells and Wellington (1985) stated that they had also considered erecting a new genus for the *Lygosoma challengerii* Boulenger, 1887 group, also placed within *Saproscincus* but deferred to Allen Greer, who at the time was working on the relevant species.

For the species *Lampropholis tetradactyla* Greer and Kluge, 1980, Wells and Wellington (1985) said "We herein only tentatively include this species in *Saproscincus*."

Since 1985, no further movement has been done with regards of the generic assignments of species or species groups placed within *Saproscincus* by Wells and Wellington (1985) and Greer has been retired from herpetology for many years.

More recent molecular studies, including those of Moussalli *et al.* (2005) and Pyron *et al.* (2013), have confirmed that the genus *Saproscincus* as originally conceived by Wells and Wellington (1984) and again in 1985 does comprise a monophyletic assemblage of species.

However the studies of Moussalli *et al.* (2005) and Pyron *et al.* (2013) have repeatedly confirmed that *Saproscincus* is divided into two well-defined groups, being the so-called northern and southern clades.

Within each are two distinct sets of species.

In light of these divergences by phylogeny and previously known divergences in morphology, *Saproscincus* is formally divided into two genera, each reasonably to be estimated to be divergent from one another more than 10 MYA.

Furthermore each of these are divided into two subgenera of very similar antiquity in terms of divergence dates.

The species *Obscuraskinkus neglectus* sp. nov. treated until now as a form of putative *Lampropholis basiliscus* Ingram and Rawlinson, 1981 is the type species for the genus *Obscuraskinkus* gen. nov.

The species originally described as *Lampropholis basiliscus* Ingram and Rawlinson, 1981, with a type locality of Charmillin Creek, via Ravenshoe, North Queensland, Latitude -17.43 S., Longitude 145.31 E., has long been known to comprise two divergent forms.

The molecular evidence of Moussalli *et al.* (2005) confirmed that they are of two species and yet no one has named the unnamed southern form as a new species in the intervening 17 years.

Rather than risk the species expiring through general indifference by either the scientific community or wildlife enthusiasts in general, I take the opportunity to formally name the southern form as a new species *Obscuraskinkus neglectus* sp. nov., which as already mentioned is the type species for the new genus.

The putative species "S. *czechurai* (Ingram and Rawlinson, 1981)", with a type locality of Charmillin Creek, via Ravenshoe, North Queensland, Latitude -17.43 S., Longitude 145.31 E. was also flagged by Moussalli *et al.* (2005) as being potentially more than one taxon and so was inspected closely in terms of this audit.

MATERIALS AND METHODS

A review of the relevant literature was undertaken.

This was to ascertain available synonym names of any for the relevant taxa.

Furthermore the literature as well as live and dead specimens of all species were inspected to confirm the generic assignments as outlined in the abstract and introduction.

Each putative species within the genus was also audited to confirm whether they were valid and also to see if other forms remained either unrecognized, improperly synonymised, or alternatively should be synonymised.

This action incorporated reviewing all listed and known synonyms for the various forms assigned to *Saproscincus* by Wells and Wellington in 1984 and 1985, before arriving at the taxonomy for all relevant species and genera as outlined in the abstract and introduction.

I conducted field work collecting a number of the relevant species (but not all) and also viewed specimens in museums and photos with good quality location data.

Populations of species were also checked against known biogeographical barriers to see if there were likely unrecognized taxa.

In terms of the putative species *Obscuraskinkus basiliscus* Ingram and Rawlinson, 1981, it was checked closely to confirm the likely break zone/s between populations and also inspected to see if there were any known intermediates between the two putative forms.

Literature relevant to the taxonomy and nomenclature adopted within this paper in terms of the putative species within *Saproscincus* as originally conceived by Wells and Wellington in 1984 and 1985 included Ahl (1925), Boettger (1879), Boulenger (1897), Cogger (2014), Cogger *et al.* (1983), Capocaccia (1961), Couper and Kiem (1988), Daly and Hoye (2016), De Vis (1888), Duméril and Bibron (1839), Fitzinger (1843), Greer (1967, 1974, 1976, 1989), Greer and Kluge (1980), Hawkeswood (2021), Hines *et al.* (2015), Hoskin (2013), Ingram (1991, 1994), Ingram and Rawlinson (1981), Longman (1918), Moussalli *et al.* (2005), Muñoz *et al.* (2016), O'Shaughnessy (1874, 1879), Peters (1878), Peters and Doria (1878), Pyron *et al.* (2013), Ride *et al.* (1999), Sadlier (1998), Sadlier *et al.* (1999, 2005), Smith (1937), Swan *et al.* (2017), Virkki *et al.* (2012), Wells and Wellington (1984, 1985), Werner (1903), Wilson (2015), Wilson and Knowles (1988), Wilson and Swan (2017) and all relevant sources cited therein.

RESULTS

The genus-level split indicated via the phylogenies of Moussalli *et al.* (2005) and Pyron *et al.* (2013) was a two way split of *Saproscincus* into two genera and a further split of each into two subgenera.

The three new entities have no available synonyms and so are formally named in this paper according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended online since.

Relevant rulings of the ICZN with regards to the correct legal nomenclature were noted, including ICZN (1991, 2001 and 2021).

At the species level, I note that the list presented in this paper for all species within *Saproscincus sensu lato* is greater than most contemporary lists, including those published by Cogger (2014) and Wilson and Swan (2017).

While the species included in those books are also included herein, I note the following changes as well.

Relying on the phylogeny of Moussalli *et al.* (2005), *S. mustelina* (O'Shaughnessy, 1874) is split three ways, best described as north, central and southern, with names available for each form, these being *S. ritchiei* Wells and Wellington, 1985 for the northern form (north of the Hunter Valley), *S. mustelina* (O'Shaughnessy, 1874) for the Sydney form and *S. sonderi* (Peters, 1878) for the Victorian form.

The three first available names are used for each taxon.

Along with *S. orarius* Sadlier, 1998, a species similar to the type form of *S. mustelina* these four species form the nominate subgenus of *Saproscincus*.

Each of *S. challengerii* (Boulenger, 1887), *S. eungellaensis* Sadlier, Couper, Colgan, Vanderduys and Rickard, 2005, *S. rosei* Wells and Wellington, 1985 and *S. spectabilis* (De Vis, 1888) are recognized as valid and placed in the subgenus *Tractuoscincus* subgen. nov., within *Saproscincus* Wells and Wellington, 1985.

S. galli Wells and Wellington, 1985, with a type locality of Dorrigo, NSW, Australia is herein treated as a synonym of *S. rosei* Wells and Wellington, 1985 with a type locality of Barrington Tops National Park, NSW, Australia.

I note however that no DNA samples from the putative species *S. galli* were analysed by Moussalli *et al.* (2005) and so the synonymisation herein is tentative and may be subjected to change in the event of contradictory evidence emerging.

Dorrigo and Barrington Tops are about 376 km apart by road and about 200 km apart in a straight line. Both sit south of the NSW Queensland border and north of the Hunter Valley, being the two main relevant biogeographical barriers.

Within the genus *Obscuraskinkus* gen. nov. are the remainder of putative *Saproscincus* species.

These are *Obscuraskinkus neglectus* sp. nov. associated until now with putative "*Saproscincus basiliscus* Ingram and Rawlinson, 1981", "*S. lewisi* Couper and Keim, 1998" and "*S. saltus* Hoskin, 2013" which as a group comprise the nominate subgenus, along with "*S. tetradactylus* (Greer and Kluge, 1980)", being type species for the subgenus *Sparsuskinkus* subgen. nov., which also includes "*S. hannahae* Couper and Keim, 1998" and "*S. czechurai* (Ingram and Rawlinson, 1981)".

The putative species "*S. czechurai* (Ingram and Rawlinson, 1981)", with a type locality of Charmillin Creek, via Ravenshoe, North Queensland, Latitude -17.43 S., Longitude 145.31 E. was flagged by

Moussalli *et al.* (2005) as being potentially more than one taxon.

It is herein split in line with morphological differences by location and molecular divergence into two subspecies, across the low-lying region biogeographical barrier between Cairns and Port Douglas, Queensland (the Black Mountain Corridor), with the northern form formally named *Obscuraskinkus (Sparsuskinkus) czechurai divergens* subsp. nov.

While all the relevant species are locally abundant and some

even appear invasive of human modified habitats, all should be regarded as potentially vulnerable.

In spite of extensive ranges for some of the preceding species, all are habitat restricted within their known distributions and so in real terms all are range restricted.

Furthermore, as seen with some formerly abundant species of small lizard and frogs declining at great speed and some even becoming extinct in the period 1770-2020 within Australian territories, including as cited in Hoser (1991, 2019a, 2019b) and elsewhere, the conservation status of "least concern" is clearly not appropriate for the relevant species.

All also compete with other skink species of similar size. Long term shifts in the power balance and abundance of the relevant species is not something that appears to have been measured at any stage and in most cases would be unlikely to ever happen.

In terms of the conservation of the relevant species, the ongoing actions of Uetz (2022) in pretending that species named by persons outside their cohort do not even exist, don't just present a threat to the long term survival of the relevant species named herein, but also a far more serious problem for conservation in general. See also the relevant comments of Hawkeswood (2021) and note that the comments of Hoser (2019a, 2019b) also apply.

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, spellings 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 gender assignment of suffixes seems incorrect, Latinisation is wrong, apparent spelling mistakes and so on (see Article 32.5.1 of the *International Code of Zoological Nomenclature*).

Some material in descriptions for taxa may be repeated for other taxa in this paper and this is necessary to ensure each fully complies with the provisions of the *International Code of Zoological Nomenclature* (fourth edition) (Ride *et al.* 1999) as amended online since.

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 26 May 2022 (including if also viewed prior), unless otherwise stated and was accurate in terms of the content cited herein as of that date.

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 date as just given.

Unless otherwise stated explicitly, colour and other descriptions apply to living adult 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.

SVL or SV means snout-vent length, TL means tail length, tail measurements refer to original tails, max. size refers to maximum known, sometimes approximated up to the nearest 10 mm if number of measured specimens is below 10.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant genera, subgenera, species or subspecies 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.

The genus *Saproscincus* Wells and Wellington, 1984 is also redefined and diagnosed in line with the new taxonomy arrived at within this paper.

SAPROSCINCUS WELLS AND WELLINGTON, 1984.

Type species: *Mococa mustelina* O'Shaughnessy, 1874.

Diagnosis: Species within the genera *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* are separated from all other Australian skinks by the following suite of characters: They are small, diurnal or crepuscular, being found mainly in moist shaded forest habitats in eastern Australia. They have well developed limbs, meeting or overlapping when adpressed, or nearly so; paired frontoparietal scales, supranasals and nasals undivided; six supralabials, the fourth of which usually doubles as a subocular; nasals usually widely separated; parietal shields in contact behind the interparietal; ear opening obvious and without lobules; eyelid movable, with a transparent disc; most specimens have a characteristic rust coloured Y-shaped mark over the rump; the single four-fingered member of the genera *Obscuraskinkus tetradactylus* (Greer and Kluge, 1980), is separated from other Australian skink genera with four fingers by having a series of suboculars separating the eye from the upper labials (derived from Cogger 2014).

Saproscincus are separated from *Obscuraskinkus gen. nov.* by having 5 fingers on the forelimb and two nuchals contacting the parietals (versus more in *Obscuraskinkus gen. nov.*), or if having more than two nuchals contacting the parietals, then by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

The species within the nominate subgenus *Saproscincus* Wells and Wellington, 1984 are separated from those in the subgenus *Tractuoscincus subgen. nov.* by having a relatively uniform dorsal pattern; a dark edged or white tear-drop like streak below and behind the eye, sometimes extending to the ear opening; a pale orange or red dorso-lateral band on each side begins on the rump and extends onto the tail, or alternatively, if with a dorsal pattern that is variegated, lacking a dark-edged white streak below and behind the eye, sometimes without a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail, and limbs that strongly overlap when adpressed.

These lizards will be further separated from *Tractuoscincus subgen. nov.* by having the following characters:

Belly is either unmarked or if marked with rarker markings aligned, at least on the outer edges of the belly as a series of regular longitudinal lines and with 6-7 (usually 7) supraciliaries as well as obvious longitudinal lines running down the sides of the body and to a lesser extent dorsally, with a black stripe extending onto the anterior of the tail.

Tractuoscincus subgen. nov. in turn are separated from subgenus *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* by having pentadactyle forelimbs; two nuchals contacting the parietals, a variegated dorsal pattern; no dark-edged white streak below and behind the eye; rarely a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail; limbs that strongly overlap when adpressed; 5-8 (usually six) supraciliaries (and also refer to the diagnosis of subgenus *Saproscincus* Wells and Wellington, 1984 above).

Obscuraskinkus gen. nov. are separated from the genus *Saproscincus* Wells and Wellington, 1984 by having pentadactyle limbs; and more than two nuchals contacting the parietals. Each parietal is bordered by a single nuchal and two temporal scales (as in being six scales contacting the posterior margin of the parietal scales). The only species of *Saproscincus* with more than two nuchals contacting the parietals, being *S. spectabilis* De Vis, 1888 is separated from species within *Obscuraskinkus*

gen. nov. by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

Species within the subgenus *Obscuraskinkus subgen. nov.* herein described explicitly as new in this formal description, being the nominate subgenus are separated from species in the subgenus *Sparsuskinkus gen. nov.* and all species within the genus *Saproscincus* Wells and Wellington, 1984 by the following suite of characters:

Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank and one or other of the following suites of characters: 1/ 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid (*Obscuraskinkus neglectus sp. nov.*, *O. basiliscus* (Ingram and Rawlinson, 1981), *O. saltus* (Hoskin, 2013)); or; 2/ Less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales (*O. lewisi* (Couper and Keim, 1998)).

The three species within *Sparsuskinkus subgen. nov.*, including the newly named subspecies *Obscuraskinkus (Sparsuskinkus) czechurai divergens subsp. nov.* are separated from all other species within *Obscuraskinkus gen. nov.* (nominate subgenus species) and the genus *Saproscincus* Wells and Wellington, 1984 by having one or other of the following three suites of characters:

1/ Tetractyle forelimbs and in turn separated from other Australian skinks with four fingered forelimbs by having a series of suboculars separating the eye from the upper labials (*O. tetractylus* (Greer and Kluge, 1980)); or; 2/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and level of the anal opening; no series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second labial is not in contact with any preocular scales (*O. hannahae* (Couper and Keim, 1998)); or; 3/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout moderately pointed; canthus rostralis is very concave and there is no indication of a black stripe with a well defined lower border from nostril to the flank (*O. czechurai* (Ingram and Rawlinson, 1981)).

Distribution: The genus *Saproscincus* Wells and Wellington, 1984 occurs along the coast and ranges of New South Wales and Queensland, from Sydney in the south to the Proserpine/Mackay region in the North, being south of the Burdekin Gap, biogeographical barrier. The genus *Obscuraskinkus gen. nov.* has a distribution centred almost exclusively on the wet tropics region of north-east Queensland, generally north of the Burdekin Gap and South of Cooktown, with the exception of a single species found in the rainforests near Mackay, south of the Burdekin Gap (*O. hannahae* (Couper and Keim, 1998)) and another north of the main wet tropics in the Melville Range, far north Queensland (*O. saltus* (Hoskin, 2013)).

Etymology: From Wells and Wellington (1984): "Etymology: Sapro = rotten, scincus = skink."

Content: *Saproscincus (Saproscincus) mustelina* (O'Shaughnessy, 1874) (type species); *S. (Tractuoscincus) challengeri* (Boulenger, 1887); *S. (Tractuoscincus) eungellaensis*

Sadler, Couper, Colgan, Vanderduys and Rickard, 2005; *S. (Saproscincus) oriarus* Sadler, 1998; *S. (Saproscincus) ritchiei* Wells and Wellington, 1985; *S. (Tractuoscincus) rosei* Wells and Wellington, 1985; *S. (Saproscincus) sonderi* (Peters, 1878); *S. (Tractuoscincus) spectabilis* (De Vis, 1888).

TRACTUOSCINCUS SUBGEN. NOV.

LSIDDurn:lsid:zoobank.org:act:F8A9B593-28A6-4691-B444-A797FD6AEF10

Type species: *Lygosoma challengeri* Boulenger, 1887.

Diagnosis: *Tractuoscincus subgen. nov.* are a subgenus within *Saproscincus* Wells and Wellington 1984 and in the taxonomy herein the only other subgenus. It has been described by others including

Moussalli *et al.* (2005) as the "Challengeri" group of the genus *Saproscincus* Wells and Wellington 1984 as interpreted by them. Species within the genera *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* are separated from all other Australian skinks by the following suite of characters: They are small, diurnal or crepuscular, found mainly in moist shaded forest habitats in eastern Australia. They have well developed limbs, meeting or overlapping when adpressed, or nearly so; paired frontoparietal scales, supranasals and nasals undivided; six supralabials, the fourth of which usually doubles as a subocular; nasals usually widely separated; parietal shields in contact behind the interparietal; ear opening obvious and without lobules; eyelid movable, with a transparent disc; most specimens have a characteristic rust coloured Y-shaped mark over the rump; the single four-fingered member of the genera *Obscuraskinkus tetractylus* (Greer and Kluge, 1980), is separated from other Australian skink genera with four fingers by having a series of suboculars separating the eye from the upper labials (derived from Cogger 2014).

Saproscincus are separated from *Obscuraskinkus gen. nov.* by having 5 fingers on the forelimb and two nuchals contacting the parietals (versus more in *Obscuraskinkus gen. nov.*), or if having more than two nuchals contacting the parietals, then by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

The species within the nominate subgenus *Saproscincus* Wells and Wellington, 1984 are separated from those in the subgenus *Tractuoscincus subgen. nov.* by having a relatively uniform dorsal pattern; a dark edged or white tear-drop like streak below and behind the eye, sometimes extending to the ear opening; a pale orange or red dorso-lateral band on each side begins on the rump and extends onto the tail, or alternatively, if with a dorsal pattern that is variegated, lacking a dark-edged white streak below and behind the eye, sometimes without a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail, and limbs that strongly overlap when adpressed. The lizard will be further separated from *Tractuoscincus subgen. nov.* by having the following characters:

Belly is either unmarked or if marked with rarker markings aligned, at least on the outer edges of the belly as a series of regular longitudinal lines and with 6-7 (usually 7) supraciliaries as well as obvious longitudinal lines running down the sides of the body and to a lesser extent dorsally, with a black stripe extending onto the anterior of the tail.

Tractuoscincus subgen. nov. in turn are separated from subgenus *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* by having pentadactyle forelimbs; two nuchals contacting the parietals, a variegated dorsal pattern; no dark-edged white streak below and behind the eye; rarely a pale orange or red dorso-lateral band on each side beginning on

the rump and extending onto the tail; limbs that strongly overlap when adpressed; 5-8 (usually six) supraciliaries (and also refer to the diagnosis of subgenus *Saproscincus* Wells and Wellington, 1984 above).

Obscuraskinkus gen. nov. are separated from the genus *Saproscincus* Wells and Wellington, 1984 by having pentadactyle limbs; and more than two nuchals contacting the parietals. Each parietal is bordered by a single nuchal and two temporal scales (as in being six scales contacting the posterior margin of the parietal scales). The only species of *Saproscincus* with more than two nuchals contacting the parietals, being *S. spectabilis* De Vis, 1888 is separated from species within *Obscuraskinkus gen. nov.* by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

Species within the subgenus *Obscuraskinkus subgen. nov.* herein described explicitly as new in this formal description, being the nominate subgenus are separated from species in the subgenus *Sparsuskinkus gen. nov.* and all species within the genus *Saproscincus* Wells and Wellington, 1984 by the following suite of characters:

Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank and one or other of the following suites of characters:

1/ 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid (*Obscuraskinkus neglectus sp. nov.*, *O. basiliscus* (Ingram and Rawlinson, 1981), *O. saltus* (Hoskin, 2013)); or;
2/ Less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales (*O. lewisi* (Couper and Keim, 1998)).

The three species within *Sparsuskinkus subgen. nov.*, including the newly named subspecies *Obscuraskinkus (Sparsuskinkus) czechurai divergens subsp. nov.* are separated from all other species within *Obscuraskinkus gen. nov.* (nominate subgenus species) and the genus *Saproscincus* Wells and Wellington, 1984 by having one or other of the following three suites of characters:

1/ Tetractyle forelimbs and in turn separated from other Australian skinks with four fingered forelimbs by having a series of suboculars separating the eye from the upper labials (*O. tetradactylus* (Greer and Kluge, 1980)); or;

2/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and level of the anal opening; no series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second labial is not in contact with any preocular scales (*O. hannahae* (Couper and Keim, 1998)); or;

3/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout moderately pointed; canthus rostralis is very concave and there is no indication of a black stripe with a well defined lower border from nostril to the flank (*O. czechurai* (Ingram and Rawlinson, 1981)).

Distribution: The genus *Saproscincus* Wells and Wellington, 1984 occurs along the coast and ranges of New South Wales and Queensland, from Sydney in the south to the Proserpine/Mackay region in the North, being south of the Burdekin Gap, biogeographical barrier.

The subgenus *Tractuoscincus subgen. nov.* is found from around Sydney, New South Wales in the south to Eungella near Mackay, Queensland in the North.

The closely related genus *Obscuraskinkus gen. nov.* has a distribution centred almost exclusively on the wet tropics region of north-east Queensland, generally north of the Burdekin Gap and South of Cooktown, with the exception of a single species found in the rainforests near Mackay, south of the Burdekin Gap (*O. hannahae* (Couper and Keim, 1998)) and another north of the main wet tropics in the Melville Range, far north Queensland (*O. saltus* (Hoskin, 2013)).

Etymology: The subgenus name *Tractuoscincus* comes from the Latin word "*Tractus*" which means spongy, in reflection of the damp and spongy ground they are frequently seen crawling over, with the word "*scincus*" being in reflection of the fact they are a skink lizard.

Content: *Saproscincus (Tractuoscincus) challengerii* (Boulenger, 1887); *S. (Tractuoscincus) eungellaensis* Sadlier, Couper, Colgan, Vanderduys and Rickard, 2005; *S. (Tractuoscincus) rosei* Wells and Wellington, 1985; *S. (Tractuoscincus) spectabilis* (De Vis, 1888).

OBSCURASKINKUS GEN. NOV.

LSIDurn:lsid:zoobank.org:act:0FA4FC2E-2F57-4008-9F7A-E3E93E4298F3

Type species: *Obscuraskinkus neglectus sp. nov.*

Diagnosis: Until now the species within *Obscuraskinkus gen. nov.* have been treated as species within *Saproscincus* Wells and Wellington, 1985, which remains their most closely related genus.

Obscuraskinkus gen. nov. have previously been described as the "northern lineage" of *Saproscincus* by authors including Moussalli *et al.* (2005).

The type species in this genus *Obscuraskinkus neglectus sp. nov.* has until now been treated as a divergent southern population of the wet tropics (Queensland) species, "*Saproscincus basiliscus* Ingram and Rawlinson, 1981".

Species within the genera *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* are separated from all other Australian skinks by the following suite of characters: They are small, diurnal or crepuscular, found mainly in moist shaded forest habitats in eastern Australia. They have well developed limbs, meeting or overlapping when adpressed, or nearly so; paired frontoparietal scales, supranasals and nasals undivided; six supralabials, the fourth of which usually doubles as a subocular; nasals usually widely separated; parietal shields in contact behind the interparietal; ear opening obvious and without lobules; eyelid movable, with a transparent disc; most specimens have a characteristic rust coloured Y-shaped mark over the rump; the single four-fingered member of the genera *Obscuraskinkus tetradactylus* (Greer and Kluge, 1980), is separated from other Australian skink genera with four fingers by having a series of suboculars separating the eye from the upper labials (derived from Cogger 2014).

Saproscincus are separated from *Obscuraskinkus gen. nov.* by having 5 fingers on the forelimb and two nuchals contacting the parietals (versus more in *Obscuraskinkus gen. nov.*), or if having more than two nuchals contacting the parietals, then by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

The species within the nominate subgenus *Saproscincus* Wells and Wellington, 1984 are separated from those in the subgenus *Tractuoscincus subgen. nov.* by having a relatively uniform dorsal

pattern; a dark edged or white tear-drop like streak below and behind the eye, sometimes extending to the ear opening; a pale orange or red dorso-lateral band on each side begins on the rump and extends onto the tail, or alternatively, if with a dorsal pattern that is variegated, lacking a dark-edged white streak below and behind the eye, sometimes without a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail, and limbs that strongly overlap when adpressed. The lizard will be further separated from *Tractuoscincus subgen. nov.* by having the following characters:

Belly is either unmarked or if marked with rarker markings aligned, at least on the outer edges of the belly as a series of regular longitudinal lines and with 6-7 (usually 7) supraciliaries as well as obvious longitudinal lines running down the sides of the body and to a lesser extent dorsally, with a black stripe extending onto the anterior of the tail.

Tractuoscincus subgen. nov. in turn are separated from subgenus *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* by having pentadactyle forelimbs; two nuchals contacting the parietals, a variegated dorsal pattern; no dark-edged white streak below and behind the eye; rarely a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail; limbs that strongly overlap when adpressed; 5-8 (usually six) supraciliaries (and also refer to the diagnosis of subgenus *Saproscincus* Wells and Wellington, 1984 above).

Obscuraskinkus gen. nov. are separated from the genus *Saproscincus* Wells and Wellington, 1984 by having pentadactyle limbs; and more than two nuchals contacting the parietals. Each parietal is bordered by a single nuchal and two temporal scales (as in being six scales contacting the posterior margin of the parietal scales). The only species of *Saproscincus* with more than two nuchals contacting the parietals, being *S. spectabilis* De Vis, 1888 is separated from species within *Obscuraskinkus gen. nov.* by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

Species within the subgenus *Obscuraskinkus subgen. nov.* herein described explicitly as new in this formal description, being the nominate subgenus are separated from species in the subgenus *Sparsuskinkus gen. nov.* and all species within the genus *Saproscincus* Wells and Wellington, 1984 by the following suite of characters:

Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank and one or other of the following suites of characters:
1/ 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid (*Obscuraskinkus neglectus sp. nov.*, *O. basiliscus* (Ingram and Rawlinson, 1981), *O. saltus* (Hoskin, 2013)); or;
2/ Less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales (*O. lewisi* (Couper and Keim, 1998)).

The three species within *Sparsuskinkus subgen. nov.*, including the newly named subspecies *Obscuraskinkus (Sparsuskinkus) czechurai divergens subsp. nov.* are separated from all other species within *Obscuraskinkus gen. nov.* (nominate subgenus species) and the genus *Saproscincus* Wells and Wellington, 1984 by having one or other of the following three suites of characters:

1/ Tetradactyle forelimbs and in turn separated from other Australian skinks with four fingered forelimbs by having a series of suboculars separating the eye from the upper labials (*O. tetradactylus* (Greer and Kluge, 1980)); or;

2/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and level of the anal opening; no series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second labial is not in contact with any preocular scales (*O. hannahae* (Couper and Keim, 1998)); or;

3/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout moderately pointed; canthus rostralis is very concave and there is no indication of a black stripe with a well defined lower border from nostril to the flank (*O. czechurai* (Ingram and Rawlinson, 1981)).

Distribution: The genus *Obscuraskinkus gen. nov.* has a distribution centred almost exclusively on the wet tropics region of north-east Queensland, generally north of the Burdekin Gap and South of Cooktown, with the exception of a single species found in the rainforests near Mackay, south of the Burdekin Gap (*O. hannahae* (Couper and Keim, 1998)) and another north of the main wet tropics in the Melville Range, far north Queensland (*O. saltus* (Hoskin, 2013)).

Species in the nominate subgenus *Obscuraskinkus subgen. nov.* are found in the northern wet tropics of Australia, north of the Burdekin Gap, extending as far north as Cape Melville.

Species in the subgenus *Sparsuskinkus gen. nov.* are found from the Sarina/Proserpine area of north-east Queensland, along wetter areas of the coast and nearby ranges to Cape Tribulation.

The closely related genus *Saproscincus* Wells and Wellington, 1984 occurs along the coast and ranges of New South Wales and Queensland, from Sydney in the south to the Proserpine/Mackay region in the North, being south of the Burdekin Gap, biogeographical barrier.

The subgenus (within *Saproscincus*) *Tractuoscincus subgen. nov.* is found from around Sydney, New South Wales in the south to Eungella near Mackay, Queensland in the North.

Etymology: The genus name *Obscuraskinkus gen. nov.* comes from the Latin word "Obscure" and the addition of the word skink, to identify with the obscure pattern of relevant species and that they are skink lizards. The spelling of the genus name, including the "skinkus" part, is deliberate and should not be changed unless mandated by the ICZN or their rules.

Content: *Obscuraskinkus (Obscuraskinkus) neglectus sp. nov.* (type species); *O. (Obscuraskinkus) basiliscus* (Ingram and Rawlinson, 1981); *O. (Sparsuskinkus) czechurai* (Ingram and Rawlinson, 1981); *O. (Sparsuskinkus) hannahae* (Couper and Keim, 1998); *O. (Obscuraskinkus) lewisi* (Couper and Keim, 1998); *O. (Obscuraskinkus) saltus* (Hoskin, 2013); *O. (Sparsuskinkus) tetradactylus* (Greer and Kluge, 1980).

SPARSUSKINKUS SUBGEN. NOV.

LSIDurn:lsid:zoobank.org:act:C08AB853-B49B-442E-BC61-5A114C19DD4B

Type species: *Lampropholis tetradactyla* Greer and Kluge, 1980.

Diagnosis: The species within the subgenus *Sparsuskinkus subgen. nov.* have previously been identified as the "tetradactyla" group in the so-called "Northern lineage" of *Saproscincus* Wells and Wellington, 1984, by other authors including Moussalli *et al.* (2005).

This "Northern Lineage" is herein placed within the new genus *Obscuraskinkus gen. nov.*, with the nominate subgenus including those species most closely related to the well-known "*Lampropholis basiliscus* Ingram and Rawlinson, 1981".

There are only the two subgenera in this genus, being *Obscuraskinkus gen. nov.* and the subgenus *Sparsuskinkus subgen. nov.*

Species within the genera *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* are separated from all other Australian skinks by the following suite of characters: They are small, diurnal or crepuscular, found mainly in moist shaded forest habitats in eastern Australia. They have well developed limbs, meeting or overlapping when adpressed, or nearly so; paired frontoparietal scales, supranasals and nasals undivided; six supralabials, the fourth of which usually doubles as a subocular; nasals usually widely separated; parietal shields in contact behind the interparietal; ear opening obvious and without lobules; eyelid movable, with a transparent disc; most specimens have a characteristic rust coloured Y-shaped mark over the rump; the single four-fingered member of the genera *Obscuraskinkus tetradactylus* (Greer and Kluge, 1980), is separated from other Australian skink genera with four fingers by having a series of suboculars separating the eye from the upper labials (derived from Cogger 2014).

Saproscincus are separated from *Obscuraskinkus gen. nov.* by having 5 fingers on the forelimb and two nuchals contacting the parietals (versus more in *Obscuraskinkus gen. nov.*), or if having more than two nuchals contacting the parietals, then by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

The species within the nominate subgenus *Saproscincus* Wells and Wellington, 1984 are separated from those in the subgenus *Tractuoscincus subgen. nov.* by having a relatively uniform dorsal pattern; a dark edged or white tear-drop like streak below and behind the eye, sometimes extending to the ear opening; a pale orange or red dorso-lateral band on each side begins on the rump and extends onto the tail, or alternatively, if with a dorsal pattern that is variegated, lacking a dark-edged white streak below and behind the eye, sometimes without a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail, and limbs that strongly overlap when adpressed. The lizard will be further separated from *Tractuoscincus subgen. nov.* by having the following characters: Belly is either unmarked or if marked with rarker markings aligned, at least on the outer edges of the belly as a series of regular longitudinal lines and with 6-7 (usually 7) supraciliaries as well as obvious longitudinal lines running down the sides of the body and to a lesser extent dorsally, with a black stripe extending onto the anterior of the tail.

Tractuoscincus subgen. nov. in turn are separated from subgenus *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* by having pentadactyle forelimbs; two nuchals contacting the parietals, a variegated dorsal pattern; no dark-edged white streak below and behind the eye; rarely a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail; limbs that strongly overlap when adpressed; 5-8 (usually six) supraciliaries (and also refer to the diagnosis of subgenus *Saproscincus* Wells and Wellington, 1984 above).

Obscuraskinkus gen. nov. are separated from the genus *Saproscincus* Wells and Wellington, 1984 by having pentadactyle limbs; and more than two nuchals contacting the parietals. Each parietal is bordered by a single nuchal and two temporal scales (as in being six scales contacting the posterior margin of the parietal scales). The only species of *Saproscincus* with more than two nuchals contacting the parietals, being *S. spectabilis* De Vis, 1888 is separated from species within *Obscuraskinkus gen. nov.* by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50

paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

Species within the subgenus *Obscuraskinkus subgen. nov.* herein described explicitly as new in this formal description, being the nominate subgenus are separated from species in the subgenus *Sparsuskinkus gen. nov.* and all species within the genus *Saproscincus* Wells and Wellington, 1984 by the following suite of characters:

Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank and one or other of the following suites of characters:
1/ 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid (*Obscuraskinkus neglectus sp. nov.*, *O. basiliscus* (Ingram and Rawlinson, 1981), *O. saltus* (Hoskin, 2013)); or;
2/ Less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales (*O. lewisi* (Couper and Keim, 1998)).

The three species within *Sparsuskinkus subgen. nov.*, including the newly named subspecies *Obscuraskinkus (Sparsuskinkus) czechurai divergens subsp. nov.* are separated from all other species within *Obscuraskinkus gen. nov.* (nominate subgenus species) and the genus *Saproscincus* Wells and Wellington, 1984 by having one or other of the following three suites of characters:

1/ Tetradactyle forelimbs and in turn separated from other Australian skinks with four fingered forelimbs by having a series of suboculars separating the eye from the upper labials (*O. tetradactylus* (Greer and Kluge, 1980)); or;
2/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and level of the anal opening; no series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second labial is not in contact with any preocular scales (*O. hannahae* (Couper and Keim, 1998)); or;
3/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout moderately pointed; canthus rostralis is very concave and there is no indication of a black stripe with a well defined lower border from nostril to the flank (*O. czechurai* (Ingram and Rawlinson, 1981)).

Distribution: Species in the subgenus *Sparsuskinkus gen. nov.* are found from the Sarina/Proserpine area of north-east Queensland, along wetter areas of the coast and nearby ranges to Cape Tribulation.

The genus *Obscuraskinkus gen. nov.* has a distribution centred almost exclusively on the wet tropics region of north-east Queensland, generally north of the Burdekin Gap and South of Cooktown, with the exception of a single species found in the rainforests near Mackay, south of the Burdekin Gap (*O. hannahae* (Couper and Keim, 1998)) and another north of the main wet tropics in the Melville Range, far north Queensland (*O. saltus* (Hoskin, 2013)).

Species in the nominate subgenus *Obscuraskinkus subgen. nov.* are found in the northern wet tropics of Australia, north of the Burdekin Gap, extending as far north as Cape Melville.

The closely related genus *Saproscincus* Wells and Wellington, 1984 occurs along the coast and ranges of New South Wales and Queensland, from Sydney in the south to the Proserpine/Mackay region in the North, being south of the Burdekin Gap,

biogeographical barrier.

The subgenus (within *Saproscincus*) *Tractuoscincus* subgen. nov. is found from around Sydney, New South Wales in the south to Eungella near Mackay, Queensland in the North.

Etymology: The genus name *Sparsuskinkus* gen. nov. comes from the Latin word “*sparsus*” meaning mottled or dappled, in reflection of the colour of the skinks as adults. The suffix, “*skinkus*”, reflects the kind of lizard they are. The spelling of “*skinkus*” is deliberate and should not be changed. The removal of the second “*s*” in the name, as would be the case for “*sparsus*” + “*skinkus*” is deliberate and made in order to make the name more easily spoken and/or written.

Content: *O. (Sparsuskinkus) tetradactylus* (Greer and Kluge, 1980) (type species); *O. (Sparsuskinkus) czechurai* (Ingram and Rawlinson, 1981); *O. (Sparsuskinkus) hannahae* (Couper and Keim, 1998).

OBSCURASKINKUS (OBSCURASKINKUS) NEGLECTUS SP. NOV.

LSIDDurn:lsid:zoobank.org:act:50AF0B1E-0D7B-4C78-8F98-79ABE2949AF1

Holotype: A preserved specimen in the Queensland Museum, Brisbane, Queensland, Australia, specimen number J49715 collected from Mount Spec, north Queensland, Australia, Latitude -18.95 S., Longitude 164.183333 E. This government-owned facility allows access to its holdings.

Paratypes: 1/ Ten preserved specimens in the Queensland Museum, Brisbane, Queensland, Australia, specimen numbers J49716, J49719, J49720, J49723, J49725, J49726, J49727, J49729, J49730 and J49731 all collected from Mount Spec, north Queensland, Australia, Latitude -18.95 S., Longitude 164.183333 E. 2/ Six preserved specimens in the Queensland Museum, Brisbane, Queensland, Australia, specimen numbers J29668, J74845, J74846, J49718, J49724 and J80053 all collected from Paluma, Queensland, Australia, Latitude -19.00 S., Longitude 146.20 E. 3/ A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number R.87051 collected from near the spillway of the Paluma Dam in north-east Queensland, Australia, Latitude -18.950 S., Longitude 146.150 E.

Diagnosis: Until now *Obscuraskinkus neglectus* sp. nov. has been treated as a divergent southern population of *O. basiliscus* (Ingram and Rawlinson, 1981) as seen for example in Moussalli *et al.* (2005), even though they found species-level divergence between the two allopatric populations.

O. neglectus sp. nov. occurs from Mount Elliot in the south to the Paluma Range in the north, as well as on Hinchinbrook Island (being the northern limit for the species), while *O. basiliscus* is found in the ranges north from about Mount Fox, north to Roaring Meg, which is just north of Cape Tribulation (all being in far north Queensland).

O. neglectus sp. nov. is readily separated from *O. basiliscus* as follows:

- 1/ Posterior to the eye, the black stripe running posterior to the eye and onto the upper flank is bold and well defined, versus either absent or ill defined in *O. basiliscus*.
- 2/ On the dorsum and flanks are numerous well defined whitish flecks. These are either absent or indistinct in *O. basiliscus*.
- 3/ Under the chin is white, and with obvious blackish specks and markings, versus white with no such markings or alternatively indistinct and usually greyish specks and markings in *O. basiliscus*.
- 4/ Blackish spots or specks are the most prominent markings on the dorsal surface of the body in *O. basiliscus* versus not so in *O. neglectus* sp. nov., where the whitish flecks or marks dominate. *Obscuraskinkus neglectus* sp. nov. and *O. basiliscus* (Ingram and Rawlinson, 1981) are separated from their related congener, *O. saltus* (Hoskin, 2013) by having a brownish dorsum and flanks that are shades of brown, and sometimes dark upper flanks, without golden spots, versus a golden dorsum and dark flanks with golden spots.

The only other species in the nominate subgenus *Obscuraskinkus* subgen. nov. is *O. lewisi* (Couper and Keim, 1998) and the three preceding species are separated from that one by having 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid, versus less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales in *O. lewisi* (Couper and Keim, 1998).

Species within the subgenus *Obscuraskinkus* subgen. nov. herein described explicitly as new in this formal description, being the nominate subgenus are separated from species in the subgenus *Sparsuskinkus* gen. nov. and all species within the genus *Saproscincus* Wells and Wellington, 1984 by the following suite of characters:

Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank and one or other of the following suites of characters: 1/ 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid (*Obscuraskinkus neglectus* sp. nov., *O. basiliscus* (Ingram and Rawlinson, 1981), *O. saltus* (Hoskin, 2013)); or; 2/ Less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales (*O. lewisi* (Couper and Keim, 1998)).

The three species within *Sparsuskinkus* subgen. nov., including the newly named subspecies *Obscuraskinkus (Sparsuskinkus) czechurai divergens* subsp. nov. are separated from all other species within *Obscuraskinkus* gen. nov. (nominate subgenus species) and the genus *Saproscincus* Wells and Wellington, 1984 by having one or other of the following three suites of characters:

- 1/ Tetradactyle forelimbs and in turn separated from other Australian skinks with four fingered forelimbs by having a series of suboculars separating the eye from the upper labials (*O. tetradactylus* (Greer and Kluge, 1980)); or;
- 2/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and level of the anal opening; no series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second labial is not in contact with any preocular scales (*O. hannahae* (Couper and Keim, 1998)); or;
- 3/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout moderately pointed; canthus rostralis is very concave and there is no indication of a black stripe with a well defined lower border from nostril to the flank (*O. czechurai* (Ingram and Rawlinson, 1981)).

Until now the species within *Obscuraskinkus* gen. nov. have been treated as species within *Saproscincus* Wells and Wellington, 1985, which remains their most closely related genus.

Obscuraskinkus gen. nov. have previously been described as the “northern lineage” of *Saproscincus* by authors including Moussalli *et al.* (2005).

The type species in this genus *Obscuraskinkus neglectus* sp. nov. has until now been treated as a divergent southern population of the wet tropics (Queensland) species, “*Saproscincus basiliscus* Ingram and Rawlinson, 1981”.

Species within the genera *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus* gen. nov. are separated from all other

Australian skinks by the following suite of characters: They are small, diurnal or crepuscular, found mainly in moist shaded forest habitats in eastern Australia. They have well developed limbs, meeting or overlapping when adpressed, or nearly so; paired frontoparietal scales, supranasals and nasals undivided; six supralabials, the fourth of which usually doubles as a subocular; nasals usually widely separated; parietal shields in contact behind the interparietal; ear opening obvious and without lobules; eyelid movable, with a transparent disc; most specimens have a characteristic rust coloured Y-shaped mark over the rump; the single four-fingered member of the genera *Obscuraskinkus tetradactylus* (Greer and Kluge, 1980), is separated from other Australian skink genera with four fingers by having a series of suboculars separating the eye from the upper labials (derived from Cogger 2014).

Saproscincus are separated from *Obscuraskinkus gen. nov.* by having 5 fingers on the forelimb and two nuchals contacting the parietals (versus more in *Obscuraskinkus gen. nov.*), or if having more than two nuchals contacting the parietals, then by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

The species within the nominate subgenus *Saproscincus* Wells and Wellington, 1984 are separated from those in the subgenus *Tractuoscincus subgen. nov.* by having a relatively uniform dorsal pattern; a dark edged or white tear-drop like streak below and behind the eye, sometimes extending to the ear opening; a pale orange or red dorso-lateral band on each side begins on the rump and extends onto the tail, or alternatively, if with a dorsal pattern that is variegated, lacking a dark-edged white streak below and behind the eye, sometimes without a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail, and limbs that strongly overlap when adpressed. The lizard will be further separated from *Tractuoscincus subgen. nov.* by having the following characters:

Belly is either unmarked or if marked with rarker markings aligned, at least on the outer edges of the belly as a series of regular longitudinal lines and with 6-7 (usually 7) supraciliaries as well as obvious longitudinal lines running down the sides of the body and to a lesser extent dorsally, with a black stripe extending onto the anterior of the tail.

Tractuoscincus subgen. nov. in turn are separated from subgenus *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* by having pentadactyle forelimbs; two nuchals contacting the parietals, a variegated dorsal pattern; no dark-edged white streak below and behind the eye; rarely a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail; limbs that strongly overlap when adpressed; 5-8 (usually six) supraciliaries (and also refer to the diagnosis of subgenus *Saproscincus* Wells and Wellington, 1984 above).

Obscuraskinkus gen. nov. are separated from the genus *Saproscincus* Wells and Wellington, 1984 by having pentadactyle limbs; and more than two nuchals contacting the parietals. Each parietal is bordered by a single nuchal and two temporal scales (as in being six scales contacting the posterior margin of the parietal scales). The only species of *Saproscincus* with more than two nuchals contacting the parietals, being *S. spectabilis* De Vis, 1888 is separated from species within *Obscuraskinkus gen. nov.* by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular

supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

Obscuraskinkus neglectus sp. nov. in life is depicted online at: <https://www.flickr.com/photos/euprepiosaur/6537517257/>

and

https://www.flickr.com/photos/zimny_anders/30618471737/

and

<https://www.flickr.com/photos/88708273@N03/23323948999/>

Obscuraskinkus basiliscus is seen in Cogger (1014) on page 679 at top left, Wilson (2015) on page 182 left, Wilson and Swan (2017) on page 393 at centre, Wilson and Knowles (1988) on page 289 at middle right and also online at:

<https://www.flickr.com/photos/euprepiosaur/8459514423/>

and

<https://www.flickr.com/photos/88708273@N03/24585035262/>

Distribution: *O. neglectus sp. nov.* occurs from Mount Elliot in the south to the Paluma Range in the north, as well as on Hinchinbrook Island (being the northern limit for the species), while *O. basiliscus* is found in the ranges north from about Mount Fox, north to Roaring Meg, which is just north of Cape Tribulation (all being in far north Queensland).

Etymology: The new species name “*neglectus*” refers primarily to the fact that it has been known about for many years, but effectively neglected by science.

Taxonomy, nomenclature and the formal descriptions of species is the first and most important step in preserving biodiversity. Delays in describing clearly obvious species-level taxa should be avoided.

OBSCURASKINKUS (SPARSUSKINKUS) CZECHURAI DIVERGENS SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:6D803B46-1502-473E-90F7-C14F2C26209B

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J25227 collected from Home Rule, North Queensland, Latitude -15.748611 S., Longitude 145.331944 E. This government-owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens in the Queensland Museum, Brisbane, Queensland, Australia, specimen numbers J40537 and J40538 both collected from Mount Finnigan, 37 km south of Cooktown, Queensland, Australia, Latitude -15.816667 S., Longitude 145.283333 E. 2/ A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J59159 collected from 2.5 km south of Mount Hartley, North Queensland, Australia, Latitude -15.783333 S., Longitude 145.316667 E. 3/ A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J60215 collected from the north-east corner of the Big Tableland, Queensland, Australia, Latitude -15.716667 S., Longitude 145.283333 E.

Diagnosis: Until now, *Obscuraskinkus (Sparsuskinkus) czechurai divergens subsp. nov.* has been treated as a northern population of *O. czechurai* (Ingram and Rawlinson, 1981).

The putative species “*S. czechurai* (Ingram and Rawlinson, 1981)”, with a type locality of Charmillin Creek, via Ravenshoe, North Queensland, Latitude -17.43 S., Longitude 145.31 E. is split in line with molecular data and molecular divergence into two subspecies, across the low-lying region biogeographical barrier between Cairns and Port Douglas, Queensland (the Black Mountain Corridor), with the northern form formally named *O. czechurai divergens subsp. nov.*

O. czechurai divergens subsp. nov. is readily separated from the nominate form *O. czechurai czechurai* (Ingram and Rawlinson, 1981) as follows:

1/ Behind the eye and on the side of the head, running posteriorly to the neck, from the dorsolateral boundary and below

and above the axilla of the forelimb is a distinctive charcoal black area of pigment or marking in *O. czechurai czechurai*. This is absent, or effectively so in *O. czechurai divergens subsp.nov.*

2/ In *O. czechurai czechurai* on the dorsolateral axis immediately posterior to the hind limb is spotting to form a black line over the lighter dorsal colouration, the spotting either being broken, continuous or a combination of both, this spotted line not running far down the tail, which is otherwise generally unmarked save for some specimens having scales of different shades of brown or reddish brown. There is not such black spotting or line seen in *O. czechurai divergens subsp.nov.*

Both *O. czechurai divergens subsp. nov.* and *O. czechurai czechurai* are separated from all other species within *Obscuraskinkus gen. nov.* (both subgenera) and species within the genus *Saproscincus* Wells and Wellington, 1984 by having limbs that are pentadactyle; more than two nuchals contacting the parietals; snout moderately pointed; canthus rostralis is very concave and there is no indication of a black stripe with a well defined lower border running from nostril to the flank.

The other species within *Sparsuskinkus subgen. nov.* are separated from all other species within *Obscuraskinkus gen. nov.* (n nominate subgenus species) and the genus *Saproscincus* Wells and Wellington, 1984 by having one or other of the following two suites of characters:

1/ Tetradactyle forelimbs and in turn separated from other Australian skinks with four fingered forelimbs by having a series of suboculars separating the eye from the upper labials (*O. tetradactylus* (Greer and Kluge, 1980)); or;

2/ Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and level of the anal opening; no series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid; second labial is not in contact with any preocular scales (*O. hannahae* (Couper and Keim, 1998)).

Until now the species within *Obscuraskinkus gen. nov.* have been treated as species within *Saproscincus* Wells and Wellington, 1985, which remains their most closely related genus.

Obscuraskinkus gen. nov. have previously been described as the "northern lineage" of *Saproscincus* by authors including Moussalli *et al.* (2005).

The type species in this genus *Obscuraskinkus neglectus sp. nov.* has until now been treated as a divergent southern population of the wet tropics (Queensland) species, "*Saproscincus basiliscus* Ingram and Rawlinson, 1981".

Species within the genera *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* are separated from all other Australian skinks by the following suite of characters: They are small, diurnal or crepuscular, found mainly in moist shaded forest habitats in eastern Australia. They have well developed limbs, meeting or overlapping when adpressed, or nearly so; paired frontoparietal scales, supranasals and nasals undivided; six supralabials, the fourth of which usually doubles as a subocular; nasals usually widely separated; parietal shields in contact behind the interparietal; ear opening obvious and without lobules; eyelid movable, with a transparent disc; most specimens have a characteristic rust coloured Y-shaped mark over the rump; the single four-fingered member of the genera *Obscuraskinkus tetradactylus* (Greer and Kluge, 1980), is separated from other Australian skink genera with four fingers by having a series of suboculars separating the eye from the upper labials (derived from Cogger 2014).

Saproscincus are separated from *Obscuraskinkus gen. nov.* by having 5 fingers on the forelimb and two nuchals contacting the parietals (versus more in *Obscuraskinkus gen. nov.*), or if having more than two nuchals contacting the parietals, then by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from

nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

The species within the nominate subgenus *Saproscincus* Wells and Wellington, 1984 are separated from those in the subgenus *Tractuoscincus subgen. nov.* by having a relatively uniform dorsal pattern; a dark edged or white tear-drop like streak below and behind the eye, sometimes extending to the ear opening; a pale orange or red dorso-lateral band on each side begins on the rump and extends onto the tail, or alternatively, if with a dorsal pattern that is variegated, lacking a dark-edged white streak below and behind the eye, sometimes without a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail, and limbs that strongly overlap when adpressed. The lizard will be further separated from *Tractuoscincus subgen. nov.* by having the following characters: Belly is either unmarked or if marked with rarker markings aligned, at least on the outer edges of the belly as a series of regular longitudinal lines and with 6-7 (usually 7) supraciliaries as well as obvious longitudinal lines running down the sides of the body and to a lesser extent dorsally, with a black stripe extending onto the anterior of the tail.

Tractuoscincus subgen. nov. in turn are separated from subgenus *Saproscincus* Wells and Wellington, 1984 and *Obscuraskinkus gen. nov.* by having pentadactyle forelimbs; two nuchals contacting the parietals, a variegated dorsal pattern; no dark-edged white streak below and behind the eye; rarely a pale orange or red dorso-lateral band on each side beginning on the rump and extending onto the tail; limbs that strongly overlap when adpressed; 5-8 (usually six) supraciliaries (and also refer to the diagnosis of subgenus *Saproscincus* Wells and Wellington, 1984 above).

Obscuraskinkus gen. nov. are separated from the genus *Saproscincus* Wells and Wellington, 1984 by having pentadactyle limbs; and more than two nuchals contacting the parietals. Each parietal is bordered by a single nuchal and two temporal scales (as in being six scales contacting the posterior margin of the parietal scales). The only species of *Saproscincus* with more than two nuchals contacting the parietals, being *S. spectabilis* De Vis, 1888 is separated from species within *Obscuraskinkus gen. nov.* by having a blunt snout (as opposed to moderately pointed), canthus rostralis not or slightly concave; some indication of a black stripe from nostril to flank; less than 50 paravertebral scales between the nuchal and the level of anal opening; no enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid and is found in south-east Queensland and New South Wales along coastal regions and nearby ranges, as opposed to mid to north east Queensland generally near the coast or ranges.

Species within the subgenus *Obscuraskinkus subgen. nov.* herein described explicitly as new in this formal description, being the nominate subgenus are separated from species in the subgenus *Sparsuskinkus gen. nov.* and all species within the genus *Saproscincus* Wells and Wellington, 1984 by the following suite of characters:

Limbs pentadactyle; more than two nuchals contacting the parietals; snout bluntish; canthus rostralis is not or is only slightly concave; there is some indication of a black stripe from nostril to flank and one or other of the following suites of characters:
1/ 50 or more paravertebral scales between the nuchal and level of the anal opening; usually a series of enlarged subocular scales between the subocular supralabial and the granules of the lower eyelid (*Obscuraskinkus neglectus sp. nov.*, *O. basiliscus* (Ingram and Rawlinson, 1981), *O. saltus* (Hoskin, 2013)); or;
2/ Less than 50 paravertebral scales between the nuchal and level of the anal opening; no enlarged subocular scales between

the subocular supralabial and the granules of the lower eyelid; second supralabial in contact with one or more preocular scales (*O. lewisi* (Couper and Keim, 1998)).

Obscuraskinkus (Sparsuskinkus) czechurai divergens subsp. nov. in life is depicted online at:

<https://www.flickr.com/photos/shaneblackfnq/16311527407/>

O. czechurai (Ingram and Rawlinson, 1981) is depicted in life in Wilson and Swan (2017) on page 395 at top left, Wilson and Swan (2015) on page 183 at top left, Wilson and Knowles (1988) page 290 at middle left and Cogger (2014) on page 679 at top right as well as online at:

<https://www.flickr.com/photos/euprepiosaur/5894016780/>
and

<https://www.flickr.com/photos/euprepiosaur/36234524205/>

Distribution: *Obscuraskinkus (Sparsuskinkus) czechurai divergens* subsp. nov. occurs in (mainly elevated) rainforests roughly between Port Douglas in the south to nearly Cooktown in the north (Shipton's Flat near Rossville), in the northern wet tropics region of Queensland Australia.

Nominate *O. czechurai* (Ingram and Rawlinson, 1981) occurs generally south and west of Cairns north Queensland in (mainly elevated) rainforests south to the Cardwell Range.

Etymology: *Obscuraskinkus (Sparsuskinkus) czechurai divergens* subsp. nov. is formally named in reflection of the fact that it is a divergent subspecies relative to the nominate form, by distribution, evolution and morphology.

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CONFLICTS OF INTEREST

None.

