Australasian Journal of Herpetology 32:3-25.
Published 1 August 2016.

ISSN 1836-5698 (Print)
ISSN 1836-5779 (Online)

Carphodactylidae reviewed: Four new genera, four new subgenera, nine new species and four new subspecies within the Australian gecko family (Squamata: Sauria).

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Received 4 May 2016 Accepted 20 June 2016, Published 1 August 2016.

ABSTRACT

Numerous studies and reclassifications of the Australian gecko family Carphodactylidae have been published in the previous three decades. These have resulted in the publication of a significant body of data, leading to the recognition of new genera and species.

Molecular studies have indicated further unnamed groups at both generic and species levels.

These taxa are all also readily identifiable on the basis of morphology.

The obvious unnamed taxa have therefore been formally described and named according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al*. 1999).

The genus *Saltuarius* Couper, Covacevich and Moritz, 1993 is divided along obvious phylogenetic and morphological lines into two, the new genus being named *Shireengecko gen. nov.*. The two genera are both split into two subgenera.

Phyllurus Schinz, 1822 is split four ways with the three new genera being *Oxygecko gen. nov.*, *Couperus gen. nov.* and *Teesgecko gen. nov*. respectively.

Two divergent species groups of Knob-tailed Gecko *Nephrurus* Günther, 1876 *sensu lato* are formally named herein as subgenera, as *Quazinephrurus subgen. nov.* and *Paranephrurus subgen. nov.*.

Nine new species are also formally named.

These are two within the genus *Saltuarius sensu stricto* as defined in this paper; one within *Uvidicolus* Oliver and Bauer, 2011; one within *Carphodactylus* Günther, 1897; one within *Nephrurus sensu stricto* as defined in this paper; two smooth knob tailed geckos (*Quazinephrurus subgen. nov.*) and two species of Thick-tailed gecko *Underwoodisaurus* Wermuth, 1965. There are also four subspecies formally named.

The first ever key to the six species of *Underwoodisaurus* as defined herein is provided.

Carphodactylidae are also divided into four obvious tribes, with a further two subtribes identified and named.

Keywords: Taxonomy; lizards; gecko; nomenclature; Australia; Queensland; Cape York; Granite Belt; Wet Tropics; New South Wales; South Australia; Victoria; Western Australia; Northern Territory; Carphodactylidae; Carphodactylini; knob-tailed gecko; leaf-tailed gecko; thick-tailed gecko; *Carphodactylus*; *Nephrurus*; *Orraya*; *Phyllurus*; *Saltuarius*; *Uvidicolus*; *Underwoodisaurus*; new genus; *Shireengecko*; *Oxygecko*; *Couperus*; *Teesgecko*; new subgenus; *Quazinephrurus*; *Paranephrurus*; *Quazisaltuarius*; *Quazishireengecko*; new species; *hoserae*; *adelynae*; *jackyae*; *covacevichae*; *blacki*; *coreyrentoni*; *ianrentoni*; *mensforthi*; *perthensis*; new subspecies; *martinekae*; *bulliardi*; *kimberleyae*; *saxacola*; new tribe; Carphodactylini; Shireengeckiini; Nephruriini; Orrayini; new subtribe; Uvidicolina; Oxygeckoina; Nephruriina; Shireengeckiina.

INTRODUCTION

The Leaf-tailed, Thick-tailed and Knob tailed geckos, within the family Carphodactylidae have long been of interest to reptile hobbyists around the world. In spite of a government ban on exports of reptiles from Australia since the late 1960's and the fact that the family is endemic to continental Australia, neither fact have stopped large numbers of specimens being illegally exported from Australia to Europe and the USA, where specimens have been bred in quantities ever since (Hoser, 1993, 1996). While species have been described at a steady rate over the past two centuries, a greater number have been formally named in the past two decades than at any similar time prior (9 out of a total of about 33 recognized species).

The basis of this has been a number of significant molecular studies based on specimens either found in newly collected locations or taken from previously well-known, but believed to be

widespread species.

These studies have revealed deep divergence between morphologically similar lizards, which have therefore had to be reclassified either as new species, or even as new genera.

The materials, methods and results of this paper are a review of the available published data from various recent studies, combined with inspection of live specimens of potentially unnamed taxa to ascertain whether or not they are distinct at either the species or genus level.

When found to be worthy of taxonomic recognition they have been formally described herein.

The same applies at higher levels, such as genus and tribe.

The most noteworthy recently published studies in terms of the taxonomy of the relevant species have been Couper, Covacevich and Moritz (2000) and Oliver and Bauer (2011), both of which resulted in new genera being formally named. Couper, Covacevich and Moritz (2000) and other papers by these authors and associates have resulted in a number of new species also being named as seen in the papers of Couper, Covacevich and Moritz (2008a) or Doughty and Oliver (2011).

Of relevance to the taxonomic judgements made herein is that the genera named by the relevant authors were the most divergent unnamed lineages identified in each paper. However both papers identified other potentially unnamed lineages of nearly as divergent antiquity and even went so far as to specify divergence dates.

Although it is self-evident from the papers, that in these cases the authors did not view these other lineages as warranting recognition as subgenera, it is my considered view that they have made what are in hindsight errors of judgement.

The divergences indicated in terms of the potential generic groups not named were according to Couper, Covacevich and Moritz (2008a) in the order of 31-38 MYA (at page 263).

I view that as more than sufficient divergence as to warrant recognition of each as separate genera.

Furthermore the lumping of divergent species groups in a single genus for species with divergences in excess of 30 million years is as of 2016, almost unheard of in herpetology.

By way of contrast, some Australian elapid species with divergences of less than 10 MYA are placed in separate genera (e.g. *Notechis* and *Austrelaps*).

On the basis of the following: 1/ These divergences are in excess of 30 million years, 2/ The fact that each of the relevant species groups are geographically separated by well known biogeographical barriers (drier and/or flatter zones) and 3/ The species themselves are morphologically distinct from one another, I have absolutely no hesitation for erecting three new genera for three unnamed species groups of Leaf-tailed Geckos.

Saltuarius Couper, Covacevich and Moritz, 1993 is divided, leaving the north Queensland lizards until now treated as the single species *S. cornutus* Ogilby, 1892 and the morphologically similar species group known until now as *S. salebrosus* (Covacevich, 1975) within the genus.

Each species is divided into two in this paper.

The remainder of the genus as originally defined, being those other species known from southern Queensland are placed in the new genus *Shireengecko gen. nov.*.

Each genus is also subdivided into two subgenera, *Quazisaltuarius subgen. nov.* and *Quazishireengecko subgen. nov.* for species groups based on morphological differences, geographical differences and molecular divergences as outlined by Couper, Covacevich and Moritz (2000).

Phyllurus Schinz, 1822, type species *P. platurus* Shaw, 1790 from the Sydney area in NSW is also divided. The north Queensland animals distributed around Townsville are placed in the new genus, *Oxygecko gen. nov.*, those from around the Mackay/Proserpine region are placed in the genus *Couperus gen. nov.* and those from the upper Sunshine Coast/Gladstone Region are placed in the genus *Teesgecko gen. nov.*.

Within the genus *Nephrurus* Günther, 1876 as defined by Oliver and Bauer (2011), these authors identified three main groups, each easily divided on the basis of phylogeny and morphology (see their Fig. 1). These were two groups of so-called Spiny Knob Tailed Geckos and additionally the so-called smooth ones. They found they diverged from one another somewhere between 9.7-19.7 MYA (at page 669).

Such divergences are certainly worthy of taxonomic recognition at the generic level.

While 19.7 MYA as a divergence time would certainly qualify for full genus-level recognition, taxonomic lumpers may baulk at recognising a species group with a marginally less than 10 MYA divergence as a full genus.

Therefore I take the most conservative position and formally name the two unnamed clades as subgenera.

The so-called Smooth Knob-tailed Geckos are formally named *Quazinephrurus subgen. nov.* and the clade including the species *N. wheeleri* and *N. cinctus*, are hereby placed in the subgenus *Paranephrurus subgen. nov.*.

At the species level, the molecular phylogenies of both Couper, Covacevich and Moritz (2000) and Oliver and Bauer (2011), indicated species-level divisions worthy of taxonomic recognition. It would be reckless to divide species solely on the basis of molecular results, but such do give valuable pointers as to where to look for further evidence.

As already inferred in this paper, if and when they corroborate morphological evidence, formal taxonomic recognition of entities is proper and done.

In the case of the relevant species, the published phylogenies of Couper, Covacevich and Moritz (2000) and Oliver and Bauer (2011) did indicate several putative species worthy of recognition and all newly named ones can be identified in these phylogenies.

Inspection of large numbers of live specimens of all relevant taxa have led me to make the following decisions.

Two new species are formally named within the genera *Uvidicolus* Oliver and Bauer, 2011 and *Carphodactylus* Günther, 1897, both of which had until now been treated as being monotypic.

In each case, proximate, but allopatric populations of the species (as recognized to date) were shown to be divergent by molecular analysis and also when specimens themselves were examined.

As a result the species have been formally named herein according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999). These are *U. covacevichae sp. nov.* and *C. hoserae sp. nov.*.

The species *Saltuarius cornutus* Ogilby, 1892 has until now been treated by all authors as monotypic. However the molecular results of Couper, Covacevich and Moritz (2000) confirm my long held belief (since the 1970's) that there have been at least two species under this label, separated by a well known biogeographical barrier idenified by many authors including Moritz *et al.* (1993) and sources cited therein. The type form from south and south-west of Cairns in North Queensland remains *S. cornutus*, while the other species is herein named *S. adelynae sp. nov.*.

These two and the recently described species *S. eximius* Hoskin and Couper, 2013 form the entirety of the newly defined subgenus *Saltuarius subgen. nov.* although I note that under the rules of the *International Code of Zoological Nomenclature* (Ride et al. 1999), it should be more correctly reported by subsequent authors (and here) as *Saltuarius* Couper, Covacevich and Moritz, 1993.

I note here that a junior synonym for *S. cornutus*, namely *Phyllurus lichenosus* Günther, 1897 is not available for the newly

named species, as it applies to the taxon *S. cornutus* with an immediately adjacent type locality and not the new species described herein.

Similar applies to the species *S. salebrosus* (Covacevich, 1975), herein divided into two on the basis of obvious morphological differences between two nearby population groups and molecular corroboration by Couper, Covacevich and Moritz (2000).

The new species is called *S.* (*Quazisaltuarius*) *jackyae sp. nov.*.

These two species form the entirety of the subgenus *Quazisaltuarius subgen. nov.*.

All other putatively monotypic genera within the Carphodactylidae as recognized until now are also no longer monotypic as a result of this paper.

Five other new taxa are also named as species. These are one within *Nephrurus sensu stricto* called *Nephrurus blacki sp. nov.*, two Smooth Knob-tailed geckos (*Quazinephrurus subgen. nov.*), called *N. ianrentoni sp. nov.* and *N. coreyrentoni sp. nov.* and two Thick-tailed Geckos *Underwoodisaurus* Wermuth, 1965, called *U. mensforthi sp. nov.* and *U. perthensis sp. nov.*.

One of the species within the *Underwoodisaurus milii* complex, namely *U. mensforthi sp. nov.* is further subdivided with a new subspecies being formally named as well. An unnamed subspecies of *N. levis* is also herein formally defined and named for the first time as *N. levis bulliardi sp. nov.*, this being the form from the region immediately north of the Nullabor Plain in western South Australia.

A morphologically distinct population of *N. sheai* is formally named as a subspecies, called *N. sheai kimberleyae subsp. nov.*, as is a population of *N. asper*, from far west Queensland, found in the southern Selwyn range, which is apparently isolated from the main population by the upper reaches of the Diamantina River system. This taxon is called *N. asper saxacola subsp. nov.*.

In terms of the taxonomic decisions made to recognize each entity, these are generally self-evident and need no elaboration beyond what I have already said.

However in terms of some, I make the following additional and relevant comments.

A unique population of putative *N. asper* from far north Queensland was identified by Couper and Gregson (1994). In that paper they decided the taxon was merely a colour morph of *N. asper*. However the later results of Oliver and Bauer (2011) at page 667 showed sufficient divergence to warrant recognition of these lizards as a full species. I therefore take the obvious position and formally name these animals as a species similar to *N. asper*.

As aluded to already, the populations of putative *N. sheai* Couper, 1994 from the Kimberley division of Western Australia are morphologically different from the type form from Kakadu, geographically separated and warrant taxonomic recognition. In the absence of molecular data for the comparative groups, I herein describe the unnamed form as a new subspecies, *N. sheai kimberleyae subsp. nov.*.

Oliver and Bauer (2011), wrote: “The uncorrected genetic divergence between two allopatric

populations of *N. stellatus* across southern Australia (either side of the Nullarbor Plain) was also comparatively low (5.3%).” In the case of many other reptiles, far lower divergences have resulted in new species being erected (e.g. Harvey *et al.* 2000).

Again taking the most sensible position, I herein name the unnamed morphologically distinct form of putative *N. stellatus* Storr, 1968 as a new species.

Similar applies to the far west Australian population of putative *N. laevissimus* Mertens, 1958 which shows similar divergence and morphological differences from nominate *N. laevissimus* as does *N. deleani* Harvey, 1983.

The taxonomy of the *Underwoodisaurus milii* (Bory de Saint-Vincent, 1823) species complex has been one of lumping by most authors.

Ahead of his time, Boulenger (1913) described two divergent lineages as separate species. He did this by naming the second of the pair as *Gymnodactylus asper* Boulenger, 1913, with direct reference to the original species that at the time was also placed in the genus *Gymnodactylus* Spix, 1825, by stating clearly why he thought his new taxon was a different species.

All authors beyond 1913 have synonymised the two to treat all *U. milii* as a single widespread species.

Wells and Wellington (1983) made the next step in dividing *E. milii sensu lato* by describing the obviously different east coast form from the Sandstone region around Sydney, New South Wales as *U. husbandi* using a Hunter Valley animal as a holotype.

To their credit in 1985, Wells and Wellington (1985) went further and attempted to correct the taxonomy of the genus *Underwoodisaurus* in a meaningful way and resurrected the species *Underwoodisaurus asper* (Boulenger, 1913) while also recognizing the species they named two years prior. It is significant that the two men had considerable field experience across Australia with the relevant species and while their paper was brief in words, it was sufficient to indicate what they thought the real taxonomy was and why. They also directed readers to relevant images of the relevant forms in widely available published literature and on this basis recognition of the three morphotypes should have been settled.

Notwithstanding that this was the only serious attempt to resolve the taxonomy of *U. milii sensu lato*, the works of the pair have been generally boycotted and ignored by many herpetologists since (in part because of the improper tactics of a vocal few to influence the actions of a less concerned majority) and so taxonomy in Australia is in parts behind the times in terms of what the obvious evidence shows.

However science does eventually get to the truth, even if at the rate of one funeral at a time.

Although I probably shouldn’t say this in print, I also note that as of 2016 both Wells and Wellington are getting older and when they eventually do pass away, there will less personal animosity against the pair by younger herpetologists.

This should mean that their publications may be treated more objectively by later herpetologists and their sensible and obvious taxonomic judgements widely used.

Doughty and Oliver (2011) described as a new species, *Underwoodisaurus seorsus* as member of the *U. milii* complex from the Pilbara region of Western Australia, but significantly did not do a thorough review of the complex, as this would have necessitated the resurrection of the (until now) ignored Wells and Wellington taxon *U. husbandi* as a valid species-level taxon.

Doughty and Oliver form part of a strongly anti-Wells and Wellington group known as the Wüster gang (se Hoser 2015a-f).

Cogger (2014) taking a conservative position and not wanting to upset friends of his who may have hostility to Wells and Wellington, only recognized *U. milii* and *U. seorsus.* However in the early sections of his book, Cogger notes that much of what is within its pages is woefully out of date. He also refutes and discredits the central claims and aims of those who attack Wells and Wellington (and also myself) via a widely distributed blog rant known as Kaiser *et al.* (2013).

These individuals unreasonably attacking Wells, Wellington and their publications have been part of the group of people who seek to enact and enforce and illegal defacto ban on use of any Wells and Wellington taxonomy and nomenclature if they possibly can and with a view to eventually illegally seizing “name authority” for the very same taxa, even though such is expressly forbidden by the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

However in the face of all the above, the molecular results of

Oliver and Bauer (2011) also show deep species level phylogenetic divisions within the *U. milii* complex. The absence of East Australian *U. milii* from the phylogeny is conspicuous, but with the use of specimens from most other parts of the range, their phylogeny, provides strong molecular evidence for the recognition of the three species identified by Wells and Wellington (1985), these being *U. asper*, *U. husbandi* and *U. milii* and with these three being the minimum possible number of species in the species complex (and excluding the other later named taxon *Underwoodisaurus seorsus*) and that these are also the appropriate available names to be used.

Of note is that if one factors in the East Coast *U. milii* as a separate taxon to the others, based solely on significant morphological divergence, the molecular results of Oliver and Bauer (2011) indicates that there are at least five separate lineages requiring taxonomic recognition, in addition to the species formally described by Doughty and Oliver (2011), giving a total count for the currently (treated by most as) monotypic genus *Underwoodisaurus* of 6 full species.

Noting that the relevant populations can easily be distinguished on a morphological basis, I therefore name as new species within the *U. milii* complex, the currently unnamed divergent lineages from southern Australia (Victoria, southern inland NSW to the SA/WA border area) and that form from south-west Western Australia near Perth, while recognizing the other named forms (as listed by Wells and Wellington 1985 and that described by Doughty and Oliver 2011) as full species at the same taxonomic level.

This overdue revision of the taxonomy of the *U. milii* group allows scientists to better quantify what taxa they may be studying by referring them to the appropriate species, especially noting that many potential differences between populations are not known at this stage.

Within the main southern Australian group now called *U. mensforthi sp. nov.*, a subspecies *U. mensforthi martinekae subsp. nov.* is also formally named and defined.

In order to maintain order within the Carphodactylidae family group and to properly deal with the expanded number of genera and species within genera, accumulated over recent decades, I have also formally named and defined four appropriate tribes, two divided further, each into two subtribes incorporating correct placements of all known taxa in the family.

The final result in terms of the taxonomy of the family Carphodactylidae outside of the changes indicated herein in terms of tribes, subtribes, genera, subgenera, species and subspecies is otherwise in accordance with that published by Cogger (2014), save for the additional recognition of the species formally described as "*Saltuarius eximius* Hoskin and Couper, 2013", which was missed by Cogger (2014), presumably because the description's publication date superseded the manuscript cut-off date for pre-publication of Cogger (2014). That species taxon has herein been retained in the subgenus *Saltuarius* on the basis of the author's statement "12S/cyt-b mtDNA data places *S. eximius sp. nov.* as a divergent (9.1%) sister-species to *S. cornutus*" as well as the morphological similarities between this taxon and *S. cornutus* combined with the geographical proximity of the allopatric species.

The literature that was relied upon in order to form the entirety of the taxonomic and nomenclatural judgements within (in addition to the obvious morphological evidence) include: Akeret (2013), Annable (1998), Anthony (1998), Arth and Baus (2012), Barrett (1950), Barts and Hulbert (2004), Bauer (1990, 1994, 1999, 2013), Bauer and Henle (1994), Bory de Saint-Vincent (1825), Boulenger (1885, 1886, 1913), Broom (1898), Brygoo (1991), Cogger (2014), Cogger *et al.* (2013), Couper (1994), Couper and Gregson (1994), Couper and Hoskin (2013), Couper, Covacevich and Moritz (1993, 1997, 2000, 2008a, 2008b), Covacevich (1971, 1975), Daza and Bauer (2012), Delean and Harvey (1983), de Vis (1886), Dizier and Wret (2010), Doughty and Oliver (2011), Doughty and Shine (1995), Driscoll *et al.* (2012), Duméril and Bibron (1836), Duscha (2007), Even (2005), Fallend (2007), Ferguson *et al.* (2015), Fitzinger (1826), Ford (1963), Galliford (1981), Garman (1901), Goldfuss (1820), Gray (1825, 1845, 1867), Günther (1876, 1897), Harvey (1983), Hoser (1989), Hoskin and Couper (2013), Hoskin *et al.* (2003), How *et al.* (1991), Ijzendoorn (2007), Kay *et al.* (2013), Kinghorn (1931), Kluge (1991, 1993), LaCépède (1804), Langner (2005), Laube (2001, 2002, 2006, 2007), Laube and Langner (2007a, 2007b, 2013), Laube and Porter (2004), LiVigni (2013), Longman (1918), Love (2010, 2012, 2014), Loveridge (1932, 1934, 1947), Merrem (1820), Mertens (1958, 1967), Mo (2014, 2015), Moritz *et al.* (1993), Ogilby (1892), Oliver and Bauer (2011), Pianka (1969), Pianka and Vitt (2003), Porter (2002), Read (1998), Ride *et al.* (1999), Rochebrune (1884), Rösler (1985, 1995, 2000), Rudge (2004), Schenk (2009), Schinz (1822), Schneider (1797), Schönecker (2007), Shaw and Nodder (1791), Schneider (1797), Shea (2002), Shea and Sadlier (1999), Spix (1825), Storr (1963, 1968), Storr *et al.* (1990), Swainson (1839), Swanson (1976), Torr (1998), Underwood (1954), Wells and Wellington (1983, 1985), Wermuth (1965), Werner (2008), White (1790), Wilson and Knowles (1988), Wilson and Swan (2010), Zietz (1920) and sources cited therein.

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 and on the basis that further delays may in fact put these unnamed taxa at greater risk of extinction.

This comment is made noting the extensive increase in human population in Australia and the general environmental destruction across the continent as documented by Hoser (1991), including low density areas without a large permenant human population. I also note the abysmal environmental record of Australian governments in the past 200 years as detailed by Hoser (1989, 1991, 1993 and 1996).

The order of descriptions is as follows: Tribes, subtribes, genera and subgenera first, followed by the descriptions of species, then subspecies. The correct placement of the latter is shown in the genus level diagnoses in this paper as well as in the listing published with this paper.

TRIBE CARPHODACTYLINI *TRIBE NOV.*

(Terminal taxon: *Carphodactylus laevis* Günther, 1897)

Diagnosis: The following diagnosis for the tribe is also applicable as a diagnosis for the two defined species in the genus *Carphodactylus*, this genus being monotypic for the tribe. They are separated from all other Australian geckos by the following suite of characters:

Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping. Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail ending in a tapered tip and without a terminal knob. Claw between five scales. Body is laterally compressed. Rostral and mental shields are rounded. Labials are much larger than adjacent scales. Postmentals and adjacent gulars are subequal. Digits are long, slender and only moderately compressed distally and without enlarged apical subdigital lamellae, but with a single series of slightly swollen transverse lamellae. Preanal pores are present.

Adults have snout vent length of about 13 cm (adapted from Cogger 2014).

Distribution: North-eastern Queensland, Australia in the general region from Tully to Cooktown, Queensland.

Content: *Carphodactylus* Günther, 1897 (monotypic).

GENUS *CARPHODACTYLUS* GÜNTHER, 1897.

Type species: *Carphodactylus laevis* Günther, 1897.

Diagnosis: See the preceding diagnosis for the tribe Carphodactylini *tribe nov.*.

Distribution: North-eastern Queensland, Australia in the general region from Tully to Cooktown, Queensland.

Content: *Carphodactylus laevis* Günther, 1897 (type species); *C. hoserae sp. nov.*.

TRIBE NEPHRURIINI *TRIBE NOV.*

(Terminal taxon: *Nephrurus asper* Günther, 1876)

Diagnosis: The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus* by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*

Distribution: Most parts of continental Australia.

Content: *Nephrurus* Günther, 1876; *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011.

SUBTRIBE *UVIDICOLINA SUBTRIBE NOV.*

(Terminal taxon: *Gymnodactylus sphyrurus* Ogilby, 1892)

Diagnosis: The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus,* this latter genus being the totality of the subtribe Uvidicolina *subtribe nov.* by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*

Distribution: Confined to the northern slopes and tablelands of New South Wales and adjacent border regions of southern Queensland in Australia.

Content: *Uvidicolus* Oliver and Bauer, 2011 (monotypic).

GENUS *UVIDICOLUS* OLIVER AND BAUER, 2011.

Type species: *Gymnodactylus sphyrurus* Ogilby, 1892.

Diagnosis: The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus,* this latter genus being the totality of the subtribe Uvidicolina *subtribe nov.* by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*

Distribution: Confined to the northern slopes and tablelands of New South Wales and adjacent border regions of southern Queensland in Australia.

Content: *Uvidicolus sphyrurus* (Ogilby, 1892) (type species); *U. covacevichae sp. nov.*

SUBTRIBE NEPHRURIINA *SUBTRIBE NOV.*

(Terminal taxon: *Nephrurus asper* Günther, 1876)

Diagnosis: The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus*, the genus *Uvidicolus* being outside of the Nephruriina *subtribe nov.* by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*
Genera *Nephrurus* and *Underwoodisaurus* constitute the entirety of Nephruriina *subtribe nov.*.

Distribution: Most parts of continental Australia.

Content: *Nephrurus* Günther, 1876; *Underwoodisaurus* Wermuth, 1965.

GENUS *NEPHRURUS* GÜNTHER, 1876.

Type species: *Nephrurus asper* Günther, 1876.

Diagnosis: The genus *Nephrurus* is unique among Australian geckos in that the unregenerated tail ends in a small well-defined and distinctive knob. The species are also characterised by large heads and the short fat tails that end with a distinctive knob on the end. Species of *Nephrurus* are invariably dry habitat adapted, but within this environment, they actively seek out cool and moist microhabitats and die easily if overheated. Rostral and mental shields are rounded. Labials are bigger than adjacent scales. Postmentals are not enlarged. Digits are short, round and without enlarged apical subdigital lamellae. They are covered ventrally by numerous small irregular spinose tubercles. All digits have claws and there are no preanal pores.

Lizards in the nominate subgenus *Nephrurus*, are characterised and separated from the other subgenera by the following characters: Scattered tubercles on the flanks each containing several conical scales and eight or more interorbital scales. The surface texture of these geckos is noticeably rough.

Lizards in the subgenus *Paranephrurus subgen. nov.* are characterised and separated from the other subgenera by the following characters: Scattered tubercles on the flanks each containing a single conical scale, less than eight interorbital scales and four or five broad dark bands running across the body and tail. The surface texture of these geckos is moderately rough.

Diagnosis of species within the third subgenus *Quazinephrurus subgen. nov.* can be made simply by a process of elimination of the others. These are generally known as the “Smooth Knob-tailed Geckos” as opposed to the other subgenera have species that are “Rough” in texture and appearance, although their texture is not completely smooth. They are however extremely smooth when compared to those in the other subgenera.

Alternatively, the species within *Quazinephrurus subgen. nov.* are characterised and separated from the other subgenera by the following characters: Flanks smooth and without tubercles or with scattered tubercles, which if present each contain a single conical scale; fewer than eight interorbital scales; no broad, dark transverse bands; if transverse bands are present, they are

narrow, pale and irregular on a darker ground colour.

The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus*, the genus *Uvidicolus* being outside of the Nephruriina *subtribe nov*. by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*

Genera *Nephrurus* and *Underwoodisaurus* constitute the entirety of Nephruriina *subtribe nov*..

Distribution: Drier parts of continental Australia including the tropics, but not including colder regions in the far south-east.

Content: *Nephrurus* (*Nephrurus*) *asper* Günther, 1876 (type species); *N.* (*Nephrurus*) *amyae* Couper, 1994; *N.* (*Nephrurus*) *blacki sp. nov.*; *N.* (*Paranephrurus*) *cinctus* Storr, 1963; *N.* (*Quazinephrurus*) *coreyrentoni sp. nov.*; *N.* (*Quazinephrurus*) *deleani* Harvey, 1983; *N.* (*Quazinephrurus*) *ianrentoni sp. nov.*; *N.* (*Quazinephrurus*) *laevissimus* Mertens, 1958; *Nephrurus* (*Quazinephrurus*) *levis* De Vis, 1886; *N.* (*Quazinephrurus*) *occidentalis* Storr, 1963; *N.* (*Nephrurus*) *sheai* Couper, 1994; *N.* (*Quazinephrurus*) *stellatus* Storr, 1968; *N.* (*Quazinephrurus*) *vertebralis* Storr, 1963; *Nephrurus* (*Paranephrurus*) *wheeleri* Loveridge, 1932.

SUBGENUS *NEPHRURUS* GÜNTHER, 1876.

Type species: *Nephrurus asper* Günther, 1876.

Diagnosis: Refer to the preceding description for the genus *Nephrurus* Günther, 1876 for the diagnosis of this subgenus as well.

Distribution: Drier parts of continental Australia including the tropics, but not including colder regions in the far south-east.

Content: *Nephrurus* (*Nephrurus*) *asper* Günther, 1876 (type species); *N.* (*Nephrurus*) *amyae* Couper, 1994; *N.* (*Nephrurus*) *blacki sp. nov.*; *N.* (*Nephrurus*) *sheai* Couper, 1994.

SUBGENUS *QUAZINEPHRURUS SUBGEN. NOV.*

Type species: *Nephrurus levis* De Vis, 1886.

Diagnosis: The gecko species within *Quazinephrurus subgen. nov.* are characterised and separated from the other subgenera by the following characters: Flanks smooth and without tubercles or with scattered tubercles, which if present each contain a single conical scale; fewer than eight interorbital scales; no broad, dark transverse bands or if transverse bands are present, they are narrow, pale and irregular on a darker ground colour.

The genus *Nephrurus* is unique among Australian geckos in that the unregenerated tail ends in a small well-defined and distinctive knob. The species are also characterised by large heads and the short fat tails that end with a distinctive knob on the end. Species of *Nephrurus* are invariably dry habitat adapted, but within this environment, they actively seek out cool and moist microhabitats and die easily if overheated. Rostral and mental shields are rounded. Labials are bigger than adjacent scales. Postmentals are not enlarged. Digits are short, round and without enlarged apical subdigital lamellae. They are covered ventrally by numerous small irregular spinose tubercles. All digits have claws and there are no preanal pores.

Lizards in the nominate subgenus *Nephrurus*, are characterised and separated from the other subgenera by the following characters: Scattered tubercles on the flanks each containing several conical scales and eight or more interorbital scales. The surface texture of these geckos is noticeably rough.

Lizards in the subgenus *Paranephrurus subgen. nov.* are characterised and separated from the other subgenera by the following characters: Scattered tubercles on the flanks each containing a single conical scale, less than eight interorbital scales and four or five broad dark bands running across the body and tail. The surface texture of these geckos is moderately rough.

Diagnosis of species within the third subgenus *Quazinephrurus subgen. nov.* can also be made simple by a process of elimination of the others. These are generally known as the "Smooth Knob-tailed Geckos" as opposed to the other subgenera have species that are "Rough" in texture and appearance, although their texture is not completely smooth. They are however extremely smooth when compared to those in the other subgenera.

The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus*, the genus *Uvidicolus* being outside of the Nephruriina *subtribe nov*. by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*

Distribution: Drier parts of continental Australia including the tropics, but not including colder regions in the far south west or south-east.

Etymology: Named "Quazi" as in "nearly" in conjunction with the subgenus it is most similar to, namely "*Nephrurus*".

Content: *Nephrurus* (*Quazinephrurus*) *levis* De Vis, 1886 (type species); *N.* (*Quazinephrurus*) *coreyrentoni sp. nov.*; *N.* (*Quazinephrurus*) *deleani* Harvey, 1983; *N.* (*Quazinephrurus*) *ianrentoni sp. nov.*; *N.* (*Quazinephrurus*) *laevissimus* Mertens, 1958; *N.* (*Quazinephrurus*) *occidentalis* Storr, 1963; *N.* (*Quazinephrurus*) *stellatus* Storr, 1968; *N.* (*Quazinephrurus*) *vertebralis* Storr, 1963.

SUBGENUS *PARANEPHRURUS SUBGEN. NOV.*

Type species: *Nephrurus wheeleri* Loveridge, 1932.

Diagnosis: Lizards in the subgenus *Paranephrurus subgen. nov.* are characterised and separated from the other subgenera by the following characters: Scattered tubercles on the flanks each containing a single conical scale, less than eight interorbital scales and four or five broad dark bands running across the body and tail. The surface texture of these geckos is moderately rough.

Lizards in the nominate subgenus *Nephrurus*, are characterised and separated from the other subgenera by the following characters: Scattered tubercles on the flanks each containing several conical scales and eight or more interorbital scales. The surface texture of these geckos is noticeably rough.

Diagnosis of species within the third subgenus *Quazinephrurus subgen. nov.* can be made simple by a process of elimination of the others. These are generally known as the "Smooth Knob-tailed Geckos" as opposed to the other subgenera have species that are "Rough" in texture and appearance, although their texture is not completely smooth. They are however extremely smooth when compared to those in the other subgenera.

Alternatively, the species within *Quazinephrurus subgen. nov.* are characterised and separated from the other subgenera by the following characters: Flanks smooth and without tubercles or

with scattered tubercles, which if present each contain a single conical scale; fewer than eight interorbital scales; no broad, dark transverse bands; if transverse bands are present, they are narrow, pale and irregular on a darker ground colour.

The genus *Nephrurus* is unique among Australian geckos in that the unregenerated tail ends in a small well-defined and distinctive knob. The species are also characterised by large heads and the short fat tails that end with a distinctive knob on the end. Species of *Nephrurus* are invariably dry habitat adapted, but within this environment, they actively seek out cool and moist microhabitats and die easily if overheated. Rostral and mental shields are rounded. Labials are bigger than adjacent scales. Postmentals are not enlarged. Digits are short, round and without enlarged apical subdigital lamellae. They are covered ventrally by numerous small irregular spinose tubercles. All digits have claws and there are no preanal pores.

The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus*, the genus *Uvidicolus* being outside of the Nephruriina *subtribe nov.* by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*
Genera *Nephrurus* and *Underwoodisaurus* constitute the entirety of Nephruriina *subtribe nov.*.

Distribution: *Paranephrurus subgen. nov.* is confined to the Murchison District and Fortescue River District, entirely within Western Australia.

Etymology: Named “Para” as in “not quite” in conjunction with the subgenus it is most similar to, namely “*Nephrurus*”.

Content: *Nephrurus* (*Paranephrurus*) *wheeleri* Loveridge, 1932 (type species); *N.* (*Paranephrurus*) *cinctus* Storr, 1963.

GENUS *UNDERWOODISAURUS* WERMUTH, 1965.

Type species: *Phyllurus milii* Bory de Saint-Vincent, 1825.

Diagnosis: The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus*, the genus *Uvidicolus* being outside of the Nephruriina *subtribe nov.* and monotypic for the other subtribe by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*
Genera *Nephrurus* and *Underwoodisaurus* constitute the entirety of Nephruriina *subtribe nov.*.

Distribution: Most parts of the southern half of continental Australia, extending north in the far west, centre and far east.

Content: *Underwoodisaurus milii* (Bory de Saint-Vincent, 1825) (type species); *U. asper* (Boulenger, 1913); *U. husbandi* Wells and Wellington (1983); *U. mensforthi sp. nov.*; *U. perthensis sp. nov.*; *U. seorsus* Doughty and Oliver, 2011.

TRIBE ORRAYINI *TRIBE NOV.*

(Terminal taxon: *Saltuarius occultus* Couper, Covacevich and Moritz, 1993)

Diagnosis: The following diagnosis for the tribe is also applicable as a diagnosis for the single defined type species monotypic for the genus *Orraya* Couper, Covacevich, Schneider and Hoskin, 2000, this being the only genus in the tribe. They are separated from all Australian geckos by the following suite of characters:

Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping. Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Digits are long, slender and moderately compressed with three or more rows of lateral scales. The base of each claw between two scales and deeply notched. No enlarged apical subdigital lamellae, but with a single series of slightly swollen transverse lamellae. Postmentals and adjacent gulars subequal. Tail ends in a tapered tip. Three lumbar (rib free) vertebrae, versus 2 in all other Australian leaf-tailed geckos of the tribe Shireengeckiini *tribe nov.*. The (original) tail is broad and flat and about twice as long as broad. Rostral scale contacts the nostril. Preanal pores are usually present in males. Neck is distinctly slender and elongate. Preanal pores are present in males. In common with Shireengeckiini *tribe nov.*. the rostral and mental shields are rounded. Labials are larger than the adjacent scales. Postmentals and adjacent gulars are subequal.

Distribution: McIlwraith Range , Cape York Peninsula, Queensland, Australia.

Content: *Orraya* Couper, Covacevich, Schneider and Hoskin, 2000 (monotypic).

GENUS *ORRAYA* COUPER, COVACEVICH, SCHNEIDER AND HOSKIN, 2000.

Type species: *Saltuarius occulta* Couper, Covacevich and Moritz, 1993.

Diagnosis: See the preceding diagnosis for the tribe Orrayini *tribe nov.*

Distribution: Known only from the McIlwraith Range, Cape York Peninsula, Queensland, Australia.

Content: *Orraya occulta* (Couper, Covacevich and Moritz, 1993) (monotypic).

TRIBE SHIREENGECKIINI *TRIBE NOV.*

(Terminal taxon: *Saltuarius wyperba* Couper, Schneider and Covacevich, 1997)

Diagnosis: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.*.

Distribution: Wetter coastal regions from about Sydney, New South Wales, to far north Queensland, Australia.

Content: *Shireengecko gen. nov.*; *Couperus gen. nov.*; *Oxygecko gen. nov.*; *Phyllurus* Schinz, 1822; *Saltuarius* Couper, Covacevich and Moritz, 1993; *Teesgecko gen. nov.*.

SUBTRIBE OXYGECKOINA *SUBTRIBE NOV.*

(Terminal taxon: *Phyllurus amnicola* Hoskin, Couper, Schneider and Covacevich, 2000)

Diagnosis: *Oxygeckoina subtribe nov.* is separated from the other subtribe Shireengeckiina *subtribe nov.* by the rostral scale

not contacting the nostril (versus in contact with the nostril in Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*) and no preanal pores, (versus usually present in both Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*).

The tribe Shireengeckiini *tribe nov.* is defined as follows: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.*.

Distribution: Hilly coastal areas with rocks, wet forests or both in the general range between Townsville, North Queensland and Sydney, New South Wales. Most species known have very limited distributions and appear to have low mobility.

Content: *Oxygecko gen. nov.*; *Couperus gen. nov.*; *Phyllurus* Schinz, 1822; *Teesgecko gen. nov.*.

GENUS *OXYGECKO GEN. NOV.*

Type species: *Phyllurus amnicola* Hoskin, Couper, Schneider and Covacevich, 2000.

Diagnosis: This genus is separated from all other *Phyllurus sensu lato* (this also including the genera *Phyllurus* Schinz, 1822, *Couperus gen. nov.* and *Teesgecko gen. nov.*) by the following suite of characters, these being one or other of: 1/ The tail is slightly depressed to more or less cylindrical in section along its length and the rostral is only partially divided (*O. gulbaru*), or 2/ The rostral is partially divided by at most a single groove; the tail is moderately to strongly depressed and broadly oval in section anteriorly; the original (but not regrown) tails have distinct narrow white or cream cross-bands (sometimes as incomplete transversely aligned white blotches), at least anteriorly; there is a lateral fold between the axilla and groin, with a series of long curved, spinose tubercles which are surrounded by a rosette of smaller tubercles which are distinctly larger than the adjacent scales; the belly is either white or off-white; 5-6 scales along the upper margin of the rostral scale (O. *amnicola*).

Distribution: The hills in the vicinity of Townsville, North Queensland, Australia, specifically known from Mount Elliott (O. *amnicola*) and the Paluma Range (*O. gulbaru*).

Etymology: Named in honour of the family pet dog, a Great Dane, named Oxyuranus or “Oxy” for short, who over an 8 year period guarded the family home and vulnerable young children from people seeking to undermine our vital conservation work as a result of their own nefarious commercial objectives.

Oxyuranus Kinghorn, 1923 is a genus name for a highly venomous group of elapid snakes.

Content: *Oxygecko amnicola* (Hoskin, Couper, Schneider and Covacevich, 2000) (type species); *O. gulbaru* (Hoskin, Couper and Schneider, 2003).

GENUS *COUPERUS GEN. NOV.*

Type species: *Phyllurus caudiannulatus* Covacevich, 1975.

Diagnosis: The genus *Couperus gen. nov.* is separated from all other *Phyllurus sensu lato* (this also including the genera *Phyllurus* Schinz, 1822, *Oxygecko gen. nov.* and *Teesgecko gen. nov.*) by the following suite of characters: The tail is slightly depressed to more or less cylindrical in section along its length and the rostral is fully divided.

The two species are divided as follows: One or other of: 1/ The lower surfaces of the hindlimbs are covered by uniformly small, granular scales with scattered raised tubercles (*C. caudiannulatus*), or, 2/ The lower surfaces of the hindlimbs are covered by uniformly small, granular scales but without scattered raised tubercles (*C. kabikabi*).

Distribution: Dawes and Many Peaks Ranges, near Monto, South-east Queensland (*C. caudiannulatus*), or Oakview Forest Reserve, near Gympie, South-east Queensland (*C. kabikabi*).

Etymology: Named in honour of Partick Couper, reptile curator at the Queensland Museum, Brisbane, Queensland, Australia in recognition of his work with reptiles spanning some decades.

Content: *Couperus caudiannulatus* (Covacevich, 1975); *C. kabikabi* (Couper, Hamley and Hoskin, 2008).

GENUS *PHYLLURUS* SCHINZ, 1822.

Type species: *Phyllurus novaehollandiae* Schinz, 1822. (A junior synonym for *Lacerta platura* White, 1790)

Diagnosis: This genus, *Phyllurus sensu stricto* (as defined herein) is separated from all other *Phyllurus sensu lato* (this also including the genera *Oxygecko gen. nov.*, *Couperus gen. nov.* and *Teesgecko gen. nov.*) by the following suite of characters: The rostral is partially divided by at most a single groove; the tail is moderately to strongly depressed and broadly oval in section anteriorly; the original and regrown tails are always lacking white cross bands; there is a lateral fold between the axilla and groin, with a few low, rounded tubercles; conical tubercles on the flanks are surrounded by scales which are scarcely or not differentiated from those adjacent to them.

Distribution: Central coast and ranges of New South Wales in association with the Hawkesbury/Nepean Sandstone formations of the Sydney basin.

Content: *Phyllurus platurus* (White ex Shaw, 1790) (monotypic at present).

GENUS *TEESGECKO GEN. NOV.*

Type species: *Phyllurus nepthys* Couper, Covacevich and Moritz, 1993.

Diagnosis: This genus, *Teesgecko gen. nov.* is separated from all other *Phyllurus sensu lato* (this including the genera *Phyllurus* Schinz, 1822, *Oxygecko gen. nov.* and *Couperus gen. nov.*) by the following suite of characters: The tail is moderately to strongly depressed and broadly oval in section anteriorly. the original (but not regrown) tails have distinct narrow white or cream cross-bands (sometimes as incomplete transversely aligned white blotches), at least anteriorly; there is a lateral fold between the axilla and groin, with a series of long curved, spinose tubercles which are surrounded by a rosette of smaller tubercles which are distinctly larger than the adjacent scales and one or other of the following four suites of additional characters: 1/ The belly is noticeably peppered with brown (*T. nepthys*) or 2/ The belly is usually uniformly white or off white and the rostral scale is usually completely divided (*T. championae*), or 3/ The belly is usually uniformly white or off white and the rostral scale is usually only partly divided, being partially divided by two or three grooves, or by a single Y-shaped groove (*T. ossa*), or 4/ The belly is usually uniformly white or off white and the rostral scale is usually only partly divided, being partially divided by at most a single groove and 9-11 scales along the upper margin of the rostral scale (*T. isis*).

Distribution: Hills and mountains in the general region of Proserpine/Mackay, on the coast of central to north-east Queensland, Australia, with most species having a very limited known range.

Etymology: Named in honour of Sydney-based lawyer Alex Tees, from Bondi, New South Wales, Australia in recognition of his significant contributions to wildlife conservation and human rights issues in Australia, including securing the end of the illegal ban imposed by the New South Wales National Parks and Wildlife Service (NPWS) on sales of the book, *Smuggled-2: Wildlife Trafficking, Crime and Corruption in Australia*, at end 1996.

It was the successful publication of that book and the earlier

Smuggled: The Underground Trade in Australia's Wildlife in 1993 (Hoser 1993, 1996) that finally ended a 20 year ban by Australian governments on the lawful right of private individuals to be able to catch, keep or study reptiles and most other kinds of wildlife.

The contribution Tees made to removing these anti-conservation laws was significant, and all animal lovers, wildlife conservationists and herpetologists owe this man a deep debt of gratitude.

Content: *Teesgecko nepthys* (Couper, Covacevich and Moritz, 1993) (type species); *T. championae* (Schneider, Couper, Hoskin and Covacevich, 2000); *T. isis* (Couper, Covacevich and Moritz, 1993); *T. ossa* (Couper, Covacevich and Moritz, 1993).

SUBTRIBE SHIREENGECKIINA *SUBTRIBE NOV.*

(Terminal taxon: *Saltuarius wyperba* Couper, Schneider and Covacevich, 1997)

Diagnosis: *Oxygeckoina subtribe nov.* is separated from the other subtribe Shireengeckiina *subtribe nov.* by the rostral scale not contacting the nostril (versus in contact with the nostril in Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*) and no preanal pores, (versus usually present in both Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*).

The tribe Shireengeckiini *tribe nov.* is defined as follows: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.* (which also separates the subtribe Shireengeckiina *subtribe nov.* from the tribe Orrayini *tribe nov.*).

Distribution: Scattered localities along the East Coast of Australia from Cape York in Queensland, south to northern New South Wales, in wetter parts of the coast and nearby ranges.

Content: *Shireengecko gen. nov.*; *Saltuarius* Couper, Covacevich and Moritz, 1993.

GENUS *SALTUARIUS* COUPER, COVACEVICH AND MORITZ, 1993.

Type species: *Gymnodactylus cornutus* Ogilby, 1892.

Diagnosis: Within the subtribe Shireengeckiina *subtribe nov.* the genus *Saltuarius* Couper, Covacevich and Moritz, 1993 is separated from *Shireengecko gen. nov.* (the other genus in the subtribe) by one or other of the following suites of characters: 1/ The throat is smooth or with a few scattered tubercles; pre-anal pores are present only in the males; there are long recurved flank spines each sitting in a rosette of enlarged basal scales (subgenus *Saltuarius*), or 2/ The throat has numerous scattered tubercles and pre-anal pores are present in both sexes (subgenus *Quazisaltuarius subgen. nov.*).

Oxygeckoina subtribe nov. is separated from the other subtribe Shireengeckiina *subtribe nov.* by the rostral scale not contacting the nostril (versus in contact with the nostril in Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*) and no preanal pores, (versus usually present in both Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*).

The tribe Shireengeckiini *tribe nov.* is defined as follows: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.* (which also separates the subtribe Shireengeckiina *subtribe nov.* from the tribe Orrayini *tribe nov.*).

Distribution: The wet tropics of North Queensland, Australia (subgenus *Saltuarius*), or mid-eastern Queensland in the ranges west and south-west of Rockhampton, including the Blackdown Tableland and Dawes Range areas (subgenus *Quazisaltuarius subgen. nov.*).

Content: *Saltuarius* (*Saltuarius*) *cornutus* (Ogilby, 1892) (type species); *S.* (*Saltuarius*) *adelynae sp. nov.*; *S.* (*Saltuarius*) *eximius* Hoskin and Couper, 2013; *S.* (*Quazisaltuarius*) *jackyae sp. nov.*; *S.* (*Quazisaltuarius*) *salebrosus* (Covacevich, 1975).

SUBGENUS *QUAZISALTUARIUS SUBGEN. NOV.*

Type species: *Phyllurus salebrosus* Covacevich, 1975.

Diagnosis: Within the subtribe Shireengeckiina *subtribe nov.* the genus *Saltuarius* Couper, Covacevich and Moritz, 1993 is separated from *Shireengecko gen. nov.* (the other genus in the subtribe) by one or other of the following suites of characters: 1/ The throat has numerous scattered tubercles and pre-anal pores are present in both sexes (subgenus *Quazisaltuarius subgen. nov.*), or 2/ The throat is smooth or with a few scattered tubercles; pre-anal pores are present only in the males; there are long recurved flank spines each sitting in a rosette of enlarged basal scales (subgenus *Saltuarius*).

Oxygeckoina subtribe nov. is separated from the other subtribe Shireengeckiina *subtribe nov.* by the rostral scale not contacting the nostril (versus in contact with the nostril in Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*) and no preanal pores, (versus usually present in both Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*).

The tribe Shireengeckiini *tribe nov.* is defined as follows: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.* (which also separates the subtribe Shireengeckiina *subtribe nov.* from the tribe Orrayini *tribe nov.*).

Distribution: The subgenus *Quazisaltuarius subgen. nov.* occurs in mid-eastern Queensland in the ranges west and south-west of Rockhampton, including the Blackdown Tableland and Dawes Range areas.

The subgenus *Saltuarius* is found in the wet tropics of North Queensland, Australia.

Etymology: Named "Quazi" as in "nearly" in conjunction with the subgenus it is most similar to, namely "*Saltuarius*".

Content: *S.* (*Quazisaltuarius*) *jackyae sp. nov.*; *S.* (*Quazisaltuarius*) *salebrosus* (Covacevich, 1975).

SUBGENUS *SALTUARIUS* COUPER, COVACEVICH AND MORITZ, 1993.

Type species: *Gymnodactylus cornutus* Ogilby, 1892.

Diagnosis: Refer to the preceding description for the subgenus *Quazisaltuarius subgen. nov.* for the diagnosis of this subgenus as well.

Distribution: The distribution for the subgenus *Saltuarius* is restricted to the wet tropics of North Queensland, Australia. The

subgenus *Quazisaltuarius subgen. nov.* is found in mid-eastern Queensland in the ranges west and south-west of Rockhampton, including the Blackdown Tableland and Dawes Range areas.

Content: *Saltuarius* (*Saltuarius*) *cornutus* (Ogilby, 1892) (type species); *S.* (*Saltuarius*) *adelynae sp. nov.*; *S.* (*Saltuarius*) *eximius* Hoskin and Couper, 2013.

GENUS *SHIREENGECKO GEN. NOV.*

Type species: *Saltuarius wyperba* Couper, Schneider and Covacevich, 1997.

Diagnosis: Within the subtribe Shireengeckiina *subtribe nov.* the genus *Saltuarius* Couper, Covacevich and Moritz, 1993 is separated from *Shireengecko gen. nov.* (the other genus in the subtribe) by one or other of the following suites of characters: 1/ The throat is smooth or with a few scattered tubercles; pre-anal pores are present only in the males; there are long recurved flank spines each sitting in a rosette of enlarged basal scales (subgenus *Saltuarius*), or 2/ The throat has numerous scattered tubercles and pre-anal pores are present in both sexes (subgenus *Quazisaltuarius subgen. nov.*).

The genus *Shireengecko gen. nov.* is also characterised and separated from other genera in the tribe Shireengeckiini *tribe nov.* by the following suite of characters: The throat is smooth or with a few scattered tubercles; pre-anal pores are only present in males; simple enlarged spinose flank scales sit in a rosette of flat scales which are not enlarged.

The subgenus *Quazishireengecko subgen. nov.* monotypic for the species S. (*Quazishireengecko*) *swaini* (Wells and Wellington, 1985), is separated from the nominate subgenus (all other species in the genus), by the following characters: the rostril shield is usually in contact with the nostril; the upper surfaces of the digits have spinose tubercles; the scales on the snout have conspicous scattered and enlarged scales or granules among the smaller scales above the supralabials. Conversely *Shireengecko subgen. nov.* are diagnosed and separated from *Quazishireengecko subgen. nov.* by the fact that the scales on the snout usually grade evenly and without scattered or enlarged scales or granules above the supralabials, or if this is not the case, by the rostral shield being excluded from the nostril and the upper surfaces of the digits lack spinose tubercles.

Oxygeckoina subtribe nov. is separated from the other subtribe Shireengeckiina *subtribe nov.* by the rostral scale not contacting the nostril (versus in contact with the nostril in Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*) and no preanal pores, (versus usually present in both Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*).

The tribe Shireengeckiini *tribe nov.* is defined as follows: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.* (which also separates the subtribe Shireengeckiina *subtribe nov.* from the tribe Orrayini *tribe nov.*).

Distribution: *Shireengecko gen. nov.* are found in the ranges immediately north and south of the New South Wales and Queensland border, eastern Australia. *Shireengecko subgen. nov.* are generally found south of the border and *Quazishireengecko subgen. nov.* generally north.

Etymology: Named in honour of my wife, Shireen Hoser, in recognition of some decades of work in the wildlife conservation space. Unless mandated under rules of the *International Code of Zoological Nomenclature*, the spelling of the generic names *Shireengecko gen. nov.* or *Quazishireengecko subgen. nov.* should not be altered in any way.

Content: *Shireengecko* (*Shireengecko*) *wyperba* Couper, Schneider and Covacevich, 1997 (type species); *S.* (*Shireengecko*) *kateae* (Couper, Sadlier, Shea and Worthington Wilmer, 2008); *S.* (*Shireengecko*) *moritzi* (Couper, Sadlier, Shea and Worthington Wilmer, 2008); *S.* (*Quazishireengecko*) *swaini* (Wells and Wellington, 1985)

SUBGENUS *QUAZISHIREENGECKO SUBGEN. NOV.*

Type species: *Phyllurus swaini* Wells and Wellington, 1985.

Diagnosis: Within the subtribe Shireengeckiina *subtribe nov.* the genus *Saltuarius* Couper, Covacevich and Moritz, 1993 is separated from *Shireengecko gen. nov.* (the other genus in the subtribe) by one or other of the following suites of characters: 1/ The throat is smooth or with a few scattered tubercles; pre-anal pores are present only in the males; there are long recurved flank spines each sitting in a rosette of enlarged basal scales (subgenus *Saltuarius*), or 2/ The throat has numerous scattered tubercles and pre-anal pores are present in both sexes (subgenus *Quazisaltuarius subgen. nov.*).

The genus *Shireengecko gen. nov.* is also characterised and separated from other genera in the tribe Shireengeckiini *tribe nov.* by the following suite of characters: The throat is smooth or with a few scattered tubercles; pre-anal pores are only present in males; simple enlarged spinose flank scales sit in a rosette of flat scales which are not enlarged.

The subgenus *Quazishireengecko subgen. nov.* monotypic for the species S. (*Quazishireengecko*) *swaini* (Wells and Wellington, 1985), is separated from the nominate subgenus (all other species in the genus), by the following characters: the rostril shield is usually in contact with the nostril; the upper surfaces of the digits have spinose tubercles; the scales on the snout have conspicous scattered and enlarged scales or granules among the smaller scales above the supralabials. Conversely *Shireengecko subgen. nov.* are diagnosed and separated from *Quazishireengecko subgen. nov.* by the fact that the scales on the snout usually grade evenly and without scattered or enlarged scales or granules above the supralabials, or if this is not the case, by the rostral shield being excluded from the nostril and the upper surfaces of the digits lack spinose tubercles.

Oxygeckoina subtribe nov. is separated from the other subtribe Shireengeckiina *subtribe nov.* by the rostral scale not contacting the nostril (versus in contact with the nostril in Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*) and no preanal pores, (versus usually present in both Shireengeckiina *subtribe nov.* and the tribe Orrayini *tribe nov.*).

The tribe Shireengeckiini *tribe nov.* is defined as follows: Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping.

Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. Postmentals and adjacent gulars subequal. Original tail is broad, heart or leaf shaped and flattened and with spines, or usually without in regenerated tails. Claw between 2 scales, the lower deeply notched. Digits are compressed with three or more rows of lateral scales. Neck is not distinctly slender and elongate. Body not laterally compressed, but instead flattened. Two lumbar (rib free) vertebrae, versus 3 in geckos from the tribe Orrayini *tribe nov.* (which also separates the subtribe Shireengeckiina *subtribe nov.* from the tribe Orrayini *tribe nov.*).

Distribution: *Shireengecko gen. nov.* are found in the ranges immediately north and south of the New South Wales and Queensland border, eastern Australia. *Shireengecko subgen. nov.* are generally found south of the border and *Quazishireengecko subgen. nov.* generally north.

Etymology: Named "Quazi" as in "nearly" in conjunction with the subgenus it is most similar to, namely "*Shireengecko*". Unless mandated under rules of the *International Code of Zoological Nomenclature*, the spelling of the generic names *Shireengecko gen. nov.* or *Quazishireengecko subgen. nov.* should not be altered in any way.

Content: *Shireengecko* (*Quazishireengecko*) *swaini (*Wells and Wellington, 1985) (monotypic).

SUBGENUS *SHIREENGECKO GEN. NOV.*

Type species: *Saltuarius wyperba* Couper, Schneider and Covacevich, 1997.

Diagnosis: Refer to the preceding description for the subgenus *Quazishireengecko subgen. nov.* for the diagnosis of this subgenus as well.

Distribution: *Shireengecko gen. nov.* are found in the ranges immediately north and south of the New South Wales and Queensland border, eastern Australia. *Shireengecko subgen. nov.* are generally found south of the border and *Quazishireengecko subgen. nov.* generally north.

Etymology: See for the same genus.

Content: *Shireengecko* (*Shireengecko*) *wyperba* Couper, Schneider and Covacevich, 1997 (type species); *S.* (*Shireengecko*) *kateae* (Couper, Sadlier, Shea and Worthington Wilmer, 2008); *S.* (*Shireengecko*) *moritzi* (Couper, Sadlier, Shea and Worthington Wilmer, 2008).

CARPHODACTYLUS HOSERAE SP. NOV.

Holotype: A preserved female specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number: J60714 collected at Thornton Peak National Park on CREB track from Daintree Crossing, Queensland, Australia, Latitude -16.10, Longitude 145.34.

The Queensland Museum, Brisbane, Queensland, Australia is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Australian Museum, Sydney, New South Wales, Australia, specimen number: R.2252, collected at Bloomfield River, Cooktown, Queensland, Australia, Latitude -15.97, Longitude 145.32.

Diagnoisis: *Carphodactylus hoserae sp. nov.* is similar in most respects to *C. laevis* Günther, 1897, which it has until now been treated as being. However *C. hoserae sp. nov.* is readily separated from *C. laevis* by having a large number of medium sized black spots and flecks across the upper body in a consistent pattern (as depicted on page 262 of Cogger 2014), versus none or only a few tiny black flecks in *C. laevis*, which if present are so tiny and few as to appear random (as depicted on page 39 of Wilson 2015). On *C. hoserae sp. nov.* these distinctive black spots are also on the limbs, whereas these are always absent in *C. laevis.*

C. hoserae sp. nov. has a well-defined orange tinge in the scales above the eye, giving it an edged appearance. In *C. laevis* this colouration is either absent or indistinct.

This species and *C. laevis* Günther, 1897 are separated from all other Australian geckos by the following suite of characters:

Eye is snake-like without movable lids, pupil in daylight is a narrow vertical slit, scales on the dorsal surface are small and juxtaposed but not overlapping. Digits are angular when viewed laterally. Feet are bird like and their terminal claws are conspicuous and free. The digits are angular when viewed laterally. Postmentals and adjacent gulars subequal. Digits are long, slender and only moderately compressed distally and without enlarged apical subdigital lamellae, but with a single series of slightly swollen transverse lamellae. Original tail ending in a tapered tip and without a terminal knob. Claw between five scales. Body is laterally compressed. Rostral and mental shields are rounded. Labials are much larger than adjacent scales. Postmentals and adjacent gulars are subequal. Preanal pores are present. Adults have snout vent length of about 13 cm (adapted from Cogger 2014).

Distribution: *C. hoserae sp. nov.* occurs in the northern wet tropics region of Queensland in the general region bounded by Mount Lewis in the South and Cooktown in the north. By contrast *C. laevis*, with a type locality of Mount Bartle Frere, Queensland, occurs in the general region from Cairns and south in the wet tropics including the Atherton Tableland, Queensland. There is a gap between the known ranges of both species of about 20 km straight line.

Etymology: Named in honour of my mother, Katrina Hoser, in recognition of a substantial contribution to wildlife conservation globally, spanning more than 4 decades.

UVIDICOLUS COVACEVICHAE SP. NOV.

Holotype: A preserved specimen in the Queensland Museum, Brisbane, Australia, specimen number: J3859 from the Pikes Creek area, near Girraween National Park area, Southern Downs, Queensland, Australia, Latitude -28.7, Longitude 151.6. The Queensland Museum, Brisbane, Australia is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen in the Queensland Museum, Brisbane, Australia, specimen number: J4342 from near the Pikes Creek area, near Girraween National Park area, Southern Downs, Queensland, Australia, Latitude -28.7, Longitude 151.9.

Diagnosis: *Uvidicolus covacevichae sp. nov.* has until now been thought of as a northern population of *U. sphyrurus* (Ogilby, 1892). However, both populations are geographically separated, molecular studies show that they have significant divergence and they are morphologically distinct and easily distinguished. Furthermore, both are readily distinguished by consistent colour differences between specimens, enabling field workers the ability to identify either species at a glance. *U. sphyrurus* are characterised by a distinctive dorsal patterning of numerous small or medium-sized white spots, brownish at the edges, in turn etched with blackish pigment giving a somewhat bright occelated appearance, or alternatively a distinct pattern of bright yellow dorsal spots without the etching, this being most common in immature specimens. When etched these spots cover half the dorsal surface. There is no configuration remotely like these/this in *U. covacevichae sp. nov.*. By contrast *U. covacevichae sp. nov.* has a relatively even drab brown dorsal surface with about 5 indistinct or broken white cross bands (not seen in *U. sphyrurus*) between which are large semidistinct dark blotches (also not seen in *U. sphyrurus*).

In *U. covacevichae sp. nov.* there is a distinct black streak running from the lower back of the eye to the back of the jaw. This is either absent, indistinct or broken in *U. sphyrurus.*

In *U. covacevichae sp. nov.* that have any white spots on the dorsal surface, these contrast with those seen in *U. sphyrurus* by not being etched with blackish pigment.

Some specimens of *U. sphyrurus* have a semi-distinct broken black line separating the coloured dorsum from the pale venter and this is not seen in *U. covacevichae sp. nov.*.

A typical specimen of *U. covacevichae sp. nov.,* depicted as "*Underwoodisaurus sphyrurus*" is shown at the bottom of page 174 of Swan (2008), on page 243 of Wilson and Knowles (1998) depicted as "*Underwoodisaurus sphyrurus*" or page 38 of Wilson (2015).

Typical *U. sphyrurus* is depicted on page 43 of Swan, Shea and Sadlier (2009).

Of peripheral relevance is that the names *Gymbodactylus sphyrurus* Ogilby, 1892 and *Hetoronota walshi* Kinghorn, 1931 both from New South Wales, both apply to the southern population, now known as *U. sphyrurus* and so were not available names for the newly named taxon *U. covacevichae sp. nov.*.

Distribution: *U. covacevichae sp. nov.* are known only from the general vicinity of the type location being the Girraween National Park area, Southern Downs, Queensland, Australia. Specimens from near the New England Region of New South Wales and west of there are of *U. sphyrurus.*

Etymology: Named in honour of the late Jeanette Covacevich, formerly of the Queensland Museum in Brisbane, Queensland, Australia until her retirement and recently deceased from cancer, in recognition of her significant contributions to herpetology in Queensland, Australia.

SALTUARIUS ADELYNAE SP. NOV.

Holotype: A preserved male specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J27145 collected from the Big Tableland area, North Queensland, Latitude -15.8, Longitude 145.3. The Queensland Museum, Brisbane, Queensland, Australia, is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J17801 collected from the Big Tableland area, North Queensland, Latitude -15.8, Longitude 145.3.

Diagnosis: *Saltuarius adelynae sp. nov*. has until now been treated as a northern population of *S. cornutus* (Ogilby, 1892). However, both populations are geographically separated, molecular studies show that they have significant divergence and they are morphologically distinct and easily distinguished.

The species *S. cornutus* has a different shaped dark depressed patch at back of head to that seen in *S. adelynae sp. nov*..

In *S. cornutus* it is pointing backwards and shaped like a drawing of a typical mesa-shape as seen in a desert (as seen easily in the image of a specimen on page 278 of Cogger 2014, and again on page 279 in the right hand image, in the same book), versus a large rounded C-shaped patch in *S. adelynae sp. nov*..

The original tail in *S. cornutus* including on the mid dorsal line has a very thin dark or light stripe down the middle, often broken, versus no such line in *S. adelynae sp. nov*..

In *S. cornutus*, the black bands on the toes are significantly smaller than the white ones, versus larger than or roughly equal in size to the white bands in *S. adelynae sp. nov*..

There is a significant amount of white etching on the dorsal body surface in *S. cornutus*, versus none, little or indistinct in *S. adelynae sp. nov*..

Typical *S. cornutus* is depicted on page 140 (bottom image) in Swan (2008).

The type locality for *S. cornutus* (Ogilby, 1892) is the Bellenden Ker ranges 60 km south of Cairns near Babinda, Queensland. The type locality for *Phyllurus lichenosus* Günther, 1897 is Mount Bartle Frere, Queensland. 51.8 km south of Cairns and near the Bellenden Ker ranges. It is therefore a junior synonym of *S. cornutus* (Ogilby, 1892) and not an available name for the species *S. adelynae sp. nov*..

Distribution: *S. adelynae sp. nov.* occurs in the northern wet tropics in the hills immediately north of Mount Lewis to just south of Cooktown, Queensland, Australia. *S. cornutus* is found in the general region from Cairns and west of there to the vicinity of Mount Spec in the Paluma Range National Park, north of Townsville, Queensland.

Etymology: Named in honour of my daughter, Adelyn Hoser, aged 17 in 2016 in recognition of a lifetime's work in hands-on wildlife conservation.

SALTUARIUS (QUAZISALTUARIUS) JACKYAE SP. NOV.

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J74946 collected at the Blackdown Tableland, National Park, Queensland, Australia, Latitude -23.46, Longitude 149.04. The Queensland Museum, Brisbane, Queensland, Australia, is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J35448 collected at the Blackdown Tableland, National Park, Queensland, Australia, Latitude -23.90, Longitude 149.20.

Diagnosis: *Saltuarius* (*Quazisaltuarius*) *jackyae sp. nov*. has until now been treated as a north-western population of *S. salebrosus* Covacevich, 1975. However molecular results show a significant divergence between this western outlier population and *S. salebrosus* and they are easily distinguished morphologically.

At a glance one can immediately distinguish the two species by the fact that in *S. jackyae sp. nov*. the dark and light dorsal body blotches are not etched with obvious thick sharp brownish-black borders as seen in *S. salebrosus.* The hind limbs of *S. jackyae sp. nov*. lack the obvious jagged cross-lines seen on *S. salebrosus*, instead appearing to be punctuated by either irregular markings or alternatively vague and indistinct banding.

The front toes of *S. jackyae sp. nov*. have more dark (brown to black) pigment as seen in the cross bands, versus the reverse in *S. salebrosus.*

Typical *S. jackyae sp. nov*. is depicted on page 280 of Cogger (2014) identified as "*Saltuarius salebrosus*" and also page 243 (photo 219) in Wilson and Knowles (1988), depicted as "*Phyllurus salebrosus*".

Typical *S. salebrosus* is depicted on page 144 of Swan (2008), in the bottom image or page 46, or Wilson (2015) in the top right image.

Distribution: The species *S. jackyae sp. nov*. is only known from the Blackdown Tableland National Park, south-east Queensland, Australia. The similar species *S. salebrosus* is found about 150 km further south-east in the general vicinity of the type locality, Monto, also in south-east Queensland.

Etymology: Named in honour of my daughter, Jacky Indigo Hoser, aged 15 in 2016 in recognition of a lifetime's work in wildlife conservation.

NEPHRURUS (NEPHRURUS) BLACKI SP. NOV.

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J54644 collected at Heathlands Road, 1km from the Main Cape Road junction, far North Queensland, Australia, Latitude -11.77, Longitude 142.67. The Queensland Museum, Brisbane, Queensland, Australia, is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J57652 collected at 6.5km east of the Heathlands airstrip, far North Queensland, Australia, Latitude -11.44, Longitude 142'38.

Diagnosis: *Nephrurus blacki sp. nov.* has until now been recognized as a variant of *N. asper* Günther, 1876. However it can be readily distinguished from that species on the basis of colouration.

N. asper is characterised by dullish colouration with indistinct narrow, irregular dorsal crossbands (as depicted on page 40, of Wilson (2015) in the bottom left photo), or sometimes with scattered whitish spots as raised individual scales in a somewhat banded configuration (as depicted on page 264 of Cogger (2014), top right photo), but otherwise on a plain body background.

By contrast *Nephrurus blacki sp. nov.* has a distinct and spectacular pattern of well-marked wide dorsal crossbands, alternating dark and light as depicted on page 59 of Couper and Gregson (1994) in the bottom image. However, I note that the particular specimen in the image was nowhere near as brilliantly coloured as most other *N. blacki sp. nov.*. The bands are formed by a significant merging of the individual white scales that are scattered in *N. asper.*

The distinctive banding of *N. blacki sp. nov.* carries over to the front limbs, which are also well banded, extending to a limited degree to the digits, but not as complete dark and light bands on them as seen in *N. sheai* Couper, 1994. By contrast *N. asper* either has no banding on the front limbs, spotting only, or rarely indistinct bands, which never extends to the toes, which may be

spotted, but never with any semblence of crossbands.

N. blacki sp. nov. also has significant lightening of the snout, not seen in *N. asper.*

The three currently recognized species within the subgenus *Nephrurus* (predating this paper), better known as the classic "Rough-knob-tailed geckos" as defined previously in this paper can be divided as follows: 1/ *N. sheai* Couper, 1994 (including the subspecies, *N. sheai kimberleyae subsp. nov.* formally named within this paper) has digits strongly banded with brown and white; 2/ *N. amyae* Couper, 1994 lacks bands on the digits and has extremely pronounced tubercles on the rump and thighs which are much larger than those covering the rest of the dorsum; 3/ *N. asper* Günther, 1876 (including *N. blacki sp. nov.* and the subspecies *N. asper saxacola subsp. nov.*) lacks prominent bands on the digits and the tubercles on the rump and thighs are small to moderate.

Couper and Gregson were easily able to separate specimens of *N. blacki sp. nov.* from nominate *N. asper*, but decided "The broad-banded CYP specimens are regarded as a geographically distinct

colour morph of *N. asper*." They did not give these lizards any taxonomic recognition. However the moleclular results of Oliver and Bauer (2011), showed that the divergence between these "broad-banded CYP specimens" and nominate *N. asper* was sufficient to warrant taxonomic recognition at the species level. Hence they are named in this paper as *N. blacki sp. nov.*.

There are numerous excellent images of this taxon (listed as *N. asper*) on the internet on photo-sharing sites such as "www dot flickr dot com".

Distribution: The drier parts of Cape York, Queensland, Australia, north of the wet tropics belt on the southern parts of Cape York, the southern limit of distribution being Mount Surprise, 18'21'S (Couper and Gregson, 1994).

Etymology: Named in honour of Shane Black, formerly of Sydney, New South Wales, now resident of far north Queensland, in recognition of his significant work involving the breeding of Australian elapid snakes in captivity, in particular Taipans *Oxyuranus scutellatus* (Peters, 1867) and *Parademansia microlepidota* (McCoy, 1879) at his Sydney facility. More recently the excellent quality photos of reptiles in their natural habitat that he regularly posts on the internet have provided a valuable educational resource.

He became one of many refugees from New South Wales, fleeing the disgraced ex-cops and eco-terrorists who work for the New South Wales National Parks and Wildlife Service (NPWS), after one too many illegal armed raids on his world-class breeding facility.

That single raid killed off many years of valuable conservation work and Black's marriage.

When Shane Black was confronted with the prospect of many more years of illegal armed raids by gun-toting wildlife officers, he fled. However when farmer Ian Turnbull found himself in the same situation as Shane Black, he decided to fire a round of bullets into the alcoholic wildlife officer Glen Turner, thereby killing him (Chillingworth, 2016).

Before Turnbull killed his oppressor, the evil, vindictive Glen Turner had harassed and victimized many others, causing no less than 7 law-abiding people to commit suicide.
This is the sorry state, known as the war of wildlife law enforcement in Australia as of 2016.

NEPHRURUS* (*QUAZINEPHRURUS*) *COREYRENTONI SP. NOV.

Holotype: A preserved specimen at the South Australian Museum (SAM), Adelaide, South Australia, Australia, specimen number: SAM R36563, collected at 7.5 km north of Courtabie, South Australia, Australia, Latitude 33.14, Longitude 134.83.

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

Paratypes: Three preserved specimens at the South Australian Museum (SAM), Adelaide, South Australia, Australia, specimen numbers: SAM R12614.A, R12614.B and R12614.C, collected from the Eastern Edge of Bascombes Well National Park, Eyre Peninsula, South Australia, Australia, Latitude -33.67, Longitude 135.52.

Diagnosis: *Nephrurus coreyrentoni sp. nov.*, has until now been treated as a population of *N. stellatus* Storr, 1963 and would in the absence of the diagnostic information herein, otherwise be identified as that taxon using the text of Cogger (2014). However *N. coreyrentoni sp. nov.*, is readily separated from *N. stellatus* by having a dorsal pattern comprising of small white spots that are dull in appearance, as opposed by being bright and well-defined in *N. stellatus.* In *N. stellatus* there is a well-defined patch of white underneath the eye, which extends backwards about half way towards the ear. In *Nephrurus coreyrentoni sp. nov.* this patch is ill defined, though still present. *Nephrurus coreyrentoni sp. nov.* is also defined by a distinct bluey green patch above each eye, versus purplish in *N. stellatus.*

Oliver and Bauer (2011), wrote: "The uncorrected genetic divergence between two allopatric populations of *N. stellatus* across southern Australia (either side of the Nullarbor Plain) was also comparatively low (5.3%)." As mentioned already in this paper, in the case of many other reptiles, far lower divergences have resulted in new species being erected (e.g. Harvey *et al.* 2000), which is why I have had no problem in formally describing this taxon herein as a new species.

Both *N. stellatus* and *N. coreyrentoni sp. nov.* are separated from all other *Quazinephrurus subgen. nov.* species by the following suite of characters: There is no vertebral stripe in adults and if one is present in juveniles, there are nine or more longitudinal rows of enlarged tubercles on the tail; the tail is narrow and only slightly depressed; most enlarged tubercles on the back are surrounded by a ring of scales which are noticeably larger than the other body scales between the tubercles; back and flanks have numerous white spots, each much larger than the central tubercle.

As already mentioned these spots are bright and well defined in *N. stellatus* versus dull in *N. coreyrentoni sp. nov.*, which allows either taxon to be separated from one another at a glance. Typical *N. stellatus* is depicted on page 268 of Cogger (2014), in the photo on the bottom left, while typical *N. coreyrentoni sp. nov.* is depicted in Ehmann (1992), page 64 at bottom.

Distribution: *N. coreyrentoni sp. nov.* are found along the south coast of South Australia, from the Eyre Peninsula, to just east of the Western Australian border, Australia. The species *N. vertebralis* Storr, 1963 is herein restricted to inland South-eastern Western Australia as a completely disjunct population.

Etymology: Named in honour of Corey Renton of Paradise, South Australia, Australia, son of Ian Renton, owner of "Snake-away Services", in recognition of his many decades of working to educate people about reptiles and removing unwanted venomous snakes from homes in Adelaide, South Australia.

NEPHRURUS* (*QUAZINEPHRURUS*) *IANRENTONI SP. NOV.

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R139007, collected from Mandora, Western Australia, Australia, Latitude -19.812, Longitude 121.47.

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

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: R139003, collected from Mandora, Western Australia, Australia, Latitude -19.812, Longitude 121.47.

Diagnosis: Until now *N. ianrentoni sp. nov.* has been treated as the western population of *N. laevissimus*, which is what both taxa would key as using the text of Cogger (2014). *N. ianrentoni*

sp. nov. is separated from *N. laevissimus* by the presence of a distinctive white stripe running from under the eye towards the ear, versus either none or an indistinct marking without well defined boundaries in *N. laevissimus.*

N. laevissimus has a moderate to significant amount of peppering across the upper body, versus either none or very little in *N. ianrentoni sp. nov.*.

In *N. ianrentoni sp. nov.*, whitening of the lower labials along the lower jaw extends most of the way along the lower jaw, versus only about half way in *N. laevissimus.*
N. laevissimus and *N. ianrentoni sp. nov.* are readily separated from all othere *Nephrurus sensu lato* (including all subgenera defined in this paper) by the absence of tubercles on the flanks.

Distribution: Arid parts (sand dunes) of the North-west Australian coast and nearby regions of north-western Western Australia, centered in the region of the Great Sandy Desert, between Broome and Port Hedland.

Etymology: Named in honour of Ian Renton of Paradise, South Australia, Australia, owner of "Snake-away Services", in recognition of his many decades of working to educate people about reptiles and removing unwanted venomous snakes from homes in Adelaide, South Australia.

***UNDERWOODISAURUS MILII* (BORY DE SAINT-VINCENT, 1825)**

Type locality: Shark Bay, Western Australia.

Discussion and Diagnosis: *Underwoodisaurus* Wermuth, 1965 has been treated as monotypic, for the species *U. milii* (Bory de Saint-Vincent, 1835) by most authors since the removal of the species *Gymnodactylus spyrurus* Ogilby, 1892 from the genus by Oliver and Bauer in 2011, when they created a new monotypic genus *Uvidicolus* to accomodate the putative species.

Also in 2011, Doughty and Oliver described the species *U. seorsus* from the Hamersley Range, Western Australia as a part of the *U. milii* complex, which by virtue of the actions of Oliver and Bauer (2011) was putatively the only species remaining in the genus.

However the dismemberment of the genus commenced earlier, with Boulenger in 1913, when he described the taxon *Gymnodactylus asper* Boulenger, 1913 from inland Australia, with reference to the other species.

Wells and Wellington (1983) described another taxon in the species complex, called *U. husbandi*, being the distinctive form from the east coast.

In 1985 the two authors added Boulenger's species *U. asper* to the complex, making it a total of three species. If one adds *U. seorsus* to the group, there are four species in the group with available names.

The molecular results of Oliver and Bauer (2011) provide evidence for no less than four species and their data does not include samples for *U. seorsus* or the east coast form (*U. husbandi*).

Inspection of live and dead specimens from all relevant locations supports the concept of there being at least six distinguishable species in the complex and so all are identified herein for the first time ever.

The available names for four as mentioned above are used and two others are formally assigned under the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

In summary the six relevant species are as follows:

U. milii (Bory de Saint-Vincent, 1835) from Shark Bay and nearby parts of the mid Western Australian coast.

U. perthensis sp. nov. from south-west Western Australia, in the general region of Perth.

U. husbandi Wells and Wellington, 1983, from coastal New South Wales.

U. seorsus from the Hamersley Range in Western Australia.

U. asper (Boulenger, 1913), from Central and inland north-east Australia, in the general vicinity of the Cooper's Creek drainage, as in the elevated areas nearby.

U. mensforthi from most of southern Australia, excluding the far west and far east and north-east.

The various taxa are separated from one another by the following unique suites of colouration traits:

U. milii are separated from the other species by having a brown body with yellow spots which merge and are arranged into well defined broken dorsal crossbands along the entire length of the body and tail. None of the white crossbands of the black tail have any black or grey pigment, except for the second one, which has limited black or grey pigment within it (original tails). The white crossbands on the tail are without borders.

Nominate *U. mensforthi sp. nov.* is characterised by a distinctly black tail with white cross bands that lack any darker pigment in them (original tails), with a dark brownish body and bright yellow spots on the body, extending onto the hindlimbs and to a limited extent the upper forelimbs. There is significant lightening of the front of the snout. The white spots on the body form a broken reticulated configuration and not as bands of any sort, except in the context as described below. There are very indistinct orange spots on the dorsal surface.

In *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* as well as *U. husbandi*, the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands.

The subspecies *U. mensforthi martinekae subsp. nov.* are separated from the nominate form of *U. mensforthi sp. nov.* by having significantly more white spots along the lower flanks, giving a distinctly striped appearance along the lower margins, as well as significant spotting on the lower forelimbs, which is absent in *U. mensforthi sp. nov.*.

U. husbandi is similar in most respects to *U. milii,* but is separated from that taxon by being generally purple in colour (versus brownish) and without significant lightening of the front of the snout. There are significant numbers of yellow spots on both upper and lower hind and forelimbs. There are no orange spots of any form on the dorsal surface. As in *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands, but these are not found on the lower body as in *U. milii.*

U. asper is readily separated from the other species by its reddish brown body, including the tail (original tails), the white dorsal spots being arranged into obvious broken crossbands along the length of the body, including very distinct and thickened nuchal bands, in addition to distinct orange spots covering the rest of the dorsal surface. There is significant white spotting on all the limbs, both top and bottom parts. This taxon has a reddish brown tail with whitish crossbands bordered with purple.

U. perthensis sp. nov. are readily separated from all other forms by a distinctly blackish hue throughout the body and tail, in association with a dark purplish colouration. Besides the white spots on the body there are also indistinct black spots. The white bars on the tail are broken with black pigment. The white spots at the front of the body do not coalesce to form a nuchal band of any sort. Upper and lower limbs are peppered with white.

U. seorsus is separated from all other species by having unusually small (tiny) pale tubercles on the back of the body and these being scattered evenly (by density and distribution) from neck to the hind limbs, as opposed to being more prominent on the forebody than the rear in the other species (excluding *U. milii* and *U. asper* which have broken crossbands the length of the body). Furthermore there are no obvious nuchal bands, this part of the body at best having widely scattered white spots. The

head is notable in being unmarked and purplish in colour, limbs (upper and lower) are well spotted with yellow and the white cross bands on the tail are merely enlarged transversely aligned spots with about 50% of the bands being obvious purple pigment.

Distribution: *U. milii* is apparently confined to the mid coastal region of Western Australia in the general vicinity of Shark Bay. On the south-west Australian coast and nearby wheatbelt areas are *U. perthensis.*

UNDERWOODISAURUS PERTHENSIS SP. NOV.

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: REPT:R49250, collected at the site of a proposed dam on the Collie River, about 25 km North-west of Collie, Western Australia, Australia, Latitude -33.37, Longitude 115.92.

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

Paratypes: Two preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers: REPT:R49251 and REPT:R49252, collected at the site of a proposed dam on the Collie River, about 25 km North-west of Collie, Western Australia, Australia, Latitude -33.37, Longitude 115.92.

Diagnosis: The various taxa within the so-called *U. milii* (Bory de Saint-Vincent, 1835) species complex are separated from one another by the following unique suites of colouration traits as follows:

U. perthensis sp. nov. are readily separated from all other forms by a distinctly blackish hue throughout the body and tail, in association with a dark purplish colouration. Besides the white spots on the body there are also indistinct black spots. The white bars on the tail are broken with black pigment. The white spots at the front of the body do not coalesce to form a nuchal band of any sort, although there are some aberrant specimens with a broken nuchal band. Upper and lower limbs are peppered with white.

U. milii are separated from the other species by having a brown body with yellow spots which merge and are arranged into well defined broken dorsal crossbands along the entire length of the body and tail. None of the white crossbands of the black tail have any black or grey pigment, except for the second one, which has limited black or grey pigment within it (original tails). The white crossbands on the tail are without borders.

Nominate *U. mensforthi sp. nov.* is characterised by a distinctly black tail with white cross bands that lack any darker pigment in them (original tails), with a dark brownish body and bright yellow spots on the body, extending onto the hindlimbs and to a limited extent the upper forelimbs. There is significant lightening of the front of the snout. The white spots on the body form a broken reticulated configuration and not as bands of any sort, except in the context as described below and not as bands of any sort. There are very indistinct orange spots on the dorsal surface.

In *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* as well as *U. husbandi*, the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands.

The subspecies *U. mensforthi martinekae subsp. nov.* are separated from the nominate form of *U. mensforthi sp. nov.* by having significantly more white spots along the lower flanks, giving a distinctly striped appearance along the lower margins, as well as significant spotting on the lower forelimbs, which is absent in *U. mensforthi sp. nov..*

U. husbandi is similar in most respects to *U. milii,* but is separated from that taxon by being generally purple in colour (versus brownish) and without significant lightening of the front of the snout. There are significant numbers of yellow spots on both upper and lower hind and forelimbs. There are no orange spots of any form on the dorsal surface. As in *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands, but these are not found on the lower body as in *U. milii.*

U. asper is readily separated from the other species by its reddish brown body, including the tail (original tails), the white dorsal spots being arranged into obvious broken crossbands along the length of the body, including very distinct and thickened nuchal bands, in addition to distinct orange spots covering the rest of the dorsal surface. There is significant white spotting on all the limbs, both top and bottom parts. This taxon has a reddish brown tail with whitish crossbands bordered with purple.

U. seorsus is separated from all other species by having unusually small (tiny) pale tubercles on the back of the body and these being scattered evenly (by density and distribution) from neck to the hind limbs, as opposed to being more prominent on the forebody than the rear in the other species (excluding *U. milii* and *U. asper* which have broken crossbands the length of the body). Furthermore there are no obvious nuchal bands, this part of the body at best having widely scattered white spots. The head is notable in being unmarked and purplish in colour, limbs (upper and lower) are well spotted with yellow and the white cross bands on the tail are merely enlarged transversely aligned spots with about 50% of the bands being obvious purple pigment.

Distribution: South-west Western Australia.

Etymology: Named in reflection of the centre of distribution for this species, (namely Perth, Western Australia).

UNDERWOODISAURUS MENSFORTHI SP. NOV.

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number: R2778, collected from Myponga, South Australia, Australia, Latitude -35.38, Longitude 138.47. The South Australian Museum, Adelaide, South Australia, Australia, is a government-owned facility that allows access to its holdings.

Paratypes: 1/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number: R2504, collected from Second Valley, South Australia, Australia, Latitude -35.53, Longitude 138.23.

2/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number: R3017, collected from Normanville, South Australia, Australia, Latitude -35.45, Longitude 138.32.

3/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number: R19956, collected from near Myponga Beach, South Australia, Australia, Latitude -35.37, Longitude 138.38.

Diagnosis: The various taxa within the so-called *U. milii* (Bory de Saint-Vincent, 1835) species complex are separated from one another by the following unique suites of colouration traits:

U. milii are separated from the other species by having a brown body with yellow spots which merge and are arranged into well defined broken dorsal crossbands along the entire length of the body and tail. None of the white crossbands of the black tail have any black or grey pigment, except for the second one, which has limited black or grey pigment within it (original tails). The white crossbands on the tail are without borders.

Nominate *U. mensforthi sp. nov.* is characterised by a distinctly black tail with white cross bands that lack any darker pigment in them (original tails), with a dark brownish body and bright yellow spots on the body, extending onto the hindlimbs and to a limited extent the upper forelimbs. There is significant lightening of the front of the snout. The white spots on the body form a broken reticulated configuration and not as bands of any sort, except in the context as described below and not as bands of any sort. There are very indistinct orange spots on the dorsal surface.

In *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* as well as *U. husbandi*, the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands.

The subspecies *U. mensforthi martinekae subsp. nov.* are separated from the nominate form of *U. mensforthi sp. nov.* by having significantly more white spots along the lower flanks, giving a distinctly striped appearance along the lower margins, as well as significant spotting on the lower forelimbs, which is absent in *U. mensforthi sp. nov.*.

U. husbandi is similar in most respects to *U. milii,* but is separated from that taxon by being generally purple in colour (versus brownish) and without significant lightening of the front of the snout. There are significant numbers of yellow spots on both upper and lower hind and forelimbs. There are no orange spots of any form on the dorsal surface. As in *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands, but these are not found on the lower body as in *U. milii.*

U. asper is readily separated from the other species by its reddish brown body, including the tail (original tails), the white dorsal spots being arranged into obvious broken crossbands along the length of the body, including very distinct and thickened nuchal bands, in addition to distinct orange spots covering the rest of the dorsal surface. There is significant white spotting on all the limbs, both top and bottom parts. This taxon has a reddish brown tail with whitish crossbands bordered with purple.

U. perthensis sp. nov. are readily separated from all other forms by a distinctly blackish hue throughout the body and tail, in association with a dark purplish colouration. Besides the white spots on the body there are also indistinct black spots. The white bars on the tail are broken with black pigment. The white spots at the front of the body do not coalesce to form a nuchal band of any sort. Upper and lower limbs are peppered with white.

U. seorsus is separated from all other species by having unusually small (tiny) pale tubercles on the back of the body and these being scattered evenly (by density and distribution) from neck to the hind limbs, as opposed to being more prominent on the forebody than the rear in the other species (excluding *U. milii* and *U. asper* which have broken crossbands the length of the body). Furthermore there are no obvious nuchal bands, this part of the body at best having widely scattered white spots. The head is notable in being unmarked and purplish in colour, limbs (upper and lower) are well spotted with yellow and the white cross bands on the tail are merely enlarged transversely aligned spots with about 50% of the bands being obvious purple pigment.

The species within Nephruriini *tribe nov.* are separated from all other Carphodactylidae by one of the following two suites of characters: 1/ The (unregenerated) tail ends in a small but distinctive knob (genus *Nephrurus* Günther, 1876), or 2/ The tail does not end in a small but distinctive knob; the claw is between 2 scales, the lower scale may be deeply grooved or even divided to form 3 scales; digits with two rows of lateral scales; tail is swollen without spines and less than twice as broad as thick (genera *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011).

Underwoodisaurus is separated from *Uvidicolus,* this latter genus being the totality of the subtribe Uvidicolina *subtribe nov.* by having the anterior loreals minute, granular and strongly differentiated from the posterior loreals, versus the anterior and posterior loreals being more or less subequal, without marked differentiation anteriorly in *Uvidicolus.*

Distribution: Most of southern Australia, excluding the very far west and far east and north-east. The nominate subspecies *U. mensforthi mensforthi subsp. nov.* is confined the the Eyre Peninsula, Kangaroo Island and Adelaide Hills regions. *U. mensforthi martinekae subsp. nov.* occupies the rest of the range for the species.

Etymology: Named in honour of Ian Mensforth of Adelaide, South Australia, Australia, owner of the business, Ultimate Reptile Supplies, of Burton, South Australia in recognition of a lifetime's work with reptiles and looking after their welfare. This has been mainly via his business selling goods and services to aid reptile keepers, including for example such staples as "anti-mite spray" and other things required to keep captive reptiles in top condition. He has also bred many hundreds of snakes as a breeder, supplying budding herpetologists across Australia, generally supplying healthy reptiles of top quality.

Significantly he supplied Snakebusters: Australia's best reptiles, the first Inland Taipan in the world to have venomoid surgery at end 2004 (the surgery as detailed by Hoser 2014) and that snake remains alive and well and still totally non-venomous as of mid 2016.

It has been used to safely educate many thousands of Australians about the positive aspects of venomous snakes, instead of the "this thing will kill you!" scare campaigns as epitomized by the trash-TV shows of the late Steve Irwin.

UNDERWOODISAURUS MENSFORTHI MARTINEKAE SUBSP. NOV.

Holotype: A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number: D1836 collected at Castlemaine, Victoria, Australia, Latitude -37.07, Longitude 144.22.
The National Museum of Victoria, Melbourne, Victoria, Australia is a government-owned facility that allows access to its holdings.

Paratypes: 1/ A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number: D1837 collected at Castlemaine, Victoria, Australia, Latitude -37.07, Longitude 144.22.

2/ A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number: D48722 collected at Mt. Alexander, near Castlemaine, Victoria, Australia, Latitude -37.07, Longitude 144.30.

3/ A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number: D5327 collected at Mt. Tarrengower, near Castlemaine, Victoria, Australia, Latitude -37.00, Longitude 144.05.

4/ A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number: D54658 collected at Golden Point Road, Chewton, near Castlemaine, Victoria, Australia, Latitude -37.08, Longitude 144.26.

Diagnosis: The various taxa within the so-called *U. milii* (Bory de Saint-Vincent, 1835) species complex are separated from one another by the following unique suites of colouration traits:

U. milii are separated from the other species by having a brown body with yellow spots which merge and are arranged into well defined broken dorsal crossbands along the entire length of the body and tail. None of the white crossbands of the black tail have any black or grey pigment, except for the second one, which has limited black or grey pigment within it (original tails). The white crossbands on the tail are without borders.

Nominate *U. mensforthi sp. nov.* is characterised by a distinctly black tail with white cross bands that lack any darker pigment in them (original tails), with a dark brownish body and bright yellow spots on the body, extending onto the hindlimbs and to a limited extent the upper forelimbs. There is significant lightening of the front of the snout. The white spots on the body form a broken reticulated configuration and not as bands of any sort, except in the context as described below and not as bands of any sort. There are very indistinct orange spots on the dorsal surface.

In *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* as well as *U. husbandi*, the spots on the back of the head and front of the body merge to form a nuchal band and one or

more broken crossbands.

The subspecies *U. mensforthi martinekae subsp. nov.* are separated from the nominate form of *U. mensforthi sp. nov.* by having significantly more white spots along the lower flanks, giving a distinctly striped appearance along the lower margins, as well as significant spotting on the lower forelimbs, which is absent in *U. mensforthi sp. nov.*.

U. husbandi is similar in most respects to *U. milii,* but is separated from that taxon by being generally purple in colour (versus brownish) and without significant lightening of the front of the snout. There are significant numbers of yellow spots on both upper and lower hind and forelimbs. There are no orange spots of any form on the dorsal surface. As in *U. mensforthi sp. nov.* and *U. mensforthi martinekae subsp. nov.* the spots on the back of the head and front of the body merge to form a nuchal band and one or more broken crossbands, but these are not found on the lower body as in *U. milii.*

U. asper is readily separated from the other species by its reddish brown body, including the tail (original tails), the white dorsal spots being arranged into obvious broken crossbands along the length of the body, including very distinct and thickened nuchal bands, in addition to distinct orange spots covering the rest of the dorsal surface. There is significant white spotting on all the limbs, both top and bottom parts. This taxon has a reddish brown tail with whitish crossbands bordered with purple.

U. perthensis sp. nov. are readily separated from all other forms by a distinctly blackish hue throughout the body and tail, in association with a dark purplish colouration. Besides the white spots on the body there are also indistinct black spots. The white bars on the tail are broken with black pigment. The white spots at the front of the body do not coalesce to form a nuchal band of any sort. Upper and lower limbs are peppered with white.

U. seorsus is separated from all other species by having unusually small (tiny) pale tubercles on the back of the body and these being scattered evenly (by density and distribution) from neck to the hind limbs, as opposed to being more prominent on the forebody than the rear in the other species (excluding *U. milii* and *U. asper* which have broken crossbands the length of the body). Furthermore there are no obvious nuchal bands, this part of the body at best having widely scattered white spots. The head is notable in being unmarked and purplish in colour, limbs (upper and lower) are well spotted with yellow and the white cross bands on the tail are merely enlarged transversely aligned spots with about 50% of the bands being obvious purple pigment.

Distribution: *U. mensforthi sp. nov.* occurs in most of southern Australia, excluding the far west and far east and north-east. The nominate subspecies *U. mensforthi mensforthi subsp. nov.* is confined to the Eyre Peninsula, Kangaroo Island and Adelaide Hills regions. *U. mensforthi martinekae subsp. nov.* occupies the rest of the range for the species.

Etymology: Named in honour of former Australian Army Major, Maryann Martinek, now of Bendigo, Victoria, Australia in recognition of her work in reforming unsafe work practices in the Australian defence forces, and in initiating a Royal Commission into rapes and other sexual misconduct in the Australian military.

NEPHRURUS* (*QUAZINEPHRURUS*) *LEVIS BULLIARDI SUBSP. NOV.

Holotype: A preserved specimen at the South Australian Museum (SAM), Adelaide, South Australia, Australia, specimen number: SAM R58994, collected at Maralinga Tjarutja, South Australia, Australia, Latitude -29.13, Longitude 130.24. The South Australian Museum, Adelaide, South Australia, Australia is a government-owned facility that allows access to its holdings.

Paratype: Two preserved specimens at the South Australian Museum (SAM), Adelaide, South Australia, Australia, specimen numbers: SAM R18204 and R57159 collected at Maralinga Tjarutja, South Australia, Australia, Latitude -28.57, Longitude 130.43.

Diagnosis: Until now, *Nephrurus levis bulliardi subsp. nov.* has been treated as the nominate subspecies of *N. levis levis.*

They are readily separated from one another by the configuration of raised white or yellow spots on the upper body. In *N. levis levis* the spots are invariably associated with similar light pigment on the surrounding body scales that is not raised in a form of obvious body patterning in the form of light blotches, irregular banding, thin cross bands or similar. In *N. levis bulliardi subsp. nov.* the spotting on the upper body is effectively restricted to the raised tubercles and not as a part of wider body blotches or patterning. The only exception to this is one or two diagonal bands at the back of the neck (this also being the case in *N. levis levis*), but in *N. levis levis* the bands are found along the entire length of the body and tail).

Both *N. levis bulliardi subsp. nov.* and *N. levis levis* have raised white spots along the flanks, but in *N. levis levis* these are relatively small in number, versus profuse in *N. levis bulliardi subsp. nov.*.

Both *N. levis bulliardi subsp. nov.* and *N. levis levis* have darkening on the dorsal surface of the neck and again on the rump (as patches of colouration), but this is indistinct in *N. levis levis* and obvious in *N. levis bulliardi subsp. nov.*.

The subspecies *N. levis pilbarensis* Storr, 1963 from the northern parts of Pilbara in Western Australia, is separated from the other subspecies by the presence of large scattered granules on the throat and significantly more prominent dark markings than in the other subspecies, perhaps best described as blackish or dark purplish lines or a network that is broken in many places.

The subspecies *N. levis occidentalis* from mid coastal Western Australia is readily identified and separated from the other subspecies by the greater number of raised whitish-yellow spots across the entire body including on the rump (these spots being absent on the rump of the other subspecies, or at best extremely irregular), darker markings as patches on the body, but not purplish or blackish as in *N. levis pilbarensis* and a thick whitish bar connecting the eye to the jaw and extending well beyond the front and back of the eye, with all other subspecies either not having such a patch, or if present, not extending beyond the eye, either frontways or backwards.

The name *N. platyurus* Boulenger, 1886, is a synonym for *N. levis levis* and not available for this new subspecies.

N. levis (all subspecies) are separated from all other *Quazinephrurus subgen. nov.* species by the following suite of characters: There is no vertebral stripe in adults and if one is present in juveniles, there are nine or more longitudinal rows of enlarged tubercles on the tail; the tail is broad and flat and white/yellow spots on the back, if present are represented only by white/yellow tubercles, as opposed to being expanded larger spots, as spots and not including body blotches of similar colour.

Distribution: The region immediately north of the Nullabor Plain in western South Australia and nearby parts of central Australia. The nominate subspecies of *N. levis levis* is herein confined to the arid parts of Eastern Australia, generally east of the Coopers Creek, Lake Eyre drainage and nearby parts of the Northern Territory.

Etymology: Named in honour of Kaj-erik Bulliard of Perth Western Australia, formerly of Sydney, NSW, Australia in recognition of a contribution to herpetology in Australia spanning some decades.

NEPHRURUS* (*NEPHRURUS*) *SHEAI KIMBERLEYAE SUBSP. NOV.

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, specimen number: R43153, collected at the Mitchell Plateau, West Kimberley, Western Australia, Australia, Latitude -14.87, Longitude 125.83. This is a

government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, specimen number: R46782 collected at Prince Regent Nature Reserve, West Kimberley, Western Australia, Australia, Latitude -15.32, Longitude 125.58.

Diagnosis: *N. sheai kimberleyae subsp. nov*. conforms in most respects with *N. sheai sheai*, which it would otherwise be identified as until now. However *N. sheai kimberleyae subsp. nov*. is separated from the nominate subspecies by the presence of well-defined dark etching between the scales on the front of the head and snout. These are either absent or indistinct in *N. sheai sheai.*

Light spots merge on the back to form unbroken or near unbroken dorsal crossbands in *N. sheai kimberleyae subsp. nov.*, whereas in *N. sheai sheai* these spots are more widely spaced so that dorsal crossbands are always broken up to be at best rows of spots.

N. sheai kimberleyae subsp. nov. is depicted on page 267 of Cogger (2014), bottom right image, labelled as "*Nephrurus sheai*" clearly showing the well-defined dark etching between the scales on the front of the head and snout.

The three currently recognized species within the subgenus *Nephrurus* (predating this paper), better known as the classic "Rough-knob-tailed geckos" as defined previously in this paper can be divided as follows: 1/ *N. sheai* Couper, 1994 (including the subspecies, *N. sheai kimberleyae subsp. nov*. formally named within this paper) has digits strongly banded with brown and white: 2/ *N. amyae* Couper, 1994 lacks bands on the digits and has extremely pronounced tubercles on the rump and thighs which are much larger than those covering the rest of the dorsum: 3/ *N. asper* Günther, 1876 (including *N. blacki sp. nov*. and the subspecies *N. asper saxacola subsp. nov*.) lacks prominent bands on the digits and the tubercles on the rump and thighs are small to moderate.

Distribution: *N. sheai kimberleyae subsp. nov*. occurs in the Kimberley division of Western Australia and immediately adjacent parts of the Victoria River Region in the Northern Territory, with the barrier between the populations of the two subspecies being the Daly River System. This is the same biogeographical boundary for the eastern-most part of the range of *Acanthophis lancasteri* Wells and Wellington, 1985 as demonstrated by the evidence of Maddock *et al.* (2015). Nominate *N. sheai sheai* is herein confined to the region east of the Katherine area, including the type locality of Kakadu and nearby parts of the mid Northern Territory.

Etymology: Named in honour of my eldest daughter Adelyn Kimberely Hoser, aged 17 in 2016, in recognition of a lifetime's work with wildlife.

The name Kimberley was taken as it also denotes the region in which the taxon occurs, although the patronym is in honour of Adelyn Kimberely Hoser and the spelling or suffix should not be altered in reflection of the location of the same name unless mandated by the *International Code of Zoological Nomenclature.*

NEPHRURUS* (*NEPHRURUS*) *ASPER SAXACOLA SUBSP. NOV.

Holotype: A preserved specimen in the Queensland Museum, Brisbane, Queensland, Australia, specimen number: J4525 collected at Kuridala, south of Cloncurry, Queensland, Australia, Latitude -21.28, Longitude 140.50.

The Queensland Museum, Brisbane, Queensland, Australia is a government-owned facility that allows access to its holdings by scientists.

Paratype: A preserved specimen in the Queensland Museum, Brisbane, Queensland, Australia, specimen number: J4526 collected at Kuridala, south of Cloncurry, Queensland, Australia, Latitude -21.28, Longitude 140.50.

Diagnosis: *N. asper saxacola subsp. nov*. is readily separated from the nominate form for the species by the following suite of characters: The toes of the front feet are generally light in colour (and without any evidence of prominent banding), versus generally dark in colour in *N. asper asper*. Adults are usually a strong orangeish red colour dorsally, versus brownish grey above in most (but not all) *N. asper asper.* There is significant whitening on the front of the snout, versus none or little in *N. asper* asper, or for that matter nominate *N. amyae* Couper, 1994, which in many respects including dorsal colouration, are superficially similar to this subspecies. Adults of *N. asper saxacola subsp. nov*. are characterised by a very strong and obvious brownish-black flush on the back of the neck, extending along the back to beyond the level of the forelimbs sockets, versus one that is either indistinct or absent in *N. asper asper.* While the morphological differences between this subspecies and the nominate form are obvious, there is at present no genetic evidence to support the contention that this form is sufficiently divergent to be given full species status and hence the description herein as subspecies.

The three currently recognized species within the subgenus *Nephrurus*, better known as the classic "Rough-knob-tailed geckos" as defined previously in this paper can be divided as follows: 1/ *N. sheai* Couper, 1994 (including the subspecies, *N. sheai kimberleyae subsp. nov*. formally named within this paper) has digits strongly banded with brown and white: 2/ *N. amyae* Couper, 1994 lacks bands on the digits and has extremely pronounced tubercles on the rump and thighs which are much larger than those covering the rest of the dorsum: 3/ *N. asper* Günther, 1876 (including *N. blacki sp. nov*. and the subspecies *N. asper saxacola subsp. nov*.) lacks prominent bands on the digits and the tubercles on the rump and thighs are small to moderate.

Couper and Gregson (1994), noted that a specimen, number: R125387 lodged at the Australian Museum in Sydney, Australia, allegedly collected from Cadell Ck, near Hamilton, western QLD had strongly banded toes, this being a diagnostic feature of *N. sheai*. They questioned the validity of the collection data for the specimen.

While unable to shed light on this issue, I can state that I have inspected numerous specimens from this general locality as well as south-east, east, west and north-west of this site and none had strongly banded toes as seen in that specimen (see also the exact diagnosis for the subspecies described herein).

In other words the specimen number: R125387 at the Australian Museum in Sydney is either aberrant or has incorrect locality data.

Distribution: Restricted to the southern Selwyn Ranges south of Mount Isa, north-west Queensland, in a region generally west of the Diamantina River system west of Winton, Queensland and east of the associated Georgina River System. Those specimens found east of this range (excluding those on far north Cape York) are referred to the nominate subspecies.

Etymology: Named in reflection of the saxacoline (rock dwelling) habits of the subspecies.

NOTES ON THE DESCRIPTIONS FOR ANY POTENTIAL REVISERS

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. Should one or more newly named taxa be merged by later authors to be treated as a single genus or species, the order of prority of retention of names should be the order as listed in the keywords part of the abstract.

Key to the species of *Underwoodisaurus* Wermuth, 1965.

1/ A/ Well defined broken cross-bands formed by merged white spots along length of body ... 2
B/ Broken cross-bands only on neck region or absent ... 3
2/ A/ Reddish brown tail with whitish cross-bands bordered with purple ... *U. asper.*
B/ Black tail with white cross-bands without borders ... *U. milii*
3/ A/ Head a uniform purplish colour ... *U. seorsus.*
B/ Head not a uniform purplish colour ... 4.
4/ A/ No obvious broken nuchal bands composed of yellow spots or merged spots and/or indistinct black spots on the body ... *U. perthensis sp. nov.*
B/ Broken nuchal bands composed of yellow spots or merged spots ... 5.
5/ A/ No indistinct orange spots on the surface ... *U. husbandi.*
B/ Indistinct orange spots on the dorsal surface ... 6
6/ A/ Significant spotting on the lower forelimbs ... *U. mensforthi martinekae subsp. nov.*
B/ Little if any spotting on the lower forelimbs ... *U. mensforthi mensforthi subsp. nov.*

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CONFLICT OF INTEREST

The author has no known conflicts of interest in terms of this paper and conclusions within.

Carphodactylidae: Revised arrangement and content.

CARPHODACTYLIDAE

TRIBE CARPHODACTYLINI *TRIBE NOV.*

Content: *Carphodactylus* Günther, 1897 (monotypic).

Genus: *Carphodactylus* Günther, 1897.

Content: *Carphodactylus laevis* Günther, 1897 (type species); *C. hoserae sp. nov.*

TRIBE ORRAYINI *TRIBE NOV.*

Content: *Orraya* Couper, Covacevich, Schneider and Hoskin, 2000 (monotypic).

Genus: *Orraya* Couper, Covacevich, Schneider and Hoskin, 2000.

Content: *Orraya occulta* (Couper, Covacevich and Moritz, 1993).

TRIBE NEPHRURIINI *TRIBE NOV.*

Content: *Nephrurus* Günther, 1876; *Underwoodisaurus* Wermuth, 1965; *Uvidicolus* Oliver and Bauer, 2011.

SUBTRIBE NEPHRURIINA *SUBTRIBE NOV.*

Content: *Nephrurus* Günther, 1876; *Underwoodisaurus* Wermuth, 1965.

Genus: *Nephrurus* Günther, 1876.

Content (Subgenera): *Nephrurus* Günther, 1876; *Quazinephrurus subgen. nov.*; *Paranephrurus subgen. nov.*.

Hoser 2016 - Australasian Journal of Herpetology 32:3-25.

Subgenus *Nephrurus* Günther, 1876.

Content: *Nephrurus asper* Günther, 1876 (type species); *N. amyae* Couper, 1994; *N. blacki sp. nov.*; *N. sheai* Couper, 1994.

Subgenus: *Quazinephrurus subgen. nov.*

Content: *Nephrurus* (*Quazinephrurus*) *levis* De Vis, 1886 (type species); *N.* (*Quazinephrurus*) *coreyrentoni sp. nov.*; *N.* (*Quazinephrurus*) *deleani* Harvey, 1983; *N.* (*Quazinephrurus*) *ianrentoni sp. nov.*; *N.* (*Quazinephrurus*) *laevissimus* Mertens, 1958; *N.* (*Quazinephrurus*) *occidentalis* Storr, 1963; *N.* (*Quazinephrurus*) *stellatus* Storr, 1968; *N.* (*Quazinephrurus*) *vertebralis* Storr, 1963.

Subgenus: *Paranephrurus subgen. nov.*

Content: *Nephrurus* (*Paranephrurus*) *wheeleri* Loveridge, 1932 (type species); *N.* (*Paranephrurus*) *cinctus* Storr, 1963.

Genus *Underwoodisaurus* Wermuth, 1965.

Content: *Underwoodisaurus milii* (Bory de Saint-Vincent, 1825) (type species); *U. asper* (Boulenger, 1913); *U. husbandi* Wells and Wellington (1983); *U. mensforthi sp. nov.*; *U. perthensis sp. nov.*; *U. seorsus* Doughty and Oliver, 2011.

SUBTRIBE *UVIDICOLINA SUBTRIBE NOV.*

Content: *Uvidicolus* Oliver and Bauer, 2011.

Genus: *Uvidicolus* Oliver and Bauer, 2011.

Content: *Uvidicolus sphyrurus* (Ogilby, 1892) (type species); *U. covacevichae sp. nov.*

TRIBE SHIREENGECKIINI *TRIBE NOV.*

Content: *Shireengecko gen. nov.*; *Couperus gen. nov.*; *Oxygecko gen. nov.*; *Phyllurus* Schinz, 1822; *Saltuarius* Couper, Covacevich and Moritz, 1993; *Teesgecko gen. nov.*.

SUBTRIBE OXYGECKOINA *SUBTRIBE NOV.*

Content: *Oxygecko gen. nov.*; *Couperus gen. nov.*; *Phyllurus* Schinz, 1822; *Teesgecko gen. nov.*.

Genus: *Oxygecko gen. nov.*

Content: *Oxygecko amnicola* (Hoskin, Couper, Schneider and Covacevich, 2000) (type species); *O. gulbaru* (Hoskin, Couper and Schneider, 2003).

Genus: *Couperus gen. nov.*

Content: *Couperus caudiannulatus* (Covacevich, 1975); *C. kabikabi* (Couper, Hamley and Hoskin, 2008).

Genus *Phyllurus* Schinz, 1822.

Content: *Phyllurus platurus* (White ex Shaw, 1790) (monotypic at present).

Genus: *Teesgecko gen. nov.*

Content: *Teesgecko nepthys* (Couper, Covacevich and Moritz, 1993) (type species); *T. championae* (Schneider, Couper, Hoskin and Covacevich, 2000); *T. isis* (Couper, Covacevich and Moritz, 1993); *T. ossa* (Couper, Covacevich and Moritz, 1993).

SUBTRIBE SHIREENGECKIINA *SUBTRIBE NOV.*

Content: *Shireengecko gen. nov.*; *Saltuarius* Couper, Covacevich and Moritz, 1993.

Genus: *Shireengecko gen. nov.*

Content (Subgenera): *Shireengecko subgen. nov.*; *Quazishireengecko subgen. nov.*.

Subgenus: *Shireengecko subgen. nov.*

Content: *Shireengecko* (*Shireengecko*) *wyperba* Couper, Schneider and Covacevich, 1997 (type species); *S.* (*Shireengecko*) *kateae* (Couper, Sadlier, Shea and Worthington Wilmer, 2008); *S.* (*Shireengecko*) *moritzi* (Couper, Sadlier, Shea and Worthington Wilmer, 2008).

Subgenus: *Quazishireengecko subgen. nov.*

Content: *S.* (*Quazishireengecko*) *swaini* (Wells and Wellington, 1985) (monotypic).

Genus: *Saltuarius* Couper, Covacevich and Moritz, 1993.

Content (Subgenera): *Saltuarius* Couper, Covacevich and Moritz, 1993; *Quazisaltuarius subgen. nov.*.

Subgenus: *Saltuarius* Couper, Covacevich and Moritz, 1993.

Content: *Saltuarius* (*Saltuarius*) *cornutus* (Ogilby, 1892) (type species); *S.* (*Saltuarius*) *adelynae sp. nov.*; *S. eximius* Hoskin and Couper, 2013.

Subgenus: *Quazisaltuarius subgen. nov.*.

Content: *S.* (*Quazisaltuarius*) *salebrosus* (Covacevich, 1975); *S.* (*Quazisaltuarius*) *jackyae sp. nov.*.