

New Australian lizard taxa within the greater *Egernia* Gray, 1838 genus group of lizards and the division of *Egernia sensu lato* into 13 separate genera.

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ABSTRACT

The Genus *Egernia* Gray, 1838 has been defined and redefined by many authors since the time of original description. Defined at its most conservative is perhaps that diagnosis in Cogger (1975) and reflected in Cogger *et al.* (1983), with the reverse (splitters) position being that articulated by Wells and Wellington (1985). They resurrected available genus names and added to the list of available names at both genus and species level.

Molecular methods have largely confirmed the taxonomic positions of Wells and Wellington (1985) at all relevant levels and their legally available ICZN nomenclature does as a matter of course follow from this.

However petty jealousies and hatred among a group of would-be herpetologists called the Wüster gang (as detailed by Hoser 2015a-f and sources cited therein) have forced most other publishing herpetologists since the 1980's to not use anything Wells and Wellington.

Therefore the most commonly "in use" taxonomy and nomenclature by published authors does not reflect the taxonomic reality.

This author will not be unlawfully intimidated by Wolfgang Wüster and his gang of law-breaking thugs using unscientific methods to destabilize zoology as encapsulated in the hate rant of Kaiser *et al.* (2013). Therefore the generic groupings generally defined by Wells and Wellington (1985) are adopted herein as the most sensible arrangement based on available evidence from all sources including those exclusive of and out of control of Wells and Wellington.

Beyond that position, this paper formally names obviously unnamed forms within the greater *Egernia* group, including three new genera for the *Silubosaurus depressus* Günther, 1875 species group, the *Egernia saxatilis* Cogger, 1960 group and for the divergent taxon "*Egernia formosa* Fry, 1914" as well as four new species, one within *Silubosaurus* Gray, 1845 *sensu stricto*, another within *Contundo* Wells and Wellington, 1984 and two within the "*Egernia saxatilis* Cogger, 1960" group. Some new subspecies are also formally named for the first time. The newly named species and subspecies are all geographically allopatric from one another and readily separated from their nearest relatives by obvious differences in morphology and/or colouration as well as disjunct distributions.

Some of the named subspecies may in fact be worthy of elevation to full species rank, but this paper has taken the most conservative position for these taxa.

Keywords: taxonomy; nomenclature; Australia; Western Australia; Queensland; Northern Territory; New South Wales, South Australia; Victoria; *Egernia*; *Silubosaurus*; *Liopholis*; *Bellatorias*; *Flamoscincus*; *Hortonia*; *Silvascincus*; *Contundo*; *Tropidolopisma*; *Lissolepis*; *Storrisaurus*; *hosmeri*; *napoleonis*; *stokesii*; *depressa*; *zellingi*; *formosa*; *saxatilis*; *intermedia*; *kintorei*; new genus; *Woolfscincus*; *Piersonsaurus*; *Mannixsaurus*; new species; *hoserae*; *maryannmartinekae*; *halcoggeri*; *rosswellingtoni*; new subspecies; *maxinehoserae*; *fiacummingae*; *scottgranti*; *doriskuenae*; *lynetteholdsworthae*; *matthingleyi*; *adrianpapaluca*; *crossi*; *crossmani*.

INTRODUCTION

An ongoing audit of Australasian herpetofauna over some decades has yielded numerous potentially unnamed species and genera.

During this audit, available names are assessed for suitability for otherwise unnamed or improperly assigned taxa and when appropriate, relevant papers have been published over the past 20 years, commencing with Hoser (1998a) and Hoser (1998b).

Recognized species within the group of lizards most commonly referred to the genus *Egernia* Gray, 1838 (*sensu* Cogger *et al.* 1983) were audited and found to be generally improperly assigned at the genus level in most contemporary texts on Australian reptiles.

However a logical, sensible and patently obviously alternative and correct classification had been articulated by Wells and Wellington (1985).

However petty jealousies and hatred among a group of so-called herpetologists called the Wüster gang have forced most other publishing herpetologists since the 1980's to not use anything Wells and Wellington, due to a very real fear of unlawful reprisals and attacks.

Thus the most commonly "in use" taxonomy and nomenclature does not reflect the taxonomic reality. See for example the rant published in Kaiser *et al.* 2013 as just one of many examples of the sort of

tactics used by this gang of thieves and for more detail see Hoser (2015a-f). As a scientist who deals in facts and not personal likes and hatreds, I will not be unlawfully intimidated by Wolfgang Wüster and his gang of law-breaking thugs using unscientific methods to destabilize zoology.

Therefore the generic groupings generally defined by Wells and Wellington (1985) are adopted herein as the most sensible arrangement based on available evidence from all sources including those exclusive of and out of control of Wells and Wellington.

See for example the published results of Pyron *et al.* (2013).

Notwithstanding the excellent job of Wells and Wellington (1985) in breaking up the Genus *Egernia* as defined by others at the time and descriptions of new species and subspecies by others both prior and since, there are as of the present time (2016-2018) as yet unnamed forms within this grouping.

To rectify these obvious errors, this paper effectively adopts the generic classification of Wells and Wellington (1985) as the only logical one for the group and furthermore defines and names a new genus for the *Silubosaurus depressus* Günther, 1875 species group, another for the divergent taxon "*Egernia formosa* Fry, 1914" as well as another new genus for the *Egernia saxatilis* Cogger, 1960 group of lizards.

Molecular validation of the Wells and Wellington (1985) position and the minor adjustments herein also come from the paper of Pyron *et al.* (2013) as well as other relevant sources cited herein.

Beyond that position, this paper formally names four new species, one within *Silubosaurus* Gray, 1845 *sensu stricto*, another within *Contundo* Wells and Wellington, 1984 and two within the "*Egernia saxatilis* Cogger, 1960" group. Several new subspecies are also formally named for the first time. The newly named species and subspecies are all geographically allopatric from another and readily separated from their nearest relatives by obvious differences in morphology and/or colouration as defined herein. Some of the subspecies named herein may ultimately prove to be full species.

MATERIALS AND METHODS

This audit included collection of numerous live specimens in their native habitats, with appropriate legal authorities over a 40 year time frame. Preserved specimens in museums across Australia have also been inspected as well as numerous captives with good locality data, photos *in situ* of specimens and records from other active herpetologists.

Combined with this has been an objective review of the relevant scientific and other literature and the data presented within to form the taxonomic and nomenclatural conclusions and framework presented within this paper.

The nomenclature used is in accordance with the relevant provisions of the rules published by the ICZN including the fourth edition of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended online by the ICZN since then and prior to 10 August 2017.

I also note that, notwithstanding the theft of relevant materials from this author in an illegal armed raid on 17 August 2011, which were not returned in breach of undertakings to the court (Court of Appeal Victoria 2014 and VCAT 2015), I have made a decision to publish this paper.

This is in view of the conservation significance attached to the formal recognition of unnamed taxa at all levels and on the basis that further delays may in fact put these presently unnamed or potentially improperly assigned taxa at greater risk of extinction.

This comment is made noting the extensive increase in human population in Australia, with a conservative forecast of a four-fold increase in human population in the next 100 years (from 25 million to 100 million) and the general environmental destruction across the continent as documented by Hoser (1991), including low density areas without a large permanent human population.

I also note the abysmal environmental record of various Australian National, State and Local governments in the relevant Australian region over the past 200 years as detailed by Hoser (1989, 1991, 1993 and 1996).

Key publications relevant to this audit of *Egernia* Gray, 1838 *sensu lato* include the following:

Australian Faunal Directory (2014), Boulenger (1887, 1896), Bowles (2000), Brygoo (1985), Chapple (2003), Chapple and Scott Keogh (2004), Cogger (1960, 1975, 1983, 2014), Cogger *et al.* (1983), Couper *et al.* (2006), Day (1980), Dennison *et al.* (2015), Department of Environment and Conservation Western Australia (2012), De Vis (1884, 1888), Donnellan *et al.* (2002), Doughty *et al.* (2011), Duffield and Bull (1996, 1998, 2002), Dumeril and Bibron (1839), Eipper (2012), Fitzinger (1843), Ford (1963a, 1963b), Fry (1914), Gardner *et al.* (2001, 2002, 2007, 2008), Glauert (1956, 1960), Gray (1832, 1838, 1845), Greer (1989), Günther (1875, 1877, 1897), Horton (1972), Hoser (1989, 2007, 2015a-f), Hollenshead (2011), How *et al.* (2003), Kinghorn (1955), Lacépède (1804), Lanham and Bull (2000), Lee-Steere (2008), Longley (1946), Longman (1918), Loveridge (1934), Main and Bull (1996), Mensforth and Bull (2008), Mitchell (1950), Mitchell and Behrmdt (1949), Nankivell (1976), Pearson (2012), Peters (1866, 1869, 1870, 1871), Pianka (1969, 1972), Pianka and Giles (1982), Pyron *et al.* (2013), Ride *et al.* (1999), Rosen (1905), Roux-Estève (1979), Sadlier (1990), Shea (1999), Shea and Sadlier (1999), Shea *et al.* (2000), Sternfeld (1919, 1925), Stirling and Zietz (1893), Storr (1960, 1968, 1978), Storr and Harold (1990), Storr, Smith and Johnstone (1999), Swan (1990), Swanson (1979), Threatened Species Scientific Committee of Western Australia (2015), Wells (1972), Wells and Wellington (1984, 1985), Werner (1910, 1917), Wilson and Knowles (1988), Wilson and Swan (2017) and sources cited therein.

SUMMARY OF RESULTS / NOTES ON THE DESCRIPTIONS FOR ANY POTENTIAL REVISORS

Unless mandated by the rules of the *International Code of Zoological Nomenclature*, none of the spellings of the newly proposed names should be altered in any way. The names created herein have also been created with a view to avoiding any potential homonymy with earlier established names.

Should one or more newly named taxa be merged by later authors to be treated as a single entity, the order of priority of retention of names should be the order (page priority) of the descriptions within this text (which is the same as that listed in the abstract).

Before the formal descriptions of new taxa are lists of the species within each genus as generally defined by Wells and Wellington, but incorporating obvious changes arising from the descriptions of new species and the removal of species from *Silubosaurus* Gray, 1845 to a newly erected genus for the divergent West Australian species and likewise for species removed from two other genera.

Each of the previously named genus groups are not formally described in this paper as they are well known and defined by other authors as species groups already (e.g. Storr 1978, Wells and Wellington, 1985, Gardner *et al.* 2008, or Cogger, 2014).

Where species within two genera named herein are placed within a single genus as defined by the preceding authors, the relevant species groups can be easily separated from one another via the keys in Cogger (2014). Hence there can be no doubt as to which species goes into which genus.

Below are the new genera descriptions followed by the species descriptions and subspecies descriptions. In terms of the latter (species and subspecies), they are placed within the genera as outlined in the following section of this paper, this being the new taxonomy and nomenclature for the relevant group/s of reptiles. Characters used to identify each genus described below are largely derived from the standardized accounts given in Storr (1978), Wells and Wellington (1985), Gardner *et al.* (2008), or Cogger (2014) as they are both simple, widely available and can be employed easily in the field.

Of note are the following items.

The genus *Egernia* Gray, 1843 as defined by Wells and Wellington is accepted in toto herein. The fiction that all five species as defined by Wells and Wellington, 1985 are of a single species, being *Egernia cunninghami* (Gray, 1832) should have been dispensed with years ago!

There are at least three valid species within the group (which are so divergent morphologically, that no reasonable person could ever allege they are one and the same species) and based on known geological barriers at play and in the absence of evidence to the contrary, all five forms defined by Wells and Wellington are tentatively accepted herein.

Based on obvious morphological evidence alone as cited in Hoser (1989), the three valid species in the complex are the so-called New England form (*cunninghami*), the Sydney sandstone form (*Egernia krefftii* Peters, 1871) and the so-called Granite belt form from south of the Hunter Valley found throughout the great dividing range into South-east South Australia, for which Wells and Wellington have assigned the names *Egernia barnetti* Wells and Wellington, 1985 (for the SA population) and

Egernia jossae Wells and Wellington, 1985 (for the rest).

Speculation on the internet and by Brown (2014) that the specimens from the Kaputar Range in North-west New South Wales were an undescribed species appear to be fanciful. Numerous specimens seen by myself have not appeared to be anything other than bog standard New England form (*cunninghami*), although there is a preponderance of specimens with significantly reduced white pigment on the body and relatively indistinct patterning. However aberrant specimens like this appear elsewhere in the known range of New England form (*cunninghami*).

Silubosaurus Gray, 1845 appears to have been overlooked by Wells and Wellington in 1985, but it is clear from the rest of their paper that they recognized the genus as the "*stokesii* Gray, 1845" species group, even though this is not explicitly stated in their paper. The Australian snake genus *Tropidechis* was also inadvertently omitted in their monograph and it would be self evident that they recognized this well known arrangement as well.

Silubosaurus stokesii Gray, 1845 is herein divided into two species,

namely *S. stokesii* Gray, 1845 from Western Australia and *S. zellingi* De Vis, 1884 from eastern and central Australia.

This is a most conservative arrangement and largely carries over from existing taxonomy and in the face of ambiguous molecular and other data.

The West Australian forms are herein treated as three subspecies, with one formally named for the first time. In total they are *S. stokesii stokesii* Gray, 1845, *S. stokesii badia* Storr, 1978 and *S. stokesii lynetteholdsworthae* subsp. nov. as described in this paper.

S. stokesii aethiops Storr, 1978 is not recognized herein as a valid subspecies, even though it is morphologically distinct and listed (described) as such in this paper in the relevant subspecies descriptions.

The West Australian Threatened Species Committee wrote in 2015 "Doughty and colleagues (2011) present evidence that the genetic differences between *Egernia stokesii aethiops* and *E. s. badia* (individuals at Monkey Mia on Peron Peninsula) are less than the genetic difference between subpopulations of *E. s. stokesii*. *Egernia stokesii aethiops* is now treated as a synonym of *E. s. badia* (AFD, 2014)."

The east Australian and central Australian specimens formerly assigned to the species *S. stokesii* are herein placed within the species *Silubosaurus zellingi* De Vis, 1884. Three divergent populations are herein described as new subspecies on the basis of significant morphological differences and allopatry based on significant geographical barriers indicating zero gene flow between populations.

This conservative treatment is due to an absence of robust molecular data for these populations, although I can reasonably anticipate that in time some of these described forms will be recognized as full species.

There are three new subspecies formally named herein, these being *Silubosaurus zellingi fiacummingae* subsp. nov. from central Australia in the vicinity of Alice Springs in the Northern Territory, *Silubosaurus zellingi doriskuenae* subsp. nov. from far north-west NSW and adjoining Queensland in the region of the Grey Range and *Silubosaurus zellingi scottgranti* subsp. nov. from the Barrier Range, New South Wales, through the Lake Eyre region (east, south and west of there) and including south and west to the northern Eyre Peninsula and nearby parts of South Australia.

The north-east Australian species *Silubosaurus hosmeri* (Kinghorn, 1955) is herein divided into two full species. The dark-coloured population from rocky dry rain shadow areas on the east side of Cape York and nearby remain as *S. hosmeri*.

The remainder from the Mount Isa region and north into the western Gulf of Carpentaria, with a distribution broadly encompassing rocky parts of the Barkly Tableland is herein formally named as a new species, *Silubosaurus hoserae* sp. nov.. In turn this species is divided into two subspecies. The nominate form is that from around Mount Isa, while the distinctively patterned population from the Gulf of Carpentaria is formally described as a new subspecies, namely *Silubosaurus hoserae maxinehoserae* sp. nov..

Liopholis Fitzinger, 1843 is herein resurrected from synonymy of *Egernia* as done by Wells and Wellington (1984) and again in Wells and Wellington (1985).

L. bradshawi Wells and Wellington, 1985 and *L. messeli* Wells and Wellington, 1985 are both tentatively recognized as valid herein, but one or other may be conspecific with *L. multiscutata* (Mitchell and Behrmdt, 1949).

The taxon *Lissolepis aquarius* Wells and Wellington, 1985 is in the absence of evidence to the contrary, herein treated as conspecific with *L. coventryi* (Storr, 1978).

Molecular evidence published by Doughty *et al.* 2011 does not support recognition of either *Tropidolopisma dumerilii* Duméril and Bibron, 1839 or *Tropidolopisma paynei* Wells and Wellington, 1985 as proposed by those authors in Wells and Wellington, 1985.

Recognition of four species of *Hortonia* Wells and Wellington, 1985 is tentative and in the absence of robust molecular data, but based on the disjunct distribution of the four relevant forms.

Flamoscincus webberi Wells and Wellington, 1985 is herein recognized as a distinct species on the basis of minor morphological differences to *F. inornata* (Rosen, 1905) and a disjunct distribution, based on a zone on unsuitable habitat.

There is no molecular evidence at this stage that either refutes or supports this contention.

Storisaurus husbandi Wells and Wellington, 1985 is sufficiently distinct (morphologically) from the nominate form for the genus *S. rugosa* De Vis, 1888 to be recognized as a valid species level taxon. It is also separated by a significant distributional gap, supporting the contention of long-term isolation.

The exact species composition of the genera *Silvascincus* Wells and Wellington, 1985, *Contundo* Wells and Wellington, 1984 and *Woolfscincus* gen. nov. within this paper is made on the basis of available evidence and some species (not including the types for each genus) may ultimately be assigned to a different genus. This is particularly the case for species herein placed within *Silvascincus*.

The taxonomic status of *Silvascincus wrani* Wells and Wellington, 1985 is uncertain and it is not included in the list within this paper. I make no judgement as to the validity or otherwise of this taxon and await further research on the relevant animals.

The species listed in Wells and Wellington (1985) as "*Silvascincus formosa* (Fry, 1914)" is herein placed in a new genus *Mannixsaurus* gen. nov..

It also occurs in two regionally distinct forms. The undescribed Pilbara form is herein named as a new subspecies, namely *Mannixsaurus formosa matthingleyi* sp. nov..

The *Egernia saxatilis* Cogger, 1960 species complex has been removed from *Contundo* Wells and Wellington, 1985 as defined in that paper and placed in the newly named genus *Woolfscincus* gen. nov.. Molecular evidence as presented by Pyron *et al.* (2013) confirms that the erection of this new genus is justified.

Woolfscincus intermedia (Cogger, 1960) as defined by Cogger (1960) and as amended in Cogger (2014) is also split into three distinctive groups, treated herein as full species, two of which are formally named for the first time.

A distinctive outlier population from the Grampians in south-west Victoria is formally described herein as a new species, namely *Woolfscincus maryannmartinekae* sp. nov..

The nominate form is herein confined to the Blue Mountains region, west and south-west of Sydney, in a zone generally northwest of Moss Vale in the NSW Southern Highlands and including the escarpment country near Mittagong.

Specimens from far south-east NSW and most of Victoria (excluding the Grampians) are assigned to the new species *Woolfscincus halcoggeri* sp. nov.. Specimens from Moreton National Park, New South Wales and areas to the immediate south are also tentatively assigned to this new species, based on morphological similarities to the Victorian specimens.

Specimens from outlier hills near to the Grampians in western Victoria are presumed to be of the Grampians species.

Hence as of this paper, *Contundo* only includes the type species and another similar species from South-west Australia, herein formally described as *Contundo rosswellingtoni* sp. nov..

The species herein identified as *Silvascincus richardi* (Peters, 1869) is divided into two groups based on allopatry and morphological differences and one of these, that generally found east of the western part of the Nullarbor in South Australia is formally described herein as a new subspecies *Silvascincus richardi adrianpapalucai* subsp. nov..

While there is a potential argument to merge *Silvascincus* into *Contundo* to form a single genus, based on morphological affinities, as well as ambiguous molecular results as spelt out by Pyron *et al.* (2013), the two genera have been kept separate for the purposes of this paper more-or-less as defined by Wells and Wellington, 1985 and in anticipation of further published evidence one way or other.

The diagnosis of *Woolfscincus roomi* (Wells and Wellington, 1985), as "*Contundo roomi*" by the original authors was on its own clearly sufficient to differentiate it from congeners and it is therefore recognized as a valid taxon herein.

However this recognition is tentative in as much as Cogger (2014) has stated that the "enlarged paravertebral series" supposedly unique to the species "*Contundo roomi*" is also seen in other populations of the "*Egernia saxatilis* Cogger, 1960" species group.

As already mentioned, the present assignment of species to the genera *Woolfscincus* gen. nov., *Contundo* and *Silvascincus* beyond the type species is tentative. This is particularly with reference to the *Egernia striolata* (Peters, 1870) group of species, which quite likely may need to be transferred to *Woolfscincus* gen. nov..

The molecular data of both Doughty *et al.* (2011) and Pyron *et al.*

(2013) confirms that the erection of the new genus *Piersonsaurus* *gen. nov.* to accommodate the *Silubosaurus depressus* Günther, 1875 species group is justified, sensible and long overdue.

While this action should not arouse contention in herpetology, there is little doubt that Wolfgang Wüster and his gang of thieves will try to make the opposite the case.

GENUS *EGERNIA* GRAY, 1838

Egernia cunninghami (Gray, 1832) (type species)

Egernia barnetti Wells and Wellington, 1985

Egernia jossae Wells and Wellington, 1985

Egernia kennersoni Wells and Wellington, 1985

Egernia kreffti Peters, 1871

GENUS *SILUBOSAURUS* GRAY, 1845

Silubosaurus stokesii Gray, 1845 (type species)

Silubosaurus hoserae *sp. nov.* (this paper)

Silubosaurus hosmeri (Kinghorn, 1955)

Silubosaurus zellingi De Vis, 1884

GENUS *LIOPHOLIS* FITZINGER, 1843

Liopholis whitii (Lacépède, 1804) (type species)

Liopholis bradshawi Wells and Wellington, 1985

Liopholis bos (Storr, 1960)

Liopholis compressicaudus (Quoy and Gaimard, 1842)

Liopholis coplandi Wells and Wellington, 1985

Liopholis guthega (Donnellan, Hutchinson, Dempsey and Osborne, 2002)

Liopholis longicaudus (Ford, 1963)

Liopholis margaretae (Storr, 1968)

Liopholis messeli Wells and Wellington, 1985

Liopholis modesta Storr, (1968)

Liopholis montana (Donnellan, Hutchinson, Dempsey and Osborne, 2002)

Liopholis multiscutata (Mitchell and Behrndt, 1949)

Liopholis personata (Storr, 1968)

Liopholis pulchra (Werner, 1910)

Liopholis robertsoni Wells and Wellington, 1985

GENUS *LISSOLEPIS* PETERS, 1872

Lissolepis luctuosa (Peters, 1866) (type species)

Lissolepis coventryi (Storr, 1978)

GENUS *TROPIDOLOPISMA* DUMÉRIL AND BIBRON, 1839

Tropidolopisma kingi (Gray, 1839) (type species)

GENUS *BELLATORIAS* WELLS AND WELLINGTON, 1984

Bellatorias major (Gray, 1845) (type species)

GENUS *HORTONIA* WELLS AND WELLINGTON, 1985

Hortonia obiri Wells and Wellington, 1985 (type species)

Hortonia frerei (Günther, 1897)

Hortonia oakesi Wells and Wellington, 1985

Hortonia shinei Wells and Wellington, 1985

GENUS *FLAMOSCINCUS* WELLS AND WELLINGTON, 1984

Flamoscincus kintorei (Stirling and Zeitz, 1893) (type species)

Flamoscincus inornata (Rosen, 1905)

Flamoscincus slateri (Storr, 1968)

Flamoscincus striata (Sternfeld, 1919)

Flamoscincus virgata (Storr, 1968)

Flamoscincus webberi Wells and Wellington, 1985

GENUS *CONTUNDO* WELLS AND WELLINGTON, 1984

Contundo napoleonis (Gray, 1839) (type species)

Contundo rosswellingtoni *sp. nov.* (this paper)

GENUS *STORRISAURUS* WELLS AND WELLINGTON, 1985

Sorrisaurus husbandi Wells and Wellington, 1985 (type species)

Storrisaurus rugosa (De Vis, 1888)

GENUS *SILVASCINCUS* WELLS AND WELLINGTON, 1985

Silvascincus pilbaraensis (Storr, 1978) (type species)

Silvascincus douglasi (Glauert, 1956)

Silvascincus richardi (Peters, 1869)

Silvascincus striolata (Peters, 1870)

NEW GENUS *WOOLFSCINCUS* *GEN. NOV.*

Type species: *Egernia saxatilis* Cogger, 1960.

Diagnosis: The genus *Woolfscincus* *gen. nov.* is readily separated from all others in the *Egernia* Gray, 1838 *sensu lato* complex (as defined by Cogger 2014 at the top of page 538), by the following unique suite of characters: Strongly keeled dorsal scales, but the dorsal scales are neither completely smooth or alternatively not spinose in any way; there is a series of expanded upper caudals on the base of the tail; the colouration and pattern is somewhat dull or otherwise obscured; dark brown or black above with darker striations and when a broad blackish upper lateral zone is obvious, is usually restricted to the neck and anterior part of the body and does not strongly contrast with the throat which is heavily speckled and mottled with dark brown.

Similar looking species in other genera (e.g. *Silvascincus* Wells and Wellington, 1985 or *Contundo* Wells and Wellington, 1984) do not have the preceding suite of characters as a total package.

Distribution: Restricted to hilly parts of south-east Australia from north-east Victoria to south-east Queensland, including rocky areas near the coast and nearby ranges.

Etymology: Named in honour of Paul Woolf of Walloon, Queensland, Australia, the foundation president of the Herpetological Society of Queensland, Incorporated, for his many contributions to herpetology and wildlife conservation over some decades.

Content: *Woolfscincus saxatilis* (Cogger, 1960) (type species); *Woolfscincus halcoggeri* *sp. nov.* (this paper); *Woolfscincus intermedia* (Cogger, 1960); *Woolfscincus macpheeii* (Wells and Wellington, 1984); *Woolfscincus maryannmartinekae* *sp. nov.* (this paper); *Woolfscincus roomi* (Wells and Wellington, 1985).

NEW GENUS *PIERSONSAURUS* *GEN. NOV.*

Type species: *Silubosaurus depressus* Günther, 1875.

Diagnosis: The genus *Piersonsaurus* *gen. nov.* is diagnosed and separated from all other similar Australian species as follows: Medium-sized (to 110 mm SVL) skinks with triangular head and a blunt snout, spinose dorsal scalation with each scale usually possessing a long central spine flanked by two smaller spines being most spinose as in largest spines on the tail. A very short stout non-fragile, strongly laterally compressed tail with long spines, no nuchal scales. Litter size is usually two (modified from Doughty *et al.* 2011). Skinks in the genera *Egernia* Gray, 1838 and *Silubosaurus* Gray, 1845 are both easily separated from *Piersonsaurus* *gen. nov.* which is further defined and diagnosed by having nasal scales in contact and the caudal scales each with three well developed spines with the central one being the largest. By contrast skinks in the genera *Egernia* Gray, 1838 and *Silubosaurus* Gray, 1845 are both separated from *Piersonsaurus* *gen. nov.* by having nasal scales not in contact, caudal scales each with a single spine only or rarely two tiny lateral spines. *Egernia* Gray, 1838 is readily separated from *Silubosaurus* Gray, 1845 by having a tail that is more-or-less circular in cross section and more than 30 mid-body rows, which is a combination not seen in *Silubosaurus*.

Outside of *Egernia*, *Silubosaurus* and *Piersonsaurus* *gen. nov.* there are no other similar spiny skinks in the original group of species within *Egernia sensu lato*.

Distribution: Effectively endemic to Western Australia (most of that state except the tropics, far south and most of the far east of the state, although there are outlier populations inside the Northern Territory in the far south-west of that state. A detailed distribution map based on museum records in Australia has been published by Doughty *et al.* (2011).

Etymology: Named in honour of Charles Pierson, book publisher, of Mosman and Moss Vale in New South Wales, Australia, who published numerous books that made significant contributions to wildlife conservation in Australia and globally including Hoser (1989, 1991 and 1993). See Hoser (1996) for further details.

Content: *Piersonsaurus depressus* (Günther, 1875) (type species); *Piersonsaurus cygnitis* (Doughty, Keally and Donnellan, 2011); *Piersonsaurus eos* (Doughty, Keally and Donnellan, 2011); *Piersonsaurus epsisolus* (Doughty, Keally and Donnellan, 2011).

NEW GENUS *MANNIXSAURUS* *GEN. NOV.*

Type species: *Egernia formosa* Fry, 1914.

Diagnosis: *Mannixsaurus* *gen. nov.*, while superficially similar to other genera and species within the *Egernia* Gray, 1838 genus complex, is sufficiently divergent and different from all other species to warrant being placed in its own genus.

Mannixsaurus gen. nov. are readily separated from all other similar Australian genera and species by the following unique suite of characters: Adult snout-vent length up to 110 mm, original tail is 108-150% of the snout-vent; Nasals are usually separated and weakly grooved. Prefrontals are usually in contact, 1-5 nuchals, 6-8 supraciliaries, 7 upper labials. The ear aperture is moderately narrow and nearly vertical; lobules number 3-6. There are 28-30 mid-body rows, the dorsals are smooth or striated. There are 17-23 lamellae under the longest toe. The dorsal colouration is with a back that is pale brown to olive with dark-brown oblong spots not extending to the latero-dorsal region and coalescing into two stripes on the fore-back.

Distribution: Interior parts of Western Australia, Australia, from the southern Pilbara south to nearly Norseman and east to the western edge of the Great Victoria Desert and Nullarbor Plain (Storr *et al.* 1981).

Etymology: Named in honour of Daniel Mannix of the Victorian Dog Training Academy (VDTA) for services to animal welfare in Australia.

Content: *Mannixsaurus formosa* (Fry, 1914) (including the subspecies formally described within this paper).

SILUBOSAURUS HOSERAE SP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, NSW, Australia, specimen number: R.18663, collected at Mount Isa, Queensland, Australia, Latitude -20.73 S, Longitude 139.48 E. The Australian Museum in Sydney, NSW, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: Three preserved specimens at the Australian Museum in Sydney, NSW, Australia, specimen numbers: R.19292, R.16865, and R.91953, all collected at Mount Isa, Queensland, Australia, Latitude -20.73 S, Longitude 139.48 E, and a preserved specimen at the Queensland Museum in Brisbane, Queensland, Australia, specimen number: J79876, collected from near Cloncurry Creek, West of the Flinders Highway, Queensland, Australia, Latitude -20.77 S, Longitude 140.20 E.

Diagnosis: Until now, *Silubosaurus hoserae sp. nov.* has until now been treated as *S. hosmeri* (Kingham, 1955). In actual fact, the latter species is a substantially different animal described from a specimen in north-east Queensland, that is confined to that general region.

Proper *S. hosmeri* (Kingham, 1955) is sometimes referred to as the "black form" as depicted on page 510 of Brown (2014). The other two specimens of *S. hosmeri* (called "*Egernia hosmeri*") depicted on page 510 of Brown (2014) are in fact the two subspecies of *S. hoserae sp. nov.* as described herein.

S. hoserae sp. nov. is readily separated from *S. hosmeri* by having a well defined dorsal body pattern consisting of large obvious yellow spots on a light-brown background, each spot usually consisting of at least one full scale and at times more, or alternatively the light patches are large and consist of several scales (subspecies *S. hoserae maxinehoserae subsp. nov.*), versus an obviously chocolate brown dorsal colour and minimal light markings or spots in *S. hosmeri*.

The lower jaw and lower labials are usually a dark blackish brown in colour in *S. hosmeri*, versus overwhelmingly white (with limited dark markings) in both subspecies of *S. hoserae sp. nov.*

In all but the most aged of specimens the upper surface of the head of *S. hoserae sp. nov.* has significant areas of whitish pigment versus little or none on *S. hosmeri*.

S. hosmeri has a continuous white line on the upper labials, as opposed to one that is clearly broken by brown intrusions or scale etchings on the upper labials in *S. hoserae sp. nov.*

The subspecies *Silubosaurus hoserae maxinehoserae subsp. nov.* is readily separated from *S. hoserae hoserae subsp. nov.* by having well defined black or brown bars running across the upper and lower labials of similar thickness on the top and bottom labials, versus moderately defined bars on the labials with the part on the lower labials significantly thicker than those on the upper labials.

Also the most obvious feature differentiating *Silubosaurus hoserae maxinehoserae subsp. nov.* from the nominate subspecies is the general dorsal body pattern. In *S. hoserae hoserae subsp. nov.* the lighter yellow markings on the body (which is usually a reddish brown colour) are typically one, or less often two scales in size. By contrast, in *S. hoserae maxinehoserae subsp. nov.* the light (near white) markings on a background colour of yellowish brown are large

and consist of patches of several scales, which often tend to merge to give an appearance of irregular bands, the darker ones being significantly thicker than those formed by the merging lighter scales.

Distribution: Essentially confined to the greater Barkly Tableland of north western Queensland and immediately adjoining parts of the Northern Territory, including adjoining areas to the north, where rocky habitat prevails. The population confined to rocky parts of the Einasleigh uplands on Cape York and nearby in the western rain shadow of the Great Dividing Range are the nominate form of *Silubosaurus hosmeri* (Kingham, 1955), with a type locality of Kaban, North-East Queensland, Australia, Latitude -17.52° S, Longitude 145.39° E.

The low-lying region between these areas (Julia Creek to Hughenden in the area of the Flinders River drainage) forms an impenetrable barrier between any gene flow between the populations and therefore it is appropriate that the two be treated as separate species.

Etymology: Named in honour of my magnificent wife, Shireen Vanessa Hoser in recognition of her globally significant contributions to wildlife conservation spanning in excess of two decades.

SILUBOSAURUS HOSERAE MAXINEHOSERAE SUBSP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales (NSW), Australia, specimen number: R.106841, collected from "30km (Approx.) S. McArthur River Base Camp", Northern Territory, Australia, Latitude -16.63 S, Longitude 136.00 E.

The Australian Museum in Sydney, NSW, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: Two preserved specimens at the Australian Museum in Sydney, NSW, Australia, specimen numbers: R.57050, R.57051, both collected from "30km (Approx.) S. McArthur River Base Camp", Northern Territory, Australia, Latitude -16.63 S., Longitude 136.00 E.

Diagnosis: The subspecies *Silubosaurus hoserae maxinehoserae subsp. nov.* is readily separated from *S. hoserae hoserae subsp. nov.* by having well defined black or brown bars running across the upper and lower labials of similar thickness on the top and bottom labials, versus moderately defined bars on the labials with the part on the lower labials significantly thicker than those on the upper labials.

Also the most obvious feature differentiating *Silubosaurus hoserae maxinehoserae subsp. nov.* from the nominate subspecies is the general dorsal body pattern. In *S. hoserae hoserae subsp. nov.* the lighter yellow markings on the body (which is usually a reddish brown colour) are typically one, or less often two scales in size. By contrast, in *S. hoserae maxinehoserae subsp. nov.* the light (near white) markings on a background colour of yellowish brown are large and consist of patches of several scales, which often tend to merge to give an appearance of irregular bands, the darker ones being significantly thicker than those formed by the merging lighter scales. Typical specimens of both subspecies (called "*Egernia hosmeri*") are depicted on page 510 of Brown (2014)

Until now, *Silubosaurus hoserae sp. nov.* has until now been treated as *S. hosmeri* (Kingham, 1955). In actual fact, the latter species is a substantially different animal described from a specimen in north-east Queensland, that is confined to that general region (east of the Flinders River drainage system in central north Queensland).

Proper (nominate form) *S. hosmeri* (Kingham, 1955) is sometimes referred to as the "black form" as depicted on page 510 of Brown (2014). The other two specimens of *S. hosmeri* (called "*Egernia hosmeri*") depicted on page 510 of Brown (2014) are in fact the two subspecies of *S. hoserae sp. nov.* as described herein.

S. hoserae sp. nov. is readily separated from *S. hosmeri* by having a well defined dorsal body pattern consisting of large obvious yellow spots on a light-brown background, each spot usually consisting of at least one full scale and at times more, or alternatively the light patches are large and consist of several scales (subspecies *S. hoserae maxinehoserae subsp. nov.*), versus an obviously chocolate brown dorsal colour and minimal light markings or spots in *S. hosmeri*.

The lower jaw and lower labials of *S. hosmeri* are usually a dark blackish brown in colour, versus overwhelmingly white (with limited dark markings) in both subspecies of *S. hoserae sp. nov.* In all but the most aged of specimens the upper surface of the head of *S. hoserae sp. nov.* has significant areas of whitish pigment

versus little or none on *S. hosmeri*.

S. hosmeri has a continuous white line on the upper labials, as opposed to one that is clearly broken by brown intrusions or scale etchings on the upper labials in *S. hoserae sp. nov.*

Distribution: *S. hoserae sp. nov.* is essentially confined to the greater Barkly Tableland and adjoining areas to the north, where rocky habitat prevails.

The subspecies *S. hoserae maxinehoserae subsp. nov.* is known from the following region: generally from Lagoon Creek, Westmoreland Station, Gulf of Carpentaria, far north-west Queensland, (Latitude -17.49 S., Longitude 138.22 E.) west in rocky areas as far west as the type locality which is "30km (Approx.) S. Mcarthur River Base Camp", Northern Territory, Australia, Latitude -16.63 S., Longitude 136.00 E.

S. hoserae hoserae subsp. nov. occurs in the general vicinity of the Selwyn Range in the Mount Isa region of north-west Queensland. Most captive specimens and photos in books labelled as "*Egernia hosmeri*" are of this subspecies.

The population confined to rocky parts of the Einasleigh uplands on Cape York and nearby are the nominate form of *Silubosaurus hosmeri* (Kinghorn, 1955). The low-lying region between these areas (Julia Creek to Hughenden in the area of the Flinders River drainage) forms an impenetrable barrier between any gene flow between the populations and therefore it is appropriate that the two be treated as separate species.

One or more drainages apparently separate the populations of *S. hoserae maxinehoserae subsp. nov.* and *S. hoserae hoserae subsp. nov.* in the region north of the main Selwyn Range.

Etymology: Named in honour of Maxine Hoser, formerly of Margate in the United Kingdom (UK), daughter of the now deceased Cyril Hoser, also of Margate in the UK, and now currently resident in Israel, for assistances in research projects which have required time spent in the UK and Europe, visiting museums, zoos, and privately owned facilities.

SILUBOSAURUS HOSERAE HOSERAE SUBSP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales (NSW), Australia, specimen number: R.18663, collected at Mount Isa, Queensland, Australia, Latitude -20.73 S, Longitude 139.48 E. The Australian Museum in Sydney, NSW, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: Three preserved specimens at the Australian Museum in Sydney, NSW, Australia, specimen numbers: R.19292, R.16865, and R.91953, all collected at Mount Isa, Queensland, Australia, Latitude -20.73 S., Longitude 139.48 E., and a preserved specimen at the Queensland Museum in Brisbane, Queensland, Australia, specimen number: J79876, collected from

near Cloncurry Creek, West of the Flinders Highway, Queensland, Australia, Latitude -20.77 S., Longitude 140.20 E.

Diagnosis: The subspecies *Silubosaurus hoserae maxinehoserae subsp. nov.* is readily separated from *S. hoserae hoserae subsp. nov.* by having well defined black or brown bars running across the upper and lower labials of similar thickness on the top and bottom labials, versus moderately defined bars on the labials with the part on the lower labials significantly thicker than those on the upper labials.

Also the most obvious feature differentiating *Silubosaurus hoserae maxinehoserae subsp. nov.* from the nominate subspecies is the general dorsal body pattern. In *S. hoserae hoserae subsp. nov.* the lighter yellow markings on the body (which is usually a reddish brown colour) are typically one, or less often two scales in size. By contrast, in *S. hoserae maxinehoserae subsp. nov.* the light (near white) markings on a background colour of yellowish brown are large and consist of patches of several scales, which often tend to merge to give an appearance of irregular bands, the darker ones being significantly thicker than those formed by the merging lighter scales. Typical specimens of both subspecies (called "*Egernia hosmeri*") are depicted on page 510 of Brown (2014)

Until now, *Silubosaurus hoserae sp. nov.* has until now been treated as *S. hosmeri* (Kinghorn, 1955). In actual fact, the latter species is a substantially different animal described from a specimen in north-east Queensland, that is confined to that general region (east of the Flinders River drainage system in central north Queensland).

Proper *S. hosmeri* (Kinghorn, 1955) is sometimes referred to as the "black form" as depicted on page 510 of Brown (2014). The other two specimens of *S. hosmeri* (called "*Egernia hosmeri*") depicted on page 510 of Brown (2014) are in fact the two subspecies of *S. hoserae sp. nov.* as described herein.

S. hoserae sp. nov. is readily separated from *S. hosmeri* by having a well defined dorsal body pattern consisting of large obvious yellow spots on a light-brown background, each spot usually consisting of at least one full scale and at times more, or alternatively the light patches are large and consist of several scales (subspecies *S. hoserae maxinehoserae subsp. nov.*), versus an obviously chocolate brown dorsal colour and minimal light markings or spots in *S. hosmeri*.

The lower jaw and lower labials are usually a dark blackish brown in colour, versus overwhelmingly white (with limited dark markings) in both subspecies of *S. hoserae sp. nov.*

In all but the most aged of specimens the upper surface of the head of *S. hoserae sp. nov.* has significant areas of whitish pigment versus little or none on *S. hosmeri*.

S. hosmeri has a continuous white line on the upper labials, as opposed to one that is clearly broken by brown intrusions or scale etchings on the upper labials in *S. hoserae sp. nov.*

Distribution: *S. hoserae sp. nov.* is essentially confined to the greater Barkly Tableland and adjoining areas to the north, where rocky habitat prevails.

The subspecies *S. hoserae maxinehoserae subsp. nov.* is known from the following region: Generally from Lagoon Creek, Westmoreland Station, Gulf of Carpentaria, far north-west Queensland, (Latitude -17.49 S., Longitude 138.22 E.) west in rocky areas as far west as the type locality which is "30km (Approx.) S. Mcarthur River Base Camp", Northern Territory, Australia, Latitude -16.63 S., Longitude 136.00 E.

S. hoserae hoserae subsp. nov. occurs in the general vicinity of the Selwyn Range in the Mount Isa region of north-west Queensland. Most captive specimens and photos in books identified as "*Egernia hosmeri*" are of this subspecies. The population confined to rocky parts of the Einasleigh uplands on Cape York and nearby are the nominate form of *Silubosaurus hosmeri* (Kinghorn, 1955). The low-lying region between these areas (Julia Creek to Hughenden in the area of the Flinders River drainage) forms an impenetrable barrier between any gene flow between the populations and therefore it is appropriate they be treated as separate species.

One or more drainages apparently separate the populations of *S. hoserae maxinehoserae subsp. nov.* and *S. hoserae hoserae subsp. nov.* in the region north of the main Selwyn Range.

Etymology: Named in honour of my magnificent wife, Shireen Vanessa Hoser in recognition of her globally significant contributions to wildlife conservation spanning in excess of two decades.

WOOLFSCINCUS MARYANNMARTINEKAE SP. NOV.

Holotype: A preserved specimen at the National Museum of Victoria in Melbourne, Victoria, Australia, specimen number: D38230 collected at the Cave of Hands, Billywing, The Grampians, western Victoria, Latitude -37.27 S., Longitude 142.25 E.

The National Museum of Victoria in Melbourne, Victoria, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: Three preserved specimens at the National Museum of Victoria in Melbourne, Victoria, Australia, specimen numbers: D33110, D33111 and D33112 from Tower Hill, Mt Rosea Track, The Grampians, Western Victoria, Latitude -37.20 S., Long. 142.47 E.

Diagnosis: *Woolfscincus maryannmartinekae sp. nov.* has until now been treated as a population of *Egernia saxatilis* Cogger, 1960 (now *Woolfscincus saxatilis*), or the subspecies or species *Woolfscincus saxatilis intermedia* (Cogger, 1960) / *Woolfscincus intermedia* (Cogger, 1960). As already stated in this paper, the four relevant previously described forms within this species group are all treated as full species.

While the description of *Woolfscincus roomi* (Wells and Wellington, 1985) is valid and the name available under the rules of *International Code of Zoological Nomenclature* (Ride *et al.* 1999), this taxon appears in most respects to be like *W. saxatilis* except for the greater preponderance of "an enlarged paravertebral series" (Wells and Wellington 1985), as outlined by Cogger (2014).

It is treated herein as a separate species-level taxon provisionally. However in terms of separating that taxon from others in this

species group including the forms first described in this paper, it should be treated merely as a variant of *W. saxatilis* for the purposes of separating it from the newly described forms.

Woolfscincus saxatilis is defined as having 36-41 mid-body scale rows; four spinose auricular lobules on each side, a dark brown dorsal body colour and without lighter, broad dorsolateral stripes (Cogger 1960).

W. roomi (Wells and Wellington, 1985) from the Nandewar Range in NSW is similar in most respects to *W. saxatilis* except for what the describing authors said was unique in having an "enlarged paravertebral series". Cogger (2014) has stated that the same condition occurs in other specimens within the group he defines as *W. saxatilis*, but in the absence of information as to which particular population he refers to, noting other significant differences between populations and that they have been divided up in this paper, I tentatively accept that *W. roomi* is a taxon probably worthy of recognition.

W. intermedia is similar in most respects to *W. saxatilis*, except that the auricular lobules, though

rugose, are rarely spinose, and may number as few as two on each side and this taxon has 28-35 mid-body scale rows, which separates it readily from *W. saxatilis* (Cogger 1960).

The species *W. mcphoei* (Wells and Wellington, 1984), from the coast of north-east New South Wales and nearby south-east Queensland is readily separated from *W. saxatilis* and *W. intermedia* and all other species in the complex by having prominently white spotted lips, side of face and neck, being on a dark background; usually less than 30 mid-body rows and ear lobules that are moderate or rounded.

W. halcoggeri sp. nov., has until now been treated as *W. intermedia* (see above), but is readily separated from *W. intermedia* by the presence of strongly contrasting white and black markings on the head and neck, versus dull and generally indistinct in *W. intermedia*.

W. halcoggeri sp. nov. generally lacks any prominent white spotting behind the eye as seen in *W. mcphoei* and if any at all is present, this is dull and indistinct.

W. halcoggeri sp. nov. is also most readily separated from *W. intermedia* by the possession of obviously white upper labials, versus brown or mainly brown in *W. intermedia*.

Specimens from Moreton National Park, New South Wales, west of Nowra and immediately adjacent areas are tentatively assigned to *W. halcoggeri sp. nov.* on the basis of obviously white upper labials in these specimens. This appears to be the north-east limit for this taxon.

W. maryannmartinekae sp. nov. is most similar to *W. halcoggeri sp. nov.* and in the absence of further information would be diagnosed as that taxon.

W. maryannmartinekae sp. nov. is however easily separated from all others in the genus *Woolfscincus gen. nov.* by the following suite of characters: A strong reddish hue throughout, including over white areas on the upper body and labials, which are also otherwise white in colour and an obvious zone of fully whitish scales posterior to the eye, which is not seen in any other species in the group.

W. maryannmartinekae sp. nov. is also readily separated from all other species in *Woolfscincus gen. nov.* by the fact that all scales immediately anterior to the ear hole are light in colour versus some or all being darker in colour in all other species.

Distribution: *Woolfscincus maryannmartinekae sp. nov.* is known only from the Grampians (range of mountains) in Western Victoria and immediately adjacent outliers.

Etymology: Named in honour of Maryann Martinek, now of Bendigo, Victoria, Australia in recognition of her pivotal role in exposing one of the biggest "Fake News" stories to ever be fabricated for improper purposes in Australia, as documented in Hoser (2010).

WOOLFSCINCUS HALCOGGERI SP. NOV.

Holotype: A preserved specimen at the National Museum of Victoria in Melbourne, Victoria, Australia, specimen number: D38265 collected at 15.3 km West of Wingan Inlet, Victoria, Australia, Latitude -37.73 S., Longitude 149.32 E.

The National Museum of Victoria in Melbourne, Victoria, Australia, is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the National Museum of Victoria in Melbourne, Victoria, Australia, specimen number: D38266 collected at 15.3 km West of Wingan Inlet, Victoria, Australia,

Latitude -37.73, Longitude 149.32.

Diagnosis: *Woolfscincus halcoggeri sp. nov.* has until now been treated as a population of *Egernia saxatilis* Cogger, 1960 (now *Woolfscincus saxatilis*), or the subspecies or species *Woolfscincus saxatilis intermedia* (Cogger, 1960) / *Woolfscincus intermedia* (Cogger, 1960).

As already stated in this paper, the four relevant previously described forms within this species group are all treated as full species.

While the description of *Woolfscincus roomi* (Wells and Wellington, 1985) is valid and the name available and within the rules of the ICZN, this taxon appears in most respects to be like *W. saxatilis* except for the greater preponderance of "an enlarged paravertebral series" (Wells and Wellington 1985), as outlined by Cogger (2014). It is treated herein as a separate species-level taxon provisionally. However in terms of separating that taxon from others in this species group including the forms first described in this paper, it should be treated merely as a variant of *W. saxatilis* for the purposes of separating it from the newly described forms.

Woolfscincus saxatilis is defined as having 36-41 mid-body scale rows; four spinose auricular lobules on each side, a dark brown dorsal body colour and without lighter, broad dorsolateral stripes (Cogger 1960).

W. roomi (Wells and Wellington, 1985) from the Nandewar Range in NSW is similar in most respects to *W. saxatilis* except for what the describing authors said was a unique "enlarged paravertebral series". Cogger (2014) has stated that the same condition occurs in other specimens within the group he defines as *W. saxatilis*, but in the absence of information as to which particular population he refers to, noting other significant differences between populations, I tentatively accept that *W. roomi* is a taxon worthy of recognition.

W. intermedia is similar in most respects to *W. saxatilis*, except that the auricular lobules, though rugose, are rarely spinose, and may number as few as two on each side and this taxon has 28-35 mid-body scale rows, which separates it readily from *W. saxatilis* (Cogger 1960).

The species *W. mcphoei* (Wells and Wellington, 1984), from the coast of north-east New South Wales and nearby south-east Queensland is readily separated from *W. saxatilis* and *W. intermedia* and all other species in the complex by having prominently white spotted lips, side of face and neck, being on a dark background; usually less than 30 mid-body rows and ear lobules that are moderate or rounded.

W. halcoggeri sp. nov., has until now been treated as *W. intermedia* (see above), which it would otherwise be identified as, but is readily separated from *W. intermedia* by the presence of strongly contrasting white and black markings on the head and neck, versus dull and generally indistinct in *W. intermedia*.

W. halcoggeri sp. nov. generally lacks any prominent white spotting behind the eye as seen in *W. mcphoei* and if any at all is present, this is dull and indistinct and in contrast to otherwise prominent interfaces between dark and light scales on the head and neck.

W. halcoggeri sp. nov. is also most readily separated from *W. intermedia* by the possession of obviously white upper labials, versus brown or mainly brown in *W. intermedia*.

Specimens from Moreton National Park, New South Wales, west of Nowra and immediately adjacent areas are tentatively assigned to *W. halcoggeri sp. nov.* on the basis of obviously white upper labials in these specimens. This appears to be the north-east limit for this taxon. *W. maryannmartinekae sp. nov.* is most similar to *W. halcoggeri sp. nov.* and in the absence of further information would be diagnosed as that taxon.

W. maryannmartinekae sp. nov. is however easily separated from all others in the genus *Woolfscincus gen. nov.* including *W. halcoggeri sp. nov.* by the following suite of characters: A strong reddish hue throughout the dorsum and sides, including over white areas on the upper body and labials, which are also white in colour and is further diagnosed and separated from all other species-level taxa in the genus by an obvious zone of fully whitish scales posterior to the eye, which is not seen in any other species in the group.

W. maryannmartinekae sp. nov. is also readily separated from all other species in *Woolfscincus gen. nov.* by the fact that all scales immediately anterior to the ear hole are light in colour versus some or all being darker in colour in all other species.

Distribution: The centre of distribution for *W. halcoggeri* sp. nov. is eastern Victoria, west to about Melbourne and environs, as well as nearby parts of southern New South Wales near the coast and north to about Moreton National Park and including the Wollongong Escarpment. *W. intermedia* is herein restricted to the area north and west of Moss Vale, New South Wales, including the Mittagong Escarpment and throughout the Blue Mountains region and immediately adjacent high altitude mountains.

Etymology: Named in honour of Dr. Harold (Hal) G. Cogger, formerly of Turrumurra, New South Wales, Australia, now of Pearl Beach, just north of Sydney, New South Wales, who spent all or most of his professional career at the Australian Museum in Sydney, Australia. His contribution to Australian herpetology has been immense and is most obvious to most people in the major herpetological texts he has authored including Cogger (2014) being the seventh and best yet edition of his comprehensive texts on Australian reptiles and Amphibians. I note here that I have serious issues with his obviously overly conservative and out of date treatment of many taxa and that he sometimes takes advice from people that he should know not to listen to.

For example in Cogger (2014) he still refers to pythons as being in the family "Boidae", and refers to Australian Green Tree Snakes as being in the genus "*Dendrelaphis* Boulenger, 1890", even though this is a genus name for a completely different group of snakes from India! I could give dozens of similar examples from that book alone, but in spite of all this, his works still represent an amazing world-leading effort at dealing comprehensively with over 1,000 species from a single continent sized land mass in an identification guide, done in a way that puts Australian herpetological books at the front of the global pack.

No half-decent herpetologist in Australia would dare go without at least one copy of one edition of his most comprehensive text.

He has also done his work ethically in accordance with the relevant rules of Australian and international law and the scientific rules and dictates of the International Commission of Zoological Nomenclature (ICZN), on which he once sat as an esteemed member.

I also note that differences of opinion and even when presented with the same facts are part and parcel of honest scientific discourse and to that extent, nothing is to be held against Hal Cogger in terms of this. Noting that at all times he has acted within the rules and ethically and to that extent it puts him ahead of many of his contemporaries in the field of Australian herpetology.

Many people regard Hal Cogger as Australia's pre-eminent herpetologist and this has been the case for many years, including pretty much all of my own entire 50 year tenure as an active Australian herpetologist. In terms of the science of herpetology, Cogger must be held up with other so-called "Global Greats" like George Albert Boulenger, John Edward Gray, André Marie Constant Duméril and Gabriel Bibron.

CONTUNDO ROSSWELLINGTONI SP. NOV.

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R97546 collected from Barrier Island Western Australia, Australia, Latitude 123.12 E., Longitude -33.98 S.

The Western Australian Museum, Perth, Western Australia, Australia is a facility that allows access to its holdings.

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R97566 from Hope Island, Western Australia, Australia, Latitude -34.08 S., Longitude 122.17 E.

Diagnosis: Until now *Contundo rosswellingtoni* sp. nov. has been treated as the eastern population of *C. napoleonis* (Gray, 1839). However *C. rosswellingtoni* sp. nov. is readily separated from *C. napoleonis* by the presence of numerous white spots and flecks on the upper surfaces of the body in adults, with a silvery grey and black pattern formed by flecks forming a somewhat indistinct dorsal pattern, versus a reddish grey dorsal pattern with distinct darker stripes running along the back and sides in *C. napoleonis*.

C. napoleonis has a distinct and obvious interface between black (top) and white (below) on the neck between the ear and front leg, versus no such distinct interface in *C. rosswellingtoni* sp. nov.

On original tails *C. napoleonis* has a series of distinct large dark squarish flecks on lighter background running along the anterior two thirds of the tail. Any black or dark flecking on the tail of *C.*

rosswellingtoni sp. nov. is indistinct.

Noteworthy is that the exact provenance of Gray's holotype for *C. napoleonis* is not given in the description he published in 1839. However from the very brief description, he clearly describes the colouration of the eastern population, herein referred to as *C. napoleonis*.

This is why it is the western population that is treated as undescribed and formally named herein.

The entirety of his four-line formal description reads as follows:

"*Tiliqua Napoleonis*. Scincus Napoleonis, Cuv.

Brown with three pale dorsal streaks; ear scales four, large; scales three-toothed behind, three-keeled. New Holland."

Furthermore the holotype for *Egernia carinata* Smith, 1939 is from Toolbrunup, Western Australia, making this taxon synonymous with *E. napoleonis* as defined herein (also being from the westernmost population). Therefore the name "*carinata*" is unavailable for newly named taxon within this formal description.

Storr (1978) also recognized two populations of what he referred to as "*Egernia napoleonis*", now herein treated as two different species. He wrote:

"The eastern populations differ from the western in their colour pattern, greater size and more numerous mid-body scale rows, supraciliaries and upper labials. Coming from several islands and from widely separated sectors of the mainland coast, they are understandably less uniform than the western populations. In the Cape Le Grand National Park, for example, the number of midbody scale rows (40-46, N 13, mean 42.1), number of ear lobules (4-6, N 13, mean 4.7) and frequency of 9 upper labials (40%) are considerably higher than on nearby North Twin Peak Island (where the corresponding counts are 36-40, N 9, mean 38.1; 3-4, N 9, mean 3.8; and 9%)."

Cogger (2014) depicts an image of *C. rosswellingtoni* sp. nov. on the bottom of page 545.

Wilson and Swan (2017) on page 291 at the top show an image of *C. napoleonis* as recognized herein, depicted as "*Egernia napoleonis*" from Denmark, Western Australia.

Silvascincus richardi (Peters, 1869) (both subspecies) is readily separated from *Contundo napoleonis* (Gray, 1839) and *C. rosswellingtoni* sp. nov. by the absence of a pale dorso-lateral stripe or zone, versus the presence of one in *Contundo napoleonis* (Gray, 1839) and *C. rosswellingtoni* sp. nov..

See for example the relevant images on page 291 of Wilson and Swan (2017). These are images of *C. napoleonis* and *S. richardi* (as defined in this paper, and labelled with the same species names).

Distribution: *C. rosswellingtoni* sp. nov. is found generally from Esperance, Western Australia, (where most specimens are known from) eastwards along the coastal strip to as far west as Eyre (Twilight Cove), Western Australia and including nearby numerous offshore islands.

C. napoleonis is found from Hopetoun along the south-west Australian coast, in a westerly direction and including nearby areas inland, along the west coast as far north as Green Head, WA.

Etymology: Named in honour of Cliff Ross Wellington, of New South Wales, Australia, formerly of the Australian Museum in Sydney, Australia and of the New South Wales National Parks and Wildlife Service (NPWS) and co-author of some of the most important scientific papers in the history of Australian herpetology in recognition of his globally significant contributions to herpetology and wildlife conservation spanning some five decades.

SILUBOSAURUS ZELLINGI FIACUMMINGAE SUBSP. NOV.

Holotype: A preserved specimen at the Northern Territory Museum, Darwin, Northern Territory, Australia, specimen number: R32894, collected from Santa Teresa Mission, Northern Territory, Australia (Central Australia) in part of the greater MacDonnell Ranges, Latitude -24.13 S., Longitude 134.37 E. The Northern Territory Museum, Darwin, Northern Territory, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: Four preserved specimens at the Northern Territory Museum, Darwin, Northern Territory, Australia, specimen numbers: R32895, R32896, R32897, R32898 all collected from Santa Teresa Mission, Northern Territory, Australia (Central Australia) in part of the greater MacDonnell Ranges, Latitude -24.13 S., Longitude 134.37 E.

Diagnosis: Each of the various subspecies of *Silubosaurus zellingi* De Vis, 1884 (treated by most authors until now as *S. stokesii* Gray, 1845) are morphologically similar and it is for this reason that most herpetologists have treated all as being of a single species.

The diagnosis for the subspecies *Silubosaurus zellingi fiacummingae* subsp. nov. must therefore include means to separate this and all other subspecies within the *Silubosaurus zellingi* De Vis, 1884 and *S. stokesii* Gray, 1845 complex.

S. stokesii and *S. zellingi* are readily separated from other species in the genus *Silubosaurus* by having more than 30 mid-body scale rows. The other two species in the genus are *S. hoserae* sp. nov. (this paper) and *S. hosmeri* (Kinghorn, 1955).

The type form of *S. stokesii stokesii* from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by the following suite of characters: the dorsal colour is blackish or dark brown; the back and sides are usually with clusters of whitish spots; upper lips whitish; nasals usually widely separated; postnarial groove strong and usually extending to top of the nasal.

S. stokesii badia Storr, 1978 also from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by one or other of the following suites of characters, which are seen in two well-defined regional variants: 1/ Dorsal ground colour blackish or very dark brown with the back and sides usually unspotted; upper lips dark in colour; nasals narrowly separated; postnarial groove weak and usually not extending to the top of the nasal, (referred to by Storr (1978) as nominate *S. stokesii aethiops*) or 2/ Alternatively with a reddish brown dorsal colouration, upper labials being barely lighter than the scales above them, or the same colour as them, light patches on the upper body being usually two scales wide, but lacking obvious dark etching along the anterior edges (this form being identified by Storr (1978) as *S. stokesii badia*).

S. stokesii lynetteholdsworthae subsp. nov. from the interior of southern Western Australia in a region generally bounded by Yalgoo, Mt. Magnet, Cue and Murchison and slightly east of this approximately square-shaped region is readily separated from all other *S. stokesii* and *S. zellingi* on the basis of its unique glossy black colouration (as opposed to dull blackish colour in some other so-called *S. stokesii aethiops* from Shark Bay) and the possession of a relatively longer and less spinose tail as compared to other *S. stokesii* and *S. zellingi*.

In *S. stokesii lynetteholdsworthae* subsp. nov. the upper labials and limbs are also black in colour. The entire colouration is without markings, spots or flecks.

S. zellingi De Vis, 1884 is the species from central and Eastern inland Australia treated by most authors until now as a variant of *S. stokesii*. The form is herein divided into four readily separated subspecies.

The nominate form of *S. zellingi zellingi* from south-west Queensland, is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish brown dorsal colouration, with upper labials being noticeably lighter than the scales above them, light patches on the upper body being usually two scales wide, and having obvious dark etching along the anterior edges, versus an absence in similarly coloured *S. stokesii* from Western Australia. Unlike all other forms of *S. zellingi* and *S. stokesii* nominate *S. zellingi zellingi* have strongly etched scales on the upper surface of the head. The forelimbs of *S. zellingi* are cream and dark brown (in life) versus white and reddish-orange in similarly coloured West Australian *S. stokesii badia*. The dorsal surfaces of the toes of all feet of *S. zellingi* are mainly a creamish colour, versus orangeish in similarly coloured *S. stokesii badia*.

S. zellingi fiacummingae subsp. nov. is the form found in the general vicinity of the MacDonnell Ranges of Central Australia. *S. zellingi fiacummingae* subsp. nov. is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A dark blackish brown body with few if any markings in adults. In contrast to dark coloured *S. zellingi* or *S. stokesii* from elsewhere the forelimbs of *S. zellingi fiacummingae* subsp. nov. are generally unmarked and merely blackish grey in colour. Markings in *S. zellingi fiacummingae* subsp. nov. on the dorsal surface are in the form of widely scattered scales of the same colour as the rest of the body, but of a lighter shade and most common in the region of the hind limbs and anterior tail. The upper labials are noticeably lighter (off white) in colour, in contrast to the darker scales above. The toes are also dark in colour. There is no obvious etchings on any of the body scales.

S. zellingi scottgranti subsp. nov. is the most commonly seen subspecies within the *S. zellingi* complex and occurs in far western New South Wales around the Barrier Range and west, through the northern Flinders Ranges and other hills surrounding the south, west and north-west of Lake Eyre in South Australia, including rocky areas at the top (north) side of the Eyre Peninsula, also in South Australia. *S. zellingi scottgranti* subsp. nov. is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish orange-brown body colouration, with single scattered light yellow scales across the body giving a flecked appearance. While the light scales will join side by side to form broken bar-like markings, they are rarely back to back, or two wide, except around the anterior flanks and this is only usually seen in Eyre Peninsula specimens. The labials are noticeably white in colour, limbs orangey brown with obvious yellow flecks.

The lighter scales on these lizards are obvious and prominent, even in aged specimens.

S. zellingi doriskuenae subsp. nov. is the taxon from the Grey Range in north-west New South Wales and the immediately adjoining parts of south-west Queensland where suitable rocky habitat prevails. *S. zellingi doriskuenae* subsp. nov. is similar in most respects to *S. zellingi scottgranti* subsp. nov., to which it would key out to using the data presented so far.

S. zellingi doriskuenae subsp. nov. is however separated from *S. zellingi scottgranti* subsp. nov. by the fact that the lighter dorsal scales do not strongly contrast with the darker surrounding ones as in the general colour pattern is indistinct, versus distinct in *S. zellingi scottgranti* subsp. nov..

S. zellingi doriskuenae subsp. nov. also has obviously yellow-brown upper labials, versus white in *S. zellingi scottgranti* subsp. nov.. The limbs of *S. zellingi doriskuenae* subsp. nov. are either unmarked or indistinctly so only, versus obviously flecked in *S. zellingi scottgranti* subsp. nov..

S. zellingi scottgranti subsp. nov. also has numerous white markings on the tail, including scales on at least some spines, whereas this is not the case in *S. zellingi doriskuenae* subsp. nov.. Lighter tail spines in *S. zellingi zellingi* are brown or yellowish brown, but never white as in *S. zellingi scottgranti* subsp. nov..

Distribution: *S. zellingi fiacummingae* subsp. nov. is restricted to the MacDonnell Ranges area of central Australia in the Northern Territory.

Etymology: Named in honour of Fia Cumming, investigative journalist from Lyons (Canberra), ACT, Australia in recognition of her monumental and globally significant contributions to wildlife conservation and herpetology in particular as detailed in Hoser (1996).

SILUBOSAURUS ZELLINGI SCOTTGRANTI SUBSP. NOV.

Holotype: A preserved specimen in the South Australian Museum in Adelaide, South Australia, Australia, specimen number: R12807, collected at Thurlga in the Gawler Ranges, South Australia, Australia, Latitude -32.45 s., Longitude 135.78 E. The South Australian Museum in Adelaide, South Australia, Australia is a government-owned facility that allows access to its holdings.

Paratypes: Three preserved specimens in the South Australian Museum in Adelaide, South Australia, Australia, being specimen number: R29160, collected North East of Minnipa, South Australia, Australia, Latitude -32.17 S., Longitude 135.75 E.; specimen number: R25437, collected at the hills north-west of Mount Ive Homestead in the Gawler Ranges in South Australia, Australia, Latitude -32.40 S., Longitude 136.07 E.; specimen number: R17677 collected from North-west of Yardea Station Shearing Shed, in South Australia, Australia, Latitude -32.33 S., Longitude 135.67 E.

Diagnosis: Each of the various subspecies of *Silubosaurus zellingi* De Vis, 1884 (treated by most authors until now as eastern *S. stokesii* Gray, 1845) are morphologically similar and it is for this reason that most herpetologists have treated all as one species.

The diagnosis for the subspecies *Silubosaurus zellingi scottgranti* subsp. nov. must therefore include means to separate this and all other subspecies within the *Silubosaurus zellingi* De Vis, 1884 and *S. stokesii* Gray, 1845 complex.

S. stokesii and *S. zellingi* are readily separated from other species in the genus *Silubosaurus* by having more than 30 mid-body scale rows. The other two species in the genus are *S. hoserae* sp. nov. (this paper) and *S. hosmeri* (Kinghorn, 1955).

The type form of *S. stokesii stokesii* from Western Australia is

readily separated from all other subspecies and all forms of *S. zellingi* by the following suite of characters: the dorsal colour is blackish or dark brown; the back and sides are usually with clusters of whitish spots; upper lips whitish; nasals usually widely separated; postnarial groove strong and usually extending to top of the nasal. *S. stokesii badia* Storr, 1978 also from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by one or other of the following suites of characters, which are seen in two well-defined regional variants: 1/ Dorsal ground colour blackish or very dark brown with the back and sides usually unspotted; upper lips dark in colour; nasals narrowly separated; postnarial groove weak and usually not extending to the top of the nasal, (referred to by Storr (1978) as nominate *S. stokesii aethiops*) or 2/ Alternatively with a reddish brown dorsal colouration, upper labials being barely lighter than the scales above them, or the same colour as them, light patches on the upper body being usually two scales wide, but lacking obvious dark etching along the anterior edges (this form being identified by Storr (1978) as *S. stokesii badia*).

S. stokesii lynetteholdsworthae subsp. nov. from the interior of southern Western Australia in a region generally bounded by Yalgoo, Mt. Magnet, Cue and Murchison and slightly east of this approximately square-shaped region is readily separated from all other *S. stokesii* and *S. zellingi* on the basis of its unique glossy black colouration (as opposed to dull blackish colour in some other so-called *S. stokesii aethiops* from Shark Bay) and the possession of a relatively longer and less spinose tail as compared to other *S. stokesii* and *S. zellingi*.

In *E. stokesii lynetteholdsworthae subsp. nov.* the upper labials and limbs are also black in colour. The entire colouration is without markings, spots or flecks. *S. zellingi* De Vis, 1884 is the species from central and Eastern inland Australia treated by most authors until now as a variant of *S. stokesii*. The form is herein divided into four readily separated subspecies.

The nominate form of *S. zellingi zellingi* from south-west Queensland, is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish brown dorsal colouration, with upper labials being noticeably lighter than the scales above them, light patches on the upper body being usually two scales wide, and having obvious dark etching along the anterior edges, versus an absence in similarly coloured *S. stokesii* from Western Australia. Unlike all other forms of *S. zellingi* and *S. stokesii* nominate *S. zellingi zellingi* have strongly etched scales on the upper surface of the head. The forelimbs of *S. zellingi* are cream and dark brown (in life) versus white and reddish-orange in similarly coloured West Australian *S. stokesii badia*. The dorsal surfaces of the toes of all feet of *S. zellingi* are mainly a creamish colour, versus orangeish in similarly coloured *S. stokesii badia*.

S. zellingi fiacummingae subsp. nov. is the form found in the general vicinity of the MacDonnell Ranges of Central Australia. *S. zellingi fiacummingae subsp. nov.* is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A dark blackish brown body with few if any markings in adults. In contrast to dark coloured *S. zellingi* or *S. stokesii* from elsewhere the forelimbs of *S. zellingi fiacummingae subsp. nov.* are generally unmarked and merely blackish grey in colour. Markings in *S. zellingi fiacummingae subsp. nov.* on the dorsal surface are in the form of widely scattered scales of the same colour as the rest of the body, but of a lighter shade and most common in the region of the hind limbs and anterior tail. The upper labials are noticeably lighter (off white) in colour, in contrast to the darker scales above. The toes are also dark in colour. There is no obvious etchings on any of the body scales.

S. zellingi scottgranti subsp. nov. is the most commonly seen subspecies within the *S. zellingi* complex and occurs in far western New South Wales around the Barrier Range and west, through the northern Flinders Ranges and other hills surrounding the south, west and north-west of Lake Eyre in South Australia, including rocky areas at the top (north) side of the Eyre Peninsula, also in South Australia. *S. zellingi scottgranti subsp. nov.* is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish orange-brown body colouration, with single scattered light yellow scales across the body giving a flecked appearance. While the light scales will join side by side to form broken bar-like markings, they are rarely back to back, or two wide, except around the anterior flanks and this is only usually seen in Eyre Peninsula specimens. The labials are noticeably white in colour, limbs orangey brown with obvious yellow flecks.

The lighter scales on these lizards are obvious and prominent, even in aged specimens.

S. zellingi doriskuenae subsp. nov. is the taxon from the Grey Range in north-west New South Wales and the immediately adjoining parts of south-west Queensland where suitable rocky habitat prevails. *S. zellingi doriskuenae subsp. nov.* is similar in most respects to *S. zellingi scottgranti subsp. nov.*, to which it would key out to using the data presented so far.

S. zellingi doriskuenae subsp. nov. is however separated from *S. zellingi scottgranti subsp. nov.* by the fact that the lighter dorsal scales do not strongly contrast with the darker surrounding ones as in the general colour pattern is indistinct, versus distinct in *S. zellingi scottgranti subsp. nov.*

S. zellingi doriskuenae subsp. nov. also has obviously yellow-brown upper labials, versus white in *S. zellingi scottgranti subsp. nov.*. The limbs of *S. zellingi doriskuenae subsp. nov.* are either unmarked or indistinctly so only, versus obviously flecked in *S. zellingi scottgranti subsp. nov.*

S. zellingi scottgranti subsp. nov. also has numerous white markings on the tail, including scales on at least some spines, whereas this is not the case in *S. zellingi doriskuenae subsp. nov.* Lighter tail spines in *S. zellingi zellingi* are brown or yellowish brown, but never white as in *S. zellingi scottgranti subsp. nov.*

Distribution: *S. zellingi scottgranti subsp. nov.* is restricted far western New South Wales around the Barrier Range and west, through the northern Flinders Ranges and other hills surrounding the south, west and north-west of Lake Eyre in South Australia, including rocky areas at the top (north) side of the Eyre Peninsula, also in South Australia.

Etymology: Named in honour of Scott Grant, formerly of Victoria, Australia and now of Whyalla, South Australia, Australia where he continues to make significant ongoing contributions to wildlife conservation and education, including through his work in wildlife rescue, education of school children and owner of the local zoo at Whyalla, which he commenced to own and operate in early 2018.

SILUBOSAURUS ZELLINGI DORISKUENE SUBSP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, NSW, Australia, specimen number: R.151043.001 collected 12 km north of Tibooburra Post office, at The Granites, at Tibooburra, New South Wales, Australia, Latitude -29.47 S., Longitude 142.01 E. The Australian Museum in Sydney, NSW, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: Two preserved specimens at the Australian Museum in Sydney, NSW, Australia, specimen numbers: R.151043.002 and R.151043.003 collected 12 km north of Tibooburra Post office, at The Granites, at Tibooburra, New South Wales, Australia, Latitude -29.47 S., Longitude 142.01 E.

Diagnosis: Each of the various subspecies of *Silubosaurus zellingi* De Vis, 1884 (treated by most authors until now as *S. stokesii* Gray, 1845) are morphologically similar and it is for this reason that most herpetologists have treated all as being of a single species.

The diagnosis for the subspecies *S. zellingi doriskuenae subsp. nov.* must therefore include means to separate this and all other subspecies within the *Silubosaurus zellingi* De Vis, 1884 and *S. stokesii* Gray, 1845 complex. *S. stokesii* and *S. zellingi* are readily separated from other species in the genus *Silubosaurus* by having more than 30 mid-body scale rows. The other two species in the genus are *S. hoserae sp. nov.* (this paper) and *S. hosmeri* (Kinghorn, 1955).

The type form of *S. stokesii stokesii* from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by the following suite of characters: the dorsal colour is blackish or dark brown; the back and sides are usually with clusters of whitish spots; upper lips whitish; nasals usually widely separated; postnarial groove strong and usually extending to top of the nasal.

S. stokesii badia Storr, 1978 also from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by one or other of the following suites of characters, which are seen in two well-defined regional variants: 1/ Dorsal ground colour blackish or very dark brown with the back and sides usually unspotted; upper lips dark in colour; nasals narrowly separated; postnarial groove weak and usually not extending to the top of the nasal, (referred to by Storr (1978) as nominate *S. stokesii aethiops*) or 2/ Alternatively with a reddish brown dorsal colouration, upper labials being barely

lighter than the scales above them, or the same colour as them, light patches on the upper body being usually two scales wide, but lacking obvious dark etching along the anterior edges (this form being identified by Storr (1978) as *S. stokesii badia*).

S. stokesii lynetteholdsworthae subsp. nov. from the interior of southern Western Australia in a region generally bounded by Yalgoo, Mt. Magnet, Cue and Murchison and slightly east of this approximately square-shaped region is readily separated from all other *S. stokesii* and *S. zellingi* on the basis of its unique glossy black colouration (as opposed to dull blackish colour in some other so-called *S. stokesii aethiops* from Shark Bay) and the possession of a relatively longer and less spinose tail as compared to other *S. stokesii* and *S. zellingi*.

In *E. stokesii lynetteholdsworthae* subsp. nov. the upper labials and limbs are also black in colour. The entire colouration is without markings, spots or flecks. *S. zellingi* De Vis, 1884 is the species from central and Eastern inland Australia treated by most authors until now as a variant of *S. stokesii*. The form is herein divided into four readily separated subspecies.

The nominate form of *S. zellingi zellingi* from south-west Queensland, is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish brown dorsal colouration, with upper labials being noticeably lighter than the scales above them, light patches on the upper body being usually two scales wide, and having obvious dark etching along the anterior edges, versus an absence in similarly coloured *S. stokesii* from Western Australia. Unlike all other forms of *S. zellingi* and *S. stokesii* nominate *S. zellingi zellingi* have strongly etched scales on the upper surface of the head. The forelimbs of *S. zellingi* are cream and dark brown (in life) versus white and reddish-orange in similarly coloured West Australian *S. stokesii badia*. The dorsal surfaces of the toes of all feet of *S. zellingi* are mainly a creamish colour, versus orangeish in similarly coloured *S. stokesii badia*.

S. zellingi fiacummingae subsp. nov. is the form found in the general vicinity of the MacDonnell Ranges of Central Australia. *S. zellingi fiacummingae* subsp. nov. is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A dark blackish brown body with few if any markings in adults. In contrast to dark coloured *S. zellingi* or *S. stokesii* from elsewhere the forelimbs of *S. zellingi fiacummingae* subsp. nov. are generally unmarked and merely blackish grey in colour. Markings in *S. zellingi fiacummingae* subsp. nov. on the dorsal surface are in the form of widely scattered scales of the same colour as the rest of the body, but of a lighter shade and most common in the region of the hind limbs and anterior tail. The upper labials are noticeably lighter (off white) in colour, in contrast to the darker scales above. The toes are also dark in colour. There is no obvious etchings on any of the body scales.

S. zellingi scottgranti subsp. nov. is the most commonly seen subspecies within the *S. zellingi* complex and occurs in far western New South Wales around the Barrier Range and west, through the northern Flinders Ranges and other hills surrounding the south, west and north-west of Lake Eyre in South Australia, including rocky areas at the top (north) side of the Eyre Peninsula, also in South Australia. *S. zellingi scottgranti* subsp. nov. is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish orange-brown body colouration, with single scattered light yellow scales across the body giving a flecked appearance. While the light scales will join side by side to form broken bar-like markings, they are rarely back to back, or two wide, except around the anterior flanks and this is only usually seen in Eyre Peninsula specimens. The labials are noticeably white in colour, limbs orangey brown with obvious yellow flecks.

The lighter scales on these lizards are obvious and prominent, even in aged specimens.

S. zellingi doriskuenae subsp. nov. is the taxon from the Grey Range in north-west New South Wales and the immediately adjoining parts of south-west Queensland where suitable rocky habitat prevails. *S. zellingi doriskuenae* subsp. nov. is similar in most respects to *S. zellingi scottgranti* subsp. nov., to which it would key out to using the data presented so far.

S. zellingi doriskuenae subsp. nov. is however separated from *S. zellingi scottgranti* subsp. nov. by the fact that the lighter dorsal scales do not strongly contrast with the darker surrounding ones as in the general colour pattern is indistinct, versus distinct in *S. zellingi scottgranti* subsp. nov..

S. zellingi doriskuenae subsp. nov. also has obviously yellow-brown

upper labials, versus white in *S. zellingi scottgranti* subsp. nov.. The limbs of *S. zellingi doriskuenae* subsp. nov. are either unmarked or indistinctly so only, versus obviously flecked in *S. zellingi scottgranti* subsp. nov.. *S. zellingi scottgranti* subsp. nov. also has numerous white markings on the tail, including scales on at least some spines, whereas this is not the case in *S. zellingi doriskuenae* subsp. nov.. Lighter tail spines in *S. zellingi zellingi* are brown or yellowish brown, but never white as in *S. zellingi scottgranti* subsp. nov..

Distribution: *S. zellingi doriskuenae* subsp. nov. is restricted far north western New South Wales around the Grey Range and outliers, including immediately adjacent parts of far south-west Queensland.

Etymology: Named in honour of Doris Kuen of Donvale, Victoria, Australia, for services to conservation, through her vitally important work in maintaining the structure, electrical fittings, plumbing and the like at the Snakebusters, wildlife displays facility in Park Orchards, Melbourne, Victoria, Australia.

SILUBOSAURUS STOKESII LYNETTEHOLDSWORTHAE SUBSP. NOV.

Holotype: A preserved adult female specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R140952, collected from Woolgerong Rock, Western Australia, Australia, Latitude -27.40 S., Longitude 117.38 E. The Western Australian Museum, Perth, Western Australia, Australia is a government-owned facility that allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R97011 from Woolgerong Rock, Western Australia, Australia, Latitude -27.40 S., Longitude 117.38 E., and 2/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R154800 collected 4 km east of Yalgoo in Western Australia, Latitude -28.35 S., Long. 116.73 E.

Diagnosis: Each of the various subspecies of *Silubosaurus zellingi* De Vis, 1884 (treated by most authors until now as *S. stokesii* Gray, 1845) are morphologically similar and it is for this reason that most herpetologists have treated all as being of a single species.

The diagnosis for the subspecies *Silubosaurus stokesii lynetteholdsworthae* subsp. nov. must therefore include means to separate this and all other subspecies within the *Silubosaurus zellingi* De Vis, 1884 and *S. stokesii* Gray, 1845 complex.

S. stokesii and *S. zellingi* are readily separated from other species in the genus *Silubosaurus* by having more than 30 mid-body scale rows. The other two species in the genus are *S. hoserae* sp. nov. (this paper) and *S. hosmeri* (Kinghorn, 1955).

The type form of *S. stokesii stokesii* from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by the following suite of characters: the dorsal colour is blackish or dark brown; the back and sides are usually with clusters of whitish spots; upper lips whitish; nasals usually widely separated; postnasal groove strong and usually extending to top of the nasal.

S. stokesii badia Storr, 1978 also from Western Australia is readily separated from all other subspecies and all forms of *S. zellingi* by one or other of the following suites of characters, which are seen in two well-defined regional variants: 1/ Dorsal ground colour blackish or very dark brown with the back and sides usually unspotted; upper lips dark in colour; nasals narrowly separated; postnasal groove weak and usually not extending to the top of the nasal, (referred to by Storr (1978) as nominate *S. stokesii aethiops*) or 2/ Alternatively with a reddish brown dorsal colouration, upper labials being barely lighter than the scales above them, or the same colour as them, light patches on the upper body being usually two scales wide, but lacking obvious dark etching along the anterior edges (this form being identified by Storr (1978) as *S. stokesii badia*).

S. stokesii lynetteholdsworthae subsp. nov. from the interior of southern Western Australia in a region generally bounded by Yalgoo, Mt. Magnet, Cue and Murchison and slightly east of this approximately square-shaped region is readily separated from all other *S. stokesii* and *S. zellingi* on the basis of its unique glossy black colouration (as opposed to dull blackish colour in some other so-called *S. stokesii aethiops* from Shark Bay) and the possession of a relatively longer and less spinose tail as compared to other *S. stokesii* and *S. zellingi*.

In *E. stokesii lynetteholdsworthae* subsp. nov. the upper labials and limbs are also black in colour. The entire colouration is without markings, spots or flecks.

S. zellingi De Vis, 1884 is the species from central and Eastern inland Australia treated by most authors until now as a variant of *S. stokesii*. The form is herein divided into four readily separated subspecies.

The nominate form of *S. zellingi zellingi* from south-west Queensland, is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish brown dorsal colouration, with upper labials being noticeably lighter than the scales above them, light patches on the upper body being usually two scales wide, and having obvious dark etching along the anterior edges, versus an absence in similarly coloured *S. stokesii* from Western Australia. Unlike all other forms of *S. zellingi* and *S. stokesii* nominate *S. zellingi zellingi* have strongly etched scales on the upper surface of the head. The forelimbs of *S. zellingi* are cream and dark brown (in life) versus white and reddish-orange in similarly coloured West Australian *S. stokesii badia*. The dorsal surfaces of the toes of all feet of *S. zellingi* are mainly a creamish colour, versus orangeish in similarly coloured *S. stokesii badia*.

S. zellingi fiacummingae subsp. nov. is the form found in the general vicinity of the MacDonnell Ranges of Central Australia. *S. zellingi fiacummingae subsp. nov.* is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A dark blackish brown body with few if any markings in adults. In contrast to dark coloured *S. zellingi* or *S. stokesii* from elsewhere the forelimbs of *S. zellingi fiacummingae subsp. nov.* are generally unmarked and merely blackish grey in colour. Markings in *S. zellingi fiacummingae subsp. nov.* on the dorsal surface are in the form of widely scattered scales of the same colour as the rest of the body, but of a lighter shade and most common in the region of the hind limbs and anterior tail. The upper labials are noticeably lighter (off white) in colour, in contrast to the darker scales above. The toes are also dark in colour. There is no obvious etchings on any of the body scales.

S. zellingi scottgranti subsp. nov. is the most commonly seen subspecies within the *S. zellingi* complex and occurs in far western New South Wales around the Barrier Range and west, through the northern Flinders Ranges and other hills surrounding the south, west and north-west of Lake Eyre in South Australia, including rocky areas at the top (north) side of the Eyre Peninsula, also in South Australia. *S. zellingi scottgranti subsp. nov.* is readily separated from all other *S. zellingi* and *S. stokesii* by the following suite of characters: A reddish orange-brown body colouration, with single scattered light yellow scales across the body giving a flecked appearance. While the light scales will join side by side to form broken bar-like markings, they are rarely back to back, or two wide, except around the anterior flanks and this is only usually seen in Eyre Peninsula specimens. The labials are noticeably white in colour, limbs orangey brown with obvious yellow flecks.

The lighter scales on these lizards are obvious and prominent, even in aged specimens.

S. zellingi doriskuenae subsp. nov. is the taxon from the Grey Range in north-west New South Wales and the immediately adjoining parts of south-west Queensland where suitable rocky habitat prevails. *S. zellingi doriskuenae subsp. nov.* is similar in most respects to *S. zellingi scottgranti subsp. nov.*, to which it would key out to using the data presented so far.

S. zellingi doriskuenae subsp. nov. is however separated from *S. zellingi scottgranti subsp. nov.* by the fact that the lighter dorsal scales do not strongly contrast with the darker surrounding ones as in the general colour pattern is indistinct, versus distinct in *S. zellingi scottgranti subsp. nov.*

S. zellingi doriskuenae subsp. nov. also has obviously yellow-brown upper labials, versus white in *S. zellingi scottgranti subsp. nov.*. The limbs of *S. zellingi doriskuenae subsp. nov.* are either unmarked or indistinctly so only, versus obviously flecked in *S. zellingi scottgranti subsp. nov.*

S. zellingi scottgranti subsp. nov. also has numerous white markings on the tail, including scales on at least some spines, whereas this is not the case in *S. zellingi doriskuenae subsp. nov.*. Lighter tail spines in *S. zellingi zellingi* are brown or yellowish brown, but never white as in *S. zellingi scottgranti subsp. nov.*

Distribution: *S. stokesii lynetteholdsworthae subsp. nov.* occurs in the interior of southern Western Australia in a region generally bounded by Yalgoo, Mt. Magnet, Cue and Murchison and slightly east of this approximately square-shaped region.

Etymology: Named in honour of Lynette Holdsworth, President of

the Friends of Toolern Creek, environment group in Melton, west of Melbourne, Victoria, Australia in recognition of her services to wildlife conservation and environmental education and protection.

MANNIXSAURUS FORMOSA MATTHINGLEYI SP. NOV.

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R52702, collected at Marandoo Mine Site at Mount Bruce, Western Australia, Australia, Latitude -22.63 S., Longitude 118.15 E. The Western Australian Museum, Perth, Western Australia, Australia is a government-owned facility that allows access to its holdings.

Paratypes: Four preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, 1/ Specimen number: R23994, collected from 7 km south-west of Mt. Newman, Western Australia, Australia, Latitude -23.40 S., Longitude 119.63 E.; 2/ Specimen number: R12126 collected at Wittenoom Gorge, Western Australia, Australia, Latitude -22.28 S., Longitude 118.32 E.; 3/ Specimen number: R33423 collected at Python Pool, Mount Herbert, Western Australia, Australia, Latitude -21.33 S., Longitude 117.23 E.; 4/ Specimen number: R20016 collected at Tambrey Homestead, Western Australia, Australia, Latitude -21.63 S., Longitude 117.60 E.

Diagnosis: *Mannixsaurus formosa matthingleyi sp. nov.* has until now been treated as the northernmost population of *M. formosa* (Fry, 1914), but is sufficiently different to warrant recognition as a different taxon. Hence it is herein described as a new subspecies.

M. formosa matthingleyi sp. nov. from the Pilbara in Western Australia is readily separated from *M. formosa formosa* from further south by its pale dorsal spots, versus well defined in *M. formosa*. In *M. formosa matthingleyi sp. nov.* these dorsal spots are also less numerous than in the nominate form.

M. formosa matthingleyi sp. nov. also differ from the nominate form by their greater average size (SVL 84-107, mean 100.6), more numerous scale rows (30), more numerous lamellae under the fourth toe (21-23, mean 22.0), more numerous supraciliaries (7 or 8, mean 7.2) with first invariably largest and more numerous ear lobules (3-6, mean 4.6) (derived from Storr, 1978).

M. formosa (both subspecies) are readily separated from *Silvascincus richardi* by the absence of black pigment and presence of broad pale laterodorsal stripe. *M. formosa* (both subspecies) is distinguishable from *S. douglasi* (Glauert, 1956) by its spotted back, lesser (average) size and more numerous upper labials, midbody scale rows and subdigital lamellae. *M. formosa* (all subspecies) is distinguishable from both *S. richardi*, *C. napoleonis* and *C. rosswellingtoni sp. nov.* by the presence of smooth or at most striated dorsal scales, versus strongly keeled in the other three species.

Distribution: Pilbara region of Western Australia.

Etymology: Named in honour of Matt Hingley, originally of Melbourne, Australia and recently of the Gold Coast in Queensland, Australia in recognition of his contributions to herpetology.

SILVASCINCUS RICHARDI ADRIANPAPALUCAI SUBSP. NOV.

Holotype: A preserved specimen in the South Australian Museum in Adelaide, South Australia, Australia, specimen number: R56696, collected at 9.7km SSE of the Ketchalby Rockhole, South Australia, Australia, Latitude -32.62 S., Longitude 135.04 E. The South Australian Museum in Adelaide, South Australia, Australia is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen in the South Australian Museum in Adelaide, South Australia, Australia, specimen number: R28383 collected from 38 km north-east of Minnipa, South Australia, Australia, Latitude -32.67 S., Longitude 135.50 E.

Diagnosis: Until now *Silvascincus richardi adrianpapalucai subsp. nov.* has simply been treated as the Eastern population of *S. richardi* (Peters, 1869).

Nominate *S. richardi richardi* is now restricted to Western Australia from the Russell Range and west of there, but not including regions nearest the low-lying coastal strip of the south-west coast of Western Australia.

Silvascincus richardi adrianpapalucai subsp. nov. is found from the coastal region just west of the Western Australian and South Australian border (in the vicinity of Eucla), along the coast to the northern parts of the Eyre Peninsula in South Australia.

While *S. richardi adrianpapalucai subsp. nov.* is similar in most respects to nominate *S. richardi richardi*, *S. richardi adrianpapalucai subsp. nov.* is readily separated from *S. richardi richardi* by a strong

preponderance of dark greyish black scales over most of the dorsal surface of the body, versus few or any such scales in *S. richardi richardi*. This gives the lizard an overall darker appearance. In *S. richardi adrianpapalucai subsp. nov.* the black zone running along the flanks from behind the eye, past the front leg and posterior along the body goes obviously more than half the length of the body (as measured between each set of limbs), versus usually less than half way in *S. richardi richardi*.

S. richardi adrianpapalucai subsp. nov. has obvious blackish grey markings usually in the form of one or more irregular crossbands on the upper forelimbs, versus no such markings in *S. richardi richardi*.

At the interface of the lower flanks dark and light zone in *S. richardi adrianpapalucai subsp. nov.* the black scales break up over the white scales to give a strongly flecked appearance. In *S. richardi richardi* the demarcation from black to white is clean along this line.

Silvoscincus richardi (Peters, 1869) (both subspecies) is readily separated from *Contundo napoleonis* (Gray, 1839) and *C. rosswellingtoni sp. nov.* by the absence of a pale dorso-lateral stripe or zone, versus the presence of one in *Contundo napoleonis* (Gray, 1839) and *C. rosswellingtoni sp. nov.*

See for example the relevant images on page 291 of Wilson and Swan (2017). These are images of typical *C. napoleonis* and *S. richardi* (as defined in this paper and labelled with the same species names).

Distribution: *Silvoscincus richardi adrianpapalucai subsp. nov.* is found from the coastal region just west of the Western Australian and South Australian border, along the coast to the northern parts of the Eyre Peninsula in South Australia.

Etymology: Named in honour of Adrian Papaluca of The Templestowe Family Chiro, Melbourne, Australia, who has kept countless people in good health and able to work, including several members of the Snakebusters, wildlife conservation team, who have been able to continue their critically important conservation and education work to the best of their physical abilities.

In the case of myself, I was unlawfully assaulted by a corrupt thug policeman named Richard George Valentine in 1990 and several of his police officer mates, after I complained to the Victoria Police Internal Investigations division (IID, or B11).

The attack occurred after he stalked and ambushed me at gunpoint, with fellow officer Craig Sharkie and took me to the nearby Kew Police station, where I was stripped naked and bashed.

This attack occurred as a direct result of myself giving evidence about other police green-lighting criminal attacks on Melbourne taxi drivers by thieves operating with corrupt police protection.

The relevant police officer, Ross Allen Bingley, then unlawfully got his friends Valentine and Sharkie to attack me and then fabricate a series of criminal charges against me.

Known as a "hamburger with the lot", the charges included assault police, resist arrest and abusive language to police.

These succeeded in the first instance in the magistrates court, but were thrown out at the County Court, when a bunch of police "rent-a-witnesses" were unable to lie straight and had changed their stories between the two courts.

The County Court Judge Gordon Lewis also found that the police were in fact guilty of an unlawful assault and an unlawful arrest of myself, but the police have refused to pay a cent in compensation, even though their own law court found against them.

It turned out that the "rent-a-witnesses" were criminals picked up by police for various offences, including molesting young children, who were then offered a green light to continue to re-offend in return for giving false evidence in court cases such as the one I was in.

Valentine, remained a serving Victorian Police force member as of at least 2005 and was better known for green-lighting criminal activities of law-breakers, including notorious paedophile Brett David Winduss of Kew, whom he personally green-lighted to commit heinous crimes. Winduss later attacked the wrong young girl and was subsequently jailed as the victim was a VIP's daughter and even Valentine couldn't save him.

The back injuries to myself caused by the unlawful police assault (confirmed as an unlawful police assault by the courts two years after the attack) are permanent, cause extreme pain and can never be cured.

Further details about the corrupt police officer, Richard George Valentine, police protection of paedophiles, including Winduss and

others and the unlawful assault at Kew and vindication of myself in the courts can be found in Hoser (1994).

Notwithstanding this severe back injury, for which I have never been compensated, Adrian Papaluca has done an amazing job of trying to mitigate the permanent and ongoing pain and suffering.

FLAMOSCINCUS KINTOREI CROSSI SUBSP. NOV.

Holotype: A preserved specimen at the Northern Territory Museum, Darwin, Northern Territory (NT), Australia, specimen number: R32743, collected from Ayers Rock, NT, Australia, Latitude -25.03 S., Longitude 131.02 E.

The Northern Territory Museum, Darwin, NT, Australia, is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Northern Territory Museum, Darwin, NT, Australia, specimen number: R00402, collected from Angas Downs, NT, Australia, Latitude -25.05 S., Longitude 132.28 E.

Diagnosis: *Flamoscincus kintorei crossi subsp. nov.* and *F. kintorei crossmani subsp. nov.* are readily separated from all other *Flamoscincus kintorei* (Stirling and Zeitz, 1893) by colouration.

F. kintorei crossi subsp. nov. is characterised by a distinctive yellowish belly, the yellow extending onto the lower flanks near the forelimbs and to a lesser extent at the hindlimbs and an absence of an indistinct but noticeable mottling pattern on the mid flanks. In *F. kintorei crossi subsp. nov.* there is either a slight mottling on the far lower flanks of the forebody or none at all. By contrast *F. kintorei* of all other subspecies has a whitish belly and a noticeable indistinct mottling of light (whitish) and coloured scales on the mid flanks and also lower flanks.

Specimens from inland Western Australia (of the type form of *F. kintorei* and "*Egernia dahlia* Boulenger, 1896" from further west, which is synonymous with it) are readily separated from *F. kintorei crossi subsp. nov.* by the presence of noticeable indistinct mottling of light (whitish) and coloured scales on the mid flanks and also the paler whitish belly. They also have strongly whitish as opposed to yellowish lower labials.

Like *F. kintorei crossi subsp. nov.* nominate *F. kintorei kintorei* is obviously reddish in colour on all the upper body.

The subspecies *Flamoscincus kintorei crossmani subsp. nov.* is readily separated from all other *F. kintorei* by the obvious presence of light bluish, whitish grey on the flanks including on the head behind and beneath the eye, not seen in the other subspecies. It also has a noticeable indistinct mottling of light (whitish) and coloured scales on the mid flanks.

The dorsal surface of *Flamoscincus kintorei crossmani subsp. nov.* is also greyish brown as opposed to red or brick-red as seen in the other two subspecies.

All but very aged specimens of *F. kintorei crossmani subsp. nov.* have a distinctive configuration of dorsal scales that gives them an appearance of having semi-distinct dorsolateral stripes running down the body. This is caused by alternating rows of scales being darker in colouration.

F. kintorei crossi subsp. nov. in life is depicted on page 512 of Brown (2014), second photo from top on right hand side.

F. kintorei crossmani subsp. nov. in life is depicted at the top of page 638 of Cogger (2014) and plate 12 (second from top on left) in Storr, Smith and Johnstone (1981).

Nominate *F. kintorei* in life is depicted on page 512 of Brown (2014), third photo from the top of the page.

The genetic distinctiveness of the relevant subspecies as defined herein was shown by Dennison *et al.* (2015), and so I have no hesitation in naming the relevant geographically disjunct forms in order to give them taxonomic recognition and to allow proper conservation measures for each population to be planned and executed.

Dennison *et al.* (2015) found that the Uluru population, herein described as *F. kintorei crossi subsp. nov.* diverged from the other populations "between 350 kya and 1.31 million years ago."

They also wrote: "Uluru in particular should be considered separately for management, and this distinctiveness should be recognised if intervention such as translocation or captive breeding is to be undertaken."

Of course this taxon can only be "considered separately for management" if it is properly identified and named, which is a compelling reason for this scientific description.

Distribution: *F. kintorei crossi* subsp. nov. appears to be restricted to the Uluru region of central Australia and similar sandy habitat to the east.

Etymology: Named in honour of the inspirational Graham Cross, of Park Orchards, Victoria, Australia, in recognition for his services to women's sports and training athletes in general, in particular in his role as coach for various sporting teams.

FLAMOSCINCUS KINTOREI CROSSMANI SUBSP. NOV.

Holotype: A preserved specimen at the Northern Territory Museum, Darwin, Northern Territory (NT), Australia, specimen number: R32751, collected from the Tanami Desert in the NT, Australia, Latitude -20.87 S., Longitude 130.58 E.

The Northern Territory Museum, Darwin, NT, Australia, is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Northern Territory Museum, Darwin, NT, Australia, specimen number: R32772, collected from the Tanami Desert in the NT, Australia, Lat. -20.58 S., Long. 131.18 E.

Diagnosis: *Flamoscincus kintorei crossmani* subsp. nov. and *F. kintorei crossi* subsp. nov. are readily separated from all other *Flamoscincus kintorei* (Stirling and Zeitz, 1893) (the nominate form from Western Australia) by colouration.

F. kintorei crossi subsp. nov. is characterised by a distinctive yellowish belly, the yellow extending onto the lower flanks near the forelimbs and to a lesser extent at the hindlimbs and an absence of an indistinct but noticeable mottling pattern on the mid flanks. In *F. kintorei crossi* subsp. nov. there is either a slight mottling on the far lower flanks of the forebody or none at all. By contrast *F. kintorei* of all other subspecies has a whitish belly, and a noticeable indistinct mottling of light (whitish) and coloured scales on the mid flanks and also lower flanks.

Specimens from inland Western Australia (of the type form of *F. kintorei* and "*Egernia dahlii* Boulenger, 1896" which is synonymous with it) are readily separated from *F. kintorei crossi* subsp. nov. by the presence of noticeable indistinct mottling of light (whitish) and coloured scales on the mid flanks and also the paler whitish belly. They also have strongly whitish instead of yellowish lower labials.

Like *F. kintorei crossi* subsp. nov., nominate *F. kintorei kintorei* is obviously reddish in colour on all the upper body.

The subspecies *Flamoscincus kintorei crossmani* subsp. nov. is readily separated from all other *F. kintorei* by the obvious presence of light bluish, whitish grey on the flanks including on the head behind and beneath the eye, not seen in the other subspecies. It also has a noticeable indistinct mottling of light (whitish) and coloured scales on the mid flanks and lower flanks.

The dorsal surface of *F. kintorei crossmani* subsp. nov. is also greyish brown as opposed to red or brick-red as seen in the other two subspecies.

All but very aged specimens of *F. kintorei crossmani* subsp. nov. have a distinctive configuration of dorsal scales that gives them an appearance of having semi-distinct dorsolateral stripes running down the body. This is caused by alternating rows of scales being darker in colouration.

F. kintorei crossi subsp. nov. in life is depicted on page 512 of Brown (2014), second photo from top on right hand side.

F. kintorei crossmani subsp. nov. in life is depicted at the top of page 638 of Cogger (2014) and plate 12 (second from top on left) in Storr, Smith and Johnstone (1981).

Nominate *F. kintorei* in life is depicted on page 512 of Brown (2014), third photo from the top of the page.

The genetic distinctiveness of the relevant subspecies as defined herein was shown by Dennison *et al.* (2015), and so I have no hesitation in naming the relevant geographically disjunct forms in order to give them taxonomic recognition.

Dennison *et al.* (2015) found that the Uluru population, herein described as *F. kintorei crossi* subsp. nov. diverged from the other populations "between 350 kya and 1.31 million years ago."

They also wrote: "Uluru in particular should be considered separately for management, and this distinctiveness should be recognised if intervention such as translocation or captive breeding is to be undertaken."

Recognition of one significant group and not another is inconsistent and so I had no hesitation in also recognizing the morphologically distinct Tanami Desert population as a separate species-level taxon,

described herein as a subspecies, due to a mitochondrial DNA divergence of under 2 per cent Dennison *et al.* (2015).

Distribution: *F. kintorei crossmani* subsp. nov. appears to be restricted to the Tanami Desert region of the Northern Territory, Australia.

Etymology: Named in honour of Bradley Crossman, formerly of Sydney, NSW, Australia, and after that Proserpine in Queensland, Australia in recognition for his services to herpetology and wildlife conservation in general, including through his work as a government licensed snake controller (relocations) in Queensland.

SUMMARY

Numerous people have assisted in this and associated research projects. Due to harassment of our co-workers by Wolfgang Wüster, his gang of law-breaking thieves and associates, they are not routinely cited and named in this and most other papers I have published in recent years. However their assistance's are greatly appreciated.

In summary this paper has divided *Egernia* Gray, 1838 as widely known into appropriate genera, using available names and erecting new genus names. These are (in no particular order), *Egernia*; *Silubosaurus*; *Liopholis*; *Bellatorias*; *Flamoscincus*; *Hortonia*; *Silvascincus*; *Contundo*; *Tropidolopisma*; *Lissolepis*; *Storrisaurus*; *Woolfcincus*; *Piersonsaurus*; *Mannixsaurus*. Four new species and several subspecies have also been formally named for the first time. There have been no conflicts of interest in terms of the preparation of this paper or conclusions made within.

When appropriate wildlife departments have issued to me relevant scientific, collection or other permits in all mainland Australian states and territories over some decades.

In total this has been well over 100 separate permits and authorities spanning over 40 years and to get these permits and authorities has created enough paperwork to do significant damage to the relevant ecosystems from where the paper was sourced.

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POTENTIAL CONFLICT OF INTEREST: There is none.

The lizard genus *Bassiana* (Squamata, Scincidae) contains three species that occur across a wide area of southern Australia (including Tasmania), rendering them ideally-suited to studies on the impact of past climatic fluctuations. Although mainland Australia and Tasmania currently are separated by Bass Strait (average depth of 60 m: [20]), variations in sea level created land bridges (and thus, opportunities for terrestrial dispersal of lizards) several times over the last 10 Myr. In summary, lizards of the genus *Bassiana* have evolved in southern Australia over a period of at least 10 million years (interspecific divergences), and most of the major intraspecific phylogenetic divergences among this lineage occurred at least 5.7 million years ago to 1.7 million years ago.