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An unexpected case of cannibalism involving two skinks in the genus *Liopholis* Fitzinger, 1843 and the formal description of a new subspecies in the *L. whitii* Lacépède, 1804 species complex.

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ABSTRACT

Australian skinks of the genus *Liopholis* Fitzinger, 1843 are well known to most Australian herpetologists, because they are widespread, large and common.

In Eastern Australia, most are referred to the species *L. whitii* Lacépède, 1804, although numerous regional forms have been formally described and named. Unfortunately the various papers naming these forms have failed to either provide appropriate synonym lists for relevant taxa, suitable diagnostic features that separate the putative taxa or both. The result being that no texts including the most recent treatises of the group (Cogger 2014, or Wilson and Swan 2017) have properly defined or separated the various similar forms, in that diagnostic characters purported to separate the various purported taxa simply do not. They invariably rely on claims of colour variations which simply are not consistent or hold true, even within a single location. Notwithstanding the preceding, molecular evidence (e.g. Chapple *et al.* 2008, Pyron *et al.* 2013) confirms that several morphologically similar, yet valid species and subspecies are being confused with one another. One of the more divergent forms within the complex from Tasmania remains undescribed and so it is formally named as a subspecies of *E. whitii* according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) herein.

Hoser (1989) reported that *L. whitii* Lacépède, 1804 often lives in groups consisting of 2-3 individuals, sometimes sharing the same rock as a retreat. Contrary to this observation, this paper reports on an unexpected case of cannibalism between two *L. whitii* complex skinks from near Kinglake in Victoria.

Keywords: Skink; *Liopholis*; *whitii*; *montana*; Victoria; Tasmania; Kinglake; Whittlesea; Humevale; Australia; cannibalism; new subspecies; *dannygoodwini*.

INTRODUCTION

Australian skinks of the genus *Liopholis* Fitzinger, 1843 are well known to most Australian herpetologists, because they are widespread, large and common.

In Eastern Australia, most are referred to the species *L. whitii* Lacépède, 1804, as done by Hoser (1989), although numerous regional forms have been formally described and named (see Cogger *et al.* 1983, Wells and Wellington 1985 and Donnellan *et al.* 2002). Unfortunately the various papers naming these forms have failed to either provide appropriate synonym lists for relevant taxa, suitable diagnostic features that separate the putative taxa or both. The result being that no texts including the most recent treatises of the group (Cogger 2014, or Wilson and Swan 2017) have properly defined or separated the various similar forms, in that diagnostic characters purported to separate the various purported taxa simply do not. They invariably rely on claims of colour variations which simply are not consistent or hold true even within a single location.

Notwithstanding the preceding, molecular evidence (e.g. Chapple *et al.* 2008, Pyron *et al.* 2013) confirms that several morphologically similar, yet valid species are being confused with one another.

Hoser (1989) reported that *L. whitii* Lacépède, 1804 is often

found in groups of 2 or 3 individuals of different ages, sometimes sharing the same rock as a retreat. The statement was based on observations involving specimens at Cowan, New South Wales in Kurringai Chase National Park (east of the north-south railway line, near Jerusalem Bay) and also at Heathcote National Park, at Waterfall, New South Wales, west of the north-south railway line, to the west of Lake Toolooma.

In both locations skinks of ages ranging from juvenile to adult were found on several occasions sharing a single large rock as a refuge, or fleeing into a single rock crevice.

No observations of antagonistic behaviour between specimens occurred.

One widely divergent form within the *L. whitii* species group is also formally named within this paper as a new subspecies.

MATERIALS AND METHODS

As a licensed snake controller in Victoria, I attend locations to remove venomous snakes perceived to be a risk to people or pets. Opportunistic observations of wildlife are made and exceptional cases recorded. This paper refers to one such incident.

In the process of seeking to identify the relevant species involved, it emerged that a divergent subspecies within the *L.*

whitii species complex from Tasmania remained unnamed and so it is formally described according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) within this paper.

RESULTS

Contrary to the earlier observations of group social interaction within the *L. whitii* species complex by myself, this paper reports on an unexpected case of cannibalism between two *L. whitii* complex skinks from near Kinglake in Victoria.

In September 2015, I was called to attend a site 250 metres east of 655 Whittlesea-Kinglake Road, Humevale, on the northern outskirts of Melbourne, Victoria, Australia. People working for the phone company Telstra had seen a large unidentified snake, most likely a Copperhead *Austrelaps superbus* (Günther, 1858), in the area they were working in and had called me to come and remove it.

The site was within a roadside reservation between the main bitumen road and fenced farm paddocks to the north. A search for the snake failed to locate it, which was not surprising as it turned out that the workmen had seen it some days prior.

The delay in myself attending the site was due to a delay in the Telstra line of communication and not through any delays at my end. In fact I attended the site immediately when called to on the basis I was told that the snake was present, not moving and waiting to be caught! However as part of the checking process a number of small to medium sized rocks were lifted to see if any snakes were hiding under them.

From underneath two separate rocks in fairly close proximity were recovered two *L. whitii* complex skinks of similar appearance, one clearly being young born the previous summer and the other an unsexed adult.

They were presumably one or other of *L. whitii*, *L. coplandi* Wells and Wellington, 1985, *L. montana* (Donnellan, Hutchinson, Dempsey and Osborne, 2002) or potentially even an undescribed species, based on capture location.

Both were placed in a large plastic tub immediately after capture for the purpose of being photographed and released. Within a few minutes I opened the container to throw in a centipede to be retained and fed to frogs we use in Australia's only hands on reptile shows and at the same time saw the end of the tail of the younger lizard protruding from the mouth of the adult lizard as it continued to eat it.

I grabbed the larger lizard and it regurgitated the smaller one.

A photo of the larger lizard appears on the cover of this issue (issue 38) of *Australasian Journal of Herpetology*.

DISCUSSION

While it could be speculated that the presence of two lizards in the confined space of a plastic container was the sole cause of the cannibalistic behaviour by the larger lizard, I doubt this to be the case. The only obvious variable I could see would be that there was a greater chance of the young lizard being caught and eaten in the confines of a plastic tub, as opposed to in the wild outside of the tub.

That the two lizards occupied separate rocks in close proximity when found, also leads one to assume that for the smaller lizard at least, it had chosen to hide away from a larger lizard likely to eat it.

Noting that the placing of a wild lizard into a plastic tub is stressful for it, it is slightly surprising that in the face of this stress, it still chose to eat the smaller lizard. Again this implies that the attack was normal for the individual of the species and not an aberrant act of cannibalism.

Because multiple individuals of varying age of this species group have been found in proximity without apparent incident around Sydney, New South Wales, cannibalism may not be common practice in the *L. whitii* complex in some areas and yet occurring elsewhere.

Based on molecular evidence, the central Victorian populations of *E. whitii* are also believed to be a divergent clade to those

from Sydney, New South Wales and so this may in part also explain the seemingly different behaviour observed.

If a herpetologist could access sufficient numbers of specimens from various locations and get ethics approvals from wildlife authorities, it would be an interesting study indeed to see what causes acts of cannibalism in *L. whitii* complex species and if this behaviour is the same between populations and clades.

Furthermore, while there have been a number of taxonomic studies and summaries of the *L. whitii* complex species including Cogger *et al.* (1983), Chapple and Scott Keogh (2004), Chapple *et al.* (2005, 2008), Donnellan *et al.* (2002), Gardner *et al.* (2008), Storr (1968) and Wells and Wellington (1984, 1985) the taxonomy of the complex is far from resolved and certain due to a lack of sampling from nay localities relevant species occur. Due to the relative abundance of the species involved, a revisiting of the taxonomy of the group, based on both molecular and morphological evidence should be a priority.

Notwithstanding the preceding comments, the Tasmanian population of *L. whitii* is significantly divergent from the typical form from kangaroo Island, South Australia, or those described and named from New South Wales, including forms in Victoria related to the nominate types from South Australia or New South Wales.

It is therefore formally described herein as a new subspecies, *L. dannygoodwini* sp. nov.

LIOPHOLIS DANNYGOODWINI SUBSP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number: R.88446 collected 11.3 km East of Campbell Town, via Road, Tasmania, Australia, Latitude -41.95 S., Longitude 147.62 E. The Australian Museum in Sydney allows access to its holdings.

Paratype: A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number: R.66604, collected at Freycinet Peninsula, Tasmania, Australia, Latitude -42.20 S., Longitude 148.316 E.

Diagnosis: *Liopholis dannygoodwini* subsp. nov. is similar in most respects to the described species *L. whitii* (Lacépède, 1804), *L. compressicaudus* (Quoy and Giamard, 1824), *L. coplandi* Wells and Wellington, 1985, *L. montana* Donnellan *et al.* (2002), *L. messeli* Wells and Wellington, 1985 and *L. multiscutatus* (Mitchell and Behrndt, 1949), some of the preceding of which may be conspecific.

L. dannygoodwini subsp. nov. is however readily separated from all the above species by the presence of ivory white labials under the eye and posterior to it, with thick black etching around each white blotch, usually numbering three large irregular-shaped white blotches, combined with significant reddening towards the end of the original tail, as well as a dorsal pattern including a series of longitudinal markings incorporating brown and grey dorsolateral stripes, black zones and numerous whitish or cream spots arranged in a linear manner on the dorsum and upper flanks. There are no specimens or morphs of this species that have the so-called plain back, being a uniform brown or grey in colour as seen in the other species.

While the other species commonly have white upper labials, the distinctive thick dark black etching of the rear ones is not seen as in *L. dannygoodwini* subsp. nov..

The Tasmanian subspecies *L. dannygoodwini* subsp. nov. reaches a snout-vent length in adults of 85 mm, versus 95 mm in most of the other species.

Distribution: Most of Tasmania, except for the far south, including immediately adjacent offshore islands to the north and east and invariably found in or near rocky situations, although like most other reptiles will happily seek out and live in human rubbish such as sheets of tin.

Etymology: Named in honour of Danny Goodwin of Inverloch, Victoria, Australia, formerly of Tasmania, Australia and Worri Yallock, Victoria, Australia in recognition of his services to herpetology over some decades.

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CONFLICT OF INTEREST
There are no conflicts of interest in terms of this paper.

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A significant improvement to the taxonomy of the gecko genus *Gekko* Laurenti, 1768 *sensu lato* to better reflect morphological diversity and ancient divergence within the group.

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Received 29 March 2017, Accepted 15 June 2018, Published 10 August 2018.

ABSTRACT

The Asian gecko genus *Gekko* Laurenti, 1768 as recognized by most herpetologists in 2018 includes a significant array of sometimes large and spectacular species. About 60 described forms are currently recognized as species. However others await resurrection from synonymy or formal scientific description for the first time, meaning that as of 2018, species diversity is underestimated.

Various phylogenies published in the past decade (e.g. Heinicke *et al.* 2012, Pyron *et al.* 2013, Oliver *et al.* 2017) have shown the genus *Gekko* to be of ancient origin and other morphologically similar genera to place within the *Gekko* tree.

Even species within *Gekko sensu stricto* Heinicke *et al.* (2012) show divergence between taxa in excess of 50 MYA., while Oliver *et al.* (2017) claim divergences well in excess of 30 MYA.

Rather than merge dozens more disparate species into an even greater-sized genus, this paper is one of a series dividing the complex of genera into monophyletic species groups at the genus level based on divergence and morphology. The division of groups in this and other papers published at the same time dealing with the complex is extremely conservative relative to dates of divergence splits in other widely recognized reptile genera

This paper deals with the genus *Gekko* Laurenti, 1768 as currently recognized, excluding those species closely associated with the taxon originally described as *Gekko vittatus* Houttuyn, 1782, which is dealt with in another paper.

In summary the genus *Gekko* is herein split along lines similar to the species groups identified by Rösler *et al.* (2011), with the most divergent groups being treated as genera and subgenera. The result is 6 genera (including the *Gekko vittatus* Houttuyn, 1782 species group) and further subgenera.

Four genera and six subgenera are formally named for the first time according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Keywords: Gecko; taxonomy; reptile; nomenclature; Asia; *Gekko*; *Luperosaurus*; *Pseudogekko*; *Lepidodactylus*; *Ptychozoon*; *Scelotretus*; new genus; *Sparsuscolotes*; *Lautusdigituscolotes*; *Magnaocellus*; *Extentusventersquamus*; New subgenus; *Sinogekko*; *Aurumgekko*; *Glanduliscrusgekko*; *Cavernagekko*; *Foderetdorsumgekko*.

INTRODUCTION

The Asian gecko genus *Gekko* Laurenti, 1768 as recognized by most herpetologists in 2018 includes a significant array of sometimes large and spectacular species. About 60 described forms are currently recognized as species. However others await resurrection from synonymy or formal scientific description for the first time, meaning that species diversity of the genus as recognized is underestimated.

This paper arose out of a global audit of the planet's herpetofauna, including the geckos, with a view to correcting the genus-level classification in light of information that has emerged in the past century.

Since the publication of major texts by Boulenger and contemporaries at the end of the 1800's, much of the genus-

level taxonomy of the world's reptiles has not been changed or updated to better reflect phylogeny and divergences between groups of species.

To that end, various phylogenies published in the past decade (e.g. Heinicke *et al.* 2012 or Pyron *et al.* 2013) have shown the genus *Gekko* as recognized in 2018 to be of ancient origin and other morphologically similar genera to place within the *Gekko* tree.

Even within *Gekko sensu stricto* Heinicke *et al.* (2012) show divergence between taxa in excess of 50 MYA, while Oliver *et al.* (2017) claim divergences in excess of 30 MYA.

Rather than merge dozens more disparate species into an even greater-sized genus, this paper is one of a series dividing the

complex of genera into monophyletic species groups at the genus level based on divergence and morphology. The division of groups in this and other papers published at the same time dealing with the complex is extremely conservative relative to divergence splits in other reptile genera as recognized by most herpetologists in 2018.

This paper effectively deals with the genus *Gekko* Laurenti, 1768 as currently recognized, excluding those species closely associated with the taxon originally described as *Gekko vittatus* Houttuyn, 1782, which is dealt with in another paper.

That species group have also been associated with species in the putative genus *Luperosaurus* Gray, 1845, with it in fact not being particularly close to either the main *Gekko* or *Luperosaurus* lineages.

In summary the genus *Gekko* is herein split along lines similar to the species groups identified by Rösler *et al.* (2011), with the most divergent groups being treated as genera and subgenera. The result is approximately 6 genera and further subgenera. A number are formally named for the first time according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

MATERIALS, METHODS AND RESULTS

These are inferred in both the abstract and introduction, but as a matter of trite I spell them out in a little more explicit detail.

The available literature was examined relevant to the genus *Gekko*, as well as closely related genus groups, such as *Lepidodactylus* Fitzinger, 1843, *Luperosaurus* Gray, 1845, *Pseudogekko* Taylor, 1922 and *Ptychozoon* Kuhl and van Hasselt, 1822 as defined by most authors in the previous 200 years. Those putative genera are dealt with in papers published at the same time as this paper.

Additional to this has been inspection of specimens as required and possible in order to ascertain the classification of the genera and all known species within them.

Available information in the form of photos of specimens with good available data and other information was also utilized in this study.

As an intellectual exercise it was straight forward and while there is a vast body of available literature relied upon in terms of the conclusions herein, the final configuration of genera and species laid out herein can be effectively found in the more recent molecular studies such as Heinicke *et al.* (2012), Pyron *et al.* (2013) and Rösler *et al.* (2011).

Those studies effectively painted the road map for the genus level arrangement herein, which also happens to match the morphological divergences of each group and characters common to each.

Gekko Laurenti, 1768 *sensu lato* is split into six genera, including the *G. vittatus* group, which is placed in the genus *Scelotretus* Fitzinger, 1843. Four other genera are formally named for the first time according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Further subgenera are also formally named for the first time.

During the course of this audit, I became aware of several undescribed species within *Gekko* Laurenti, 1768 *sensu lato* in the south-east Asian realm. I have however deferred naming any of these taxa as I was informed of others intending to name them and I respect their position.

The *International Code of Zoological Nomenclature* fourth edition (Ride *et al.* 1999) recommends such naming actions to be taken within 12 months of statement of intent.

While a vast body of literature was audited to confirm the genus-level arrangement herein, I only cite the most significant ones here as these alone adequately support the taxonomy within this paper.

Key sources relied upon to corroborate the split of *Gekko sensu lato* as done herein include the following: Anderson (1871), Auliya (2006), Bauer *et al.* (2008), Bobrov and Semenov (2008), Bonetti (2002), Boulenger (1885, 1886, 1887a, 1887b, 1907),

Brown (1902), Brown *et al.* (2008, 2009, 2011, 2012), Brown and Alcalá (1962, 1978), Das (2004), De Lisle *et al.* (2013), de Rooij (1915), Duméril and Bibron (1836), Fitzinger (1843), Gaulke (2010, 2011), Goris and Maeda (2004), Gray (1831, 1842, 1845), Grismer (2011), Grossmann (2004, 2006), Grossmann and Ulber (1990), Günther (1864, 1867, 1888), Günther (1994), Han *et al.* (2001), Heinicke *et al.* (2012), Hofmann (2009), Houttuyn (1782), Jono *et al.* (2015), Kluge (2001), Koch (2012), Koch *et al.* (2009), Kraus (2009), Laurenti, (1768), Lin and Yao (2016), Linkem *et al.* (2010), Linnaeus (1758), Luu *et al.* (2014, 2015, 2017), Manthey and Grossman (1997), Matsui and Okada (1968), McCoy (2006, 2015), Meiri *et al.* (2017), Mertens (1955), Ngo and Gamble (2010, 2011), Ngo *et al.* (2009, 2015), Nguyen *et al.* (2010a, 2010b, 2013), Okada and Okawa (1994), Okada (1956), Oliver and Huggall (2017), Oliver *et al.* (2017), Oshima (1912), Ota and Nabhitabhata (1991), Ota *et al.* (1991, 1995), Panitvong *et al.* (2010), Phung and Ziegler (2011), Pope (1928, 1935), Pyron *et al.* (2013), Ride *et al.* (1999), Rösler (2000, 2001, 2005a, 2005b, 2017), Rösler and Tiedemann (2007), Rösler *et al.* (2004, 2005, 2006, 2011, 2012), Russell (1979), Sang (2010), Sang *et al.* (2009), Schmidt (1927), Schneider (1979), Shang (2001), Shaw and Nodder (1992), Shcherbak and Nekrasova (1994), Sluiter (1893), Smedley (1931), Smith (1923a, 1923b, 1935), Song (1985), Stejneger (1907a, 1907b), Swinhoe (1863), Taylor (1919, 1922a, 1922b, 1925, 1944, 1962, 1963), Toda and Hikida (2011), Toda *et al.* (1997, 2001a, 2001b, 2008), Tytler (1865), Unterhössel (1902), Utsunomiya *et al.* (1996), Vesely (1999), Vogt (1922), Vogel (2014), Wermuth (1965), Woerdeman (1919), Yang (2015), Yang *et al.* (2012), Zhang (1986), Zhang *et al.* (2014), Zhao and Adler (1993), Zhou and Liu (1982), Zhou and Wang (2008) and sources cited therein.

In terms of the nomenclature adopted within this paper, the following points should also be noted.

Spellings of new names should not be altered in any way unless absolutely mandatory according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999). Gender or alleged gender of names should not be altered unless mandatory. In the unlikely event that a later author or so-called "first reviser" seeks to merge named taxa, then the name to be used should be that first used in this paper, as dictated by page priority and order in the keywords of the abstract. Material may be repeated in sequential descriptions in order to ensure that each complies wholly with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Most of the diagnostic information for each species group identified as newly named genera herein has been taken directly from Rösler *et al.* (2011) or modified from it.

In colloquial terms, there is no need to re-invent the wheel!

As the primary source of this diagnostic information is cited in the correct way, any allegations of plagiarism by pseudoscientists such as Wolfgang Wüster as detailed by Hoser (2015a-f) cannot be sustained.

GENUS *Gekko* LAURENTI, 1768.

Type species: *Gekko verticillatus* Laurenti, 1768, now known as *Gekko gekko* (Laurenti, 1768).

Diagnosis: Species within the genus *Gekko sensu lato*, including all the other genera identified within this paper, until now treated as being within *Gekko* are separated from all other gekkoes by the following suite of characters: SVL 50-191 mm; snout-vent length being the same or smaller than tail length; head dorsoventrally depressed, but to different degrees depending on species; head distinctly set off from neck; snout concave in region of the paired nasals and single frontal; body cylindrical to slightly dorsoventrally depressed; belly flat; hind limbs larger than fore limbs; tibia longer than forearm; webbing between toes from rudimentary to distinct; head, body, limbs and tail without significant skin flaps; tail base not or only slightly

thickened; tail base round or slightly dorsoventrally depressed; unregenerated tail with more or less distinct whorls; rostral wider than long; nares with or without rostral contact, mostly surrounded by 3 (2-4) nasals; ciliary spines present or lacking; rostral wider than mental; two enlarged postmentals present in most cases; tubercles on head, body, limbs and dorsal tail surface present or lacking; dorsals granular; ventrals flat, imbricate; lateral folds

slightly developed (i.e. discernible transition from large and flat ventrals towards smaller and more or less raised lateral scales); lateral folds without tubercles (except for *G. vittatus* and associated species herein placed in the genus *Scelotretus* Fitzinger, 1843); toes apically extended, with undivided, broadened subdigital lamellae; fingers and toes except for digit one of both manus and pes (hind foot) with apical, dorsal claws; dorsum of finger one and toe one with apically enlarged scale; subcaudals distinctly enlarged (medially subdivided in different degrees according to species), arranged in a longitudinal row; subcaudals with repeating arrangement of two slightly and one greatly widened plates or with subcaudals slightly or not widened; hemipenis is elongate, apically divided and with two lobes of same size; sulcus spermaticus bordered by voluminous skin bulges; small to large calyces with smooth or denticulated seams (Unterhössel 1902, Zhang 1986, Utsunomiya *et al.* 1996, Shang 2001, Rösler *et al.* 2005); eyes covered by transparent brille; pupil vertical when iris is closed; anteriorly and posteriorly denticulated pupil margins.

Base coloration is mainly brown in different degrees, combined with gray, yellow, green and red, with only a few species with uniform gray, brown or green base coloration. Head with or without pattern (most often Y- or W-shaped patterns). Dorsum mainly with bands or flecks, some species also show symmetrical or asymmetrical light dorsal blotches. Striped pattern rare (e.g. *Scelotretus* Fitzinger, 1843). Tail more or less banded. Juveniles usually with distinct, strongly contrasting light and dark tail bands. Embryo with paired egg teeth in apical contact (Sluiter 1893, Woerdeman 1919).

Species within the genus *Gekko* as defined herein are those that conform with the so-called *Gekko gekko* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* by the following suite of characters: 150.0-191.0 mm SVL; nares, except for *G. verreauxi* Tytler, 1865, not in contact with rostral; nasals 3-6; postmentals relatively low (largest in *G. siamensis* Grossmann and Ulber, 1990), dorsal tubercle rows 10-19; precloacal pores 10-16; postcloacal tubercles 2-4 (rarely single); webbing between fingers and toes lacking; tubercles present on fore and hind limbs; lateral fold without tubercles; subcaudals enlarged, in two parallel rows; iris yellow, green, blue or brick red; Y-shaped head pattern usually discernible; light (white), more or less transversally arranged, symmetrical dorsal and lateral blotches.

Distribution: From India and Nepal to China, southwards to Indonesia (Rösler *et al.* 2011). Feral populations exist in the Caribbean, in Belize, on Hawaii and in Florida (Kraus 2009).

Content: *Gekko gekko* (Linnaeus, 1758) (type species); *G. albobasialis* (Günther, 1867); *G. nutaphandi* Bauer, Sumontha and Pauwels, 2008; *G. reevesii* (Gray, 1831); *G. siamensis* Grossmann and Ulber, 1990; *G. smithii* Gray, 1842; *G. verreauxi* Tytler, 1865.

GENUS *SPARSUSCOLOTES* GEN. NOV.

Type species: *Platydactylus japonicus* Schlegel, 1836.

Diagnosis: Species within the genus *Sparsuscolotes* gen. nov. as defined herein are those that conform with the so-called *Gekko japonicus* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper, by the following suite of characters: 58.9-99.2 mm SVL; nares in contact with rostral (except for *S. auriverrucosus*); nasals 3 (rarely 2 in *S. chinensis*); postmentals relatively small (except in

S. similignum), largest in *S. canhi*, *S. chinensis*, *S. palmatus*, *S. scientiadventura*; 0-21 dorsal tubercle rows; 0-32 precloacal pores; postcloacal tubercles 1-4; webbing between fingers and toes weakly developed to extensive (*S. chinensis*, *S. melli*, *S. palmatus*, *S. scientiadventura*, *S. similignum*, *S. subpalmatus*); tubercles present on fore and hind limbs, hind limbs only, or lacking all together; lateral fold without tubercles; subcaudals enlarged, in a longitudinal row (in *S. yakuensis* medially subdivided); head pattern present or not, without figure-shape (UU- to W-shaped in *S. melli* and W-shaped in *S. scientiadventura*); vertebral region with relatively large, light flecks, blotches or bands.

Species within the genus *Gekko sensu lato*, including all the other genera identified within this paper, until now treated as being within *Gekko* are separated from all other geckoes by the following suite of characters: SVL 50-191 mm; snout-vent length being the same or smaller than tail length; head dorsoventrally depressed, but to different degrees depending on species; head distinctly set off from neck; snout concave in region of the paired nasals and single frontal; body cylindrical to

slightly dorsoventrally depressed; belly flat; hind limbs larger than fore limbs; tibia longer than forearm; webbing between toes from rudimentary to distinct; head, body, limbs and tail without significant skin flaps; tail base not or only slightly thickened; tail base round or slightly dorsoventrally depressed; unregenerated tail with more or less distinct whorls; rostral wider than long; nares with or without rostral contact, mostly surrounded by 3 (2-4) nasals; ciliary spines present or lacking; rostral wider than mental; two enlarged postmentals present in most cases; tubercles on head, body, limbs and dorsal tail surface present or lacking; dorsals granular; ventrals flat, imbricate; lateral folds

slightly developed (i.e. discernible transition from large and flat ventrals towards smaller and more or less raised lateral scales); lateral folds without tubercles (except for *G. vittatus* and associated species herein placed in the genus *Scelotretus* Fitzinger, 1843); toes apically extended, with undivided, broadened subdigital lamellae; fingers and toes except for digit one of both manus and pes (hind foot) with apical, dorsal claws; dorsum of finger one and toe one with apically enlarged scale; subcaudals distinctly enlarged (medially subdivided in different degrees according to species), arranged in a longitudinal row; subcaudals with repeating arrangement of two slightly and one greatly widened plates or with subcaudals slightly or not widened; hemipenis is elongate, apically divided and with two lobes of same size; sulcus spermaticus bordered by voluminous skin bulges; small to large calyces with smooth or denticulated seams (Unterhössel 1902, Zhang 1986, Utsunomiya *et al.* 1996, Shang 2001, Rösler *et al.* 2005); eyes covered by transparent brille; pupil vertical when iris is closed; anteriorly and posteriorly denticulated pupil margins.

Base coloration is mainly brown in different degrees, combined with gray, yellow, green and red, with only a few species with uniform gray, brown or green base coloration. Head with or without pattern (most often Y- or W-shaped patterns). Dorsum mainly with bands or flecks, some species also show symmetrical or asymmetrical light dorsal blotches. Striped pattern rare (e.g. *Scelotretus* Fitzinger, 1843). Tail more or less banded. Juveniles usually with distinct, strongly contrasting light and dark tail bands. Embryo with paired egg teeth in apical contact (Sluiter 1893, Woerdeman 1919).

Distribution: China, Japan, Korea, Taiwan and Vietnam including offshore islands; possibly Laos (Rösler *et al.* 2011).

Etymology: *Sparsuscolotes* is Latin for mottled gecko, in reflection of the common dorsal patterning of most species.

Content: *Sparsuscolotes japonicus* (Schlegel, 1836) (type species); *S. aaronbaueri* (Tri, Thai, Phimvohan, David and Teynié, 2015); *S. adleri* (Nguyen, Wang, Yang, Lehmann, Le, Ziegler and Bonkowski, 2013); *S. auriverrucosus* (Zhou and Liu, 1982); *S. bonkowskii* (Luu, Calame, Nguyen, Le and Ziegler,

2015); *S. canhi* Rösler, (Nguyen, Doan, Ho and Ziegler 2010); *S. chinensis* (Gray, 1842); *S. guishanicus* (Lin and Yao, 2016); *S. hokouensis* (Pope, 1928); *S. kwangsiensis* (Yang, 2015); *S. liboensis* (Zhou and Li, 1982); *S. melli* (Vogt, 1922); *S. nadenensis* (Luu, Nguyen, Le, Bonkowski and Ziegler, 2017); *S. palmatus* (Boulenger, 1907); *S. scientiadventura* (Rösler, Ziegler, Vu, Herrmann and Böhme, 2004); *S. scabridus* (Liu and Zhou, 1982); *S. sengchanthavongi* (Luu, Calame, Nguyen, Le and Ziegler, 2015); *S. shibatai* (Toda, Sengoku, Hikida and Ota, 2008); *S. similignum* (Smith, 1923); *S. subpalmatus* (Günther, 1864); *S. swinhonis* (Günther, 1864); *S. taibaiensis* (Song, 1985); *S. tawaensis* (Okada, 1956); *S. thakhekensis* (Luu, Calame, Nguyen, Le, Bonkowski and Ziegler, 2014); *S. truongi* (Phung and Ziegler, 2011); *S. vertebralis* (Toda, Sengoku, Hikida and Ota, 2008); *S. vietnamensis* (Sang, 2010); *S. wenxianensis* (Zhou and Wang, 2008); *S. yakuensis* (Matsui and Okada, 1968).

SUBGENUS *SINOGEKKO* SUBGEN. NOV.

Type species: *Gekko chinensis* Gray, 1842.

Diagnosis: Lizards in the subgenus *Sinogekko subgen. nov.* are readily separated from all other species in the genus *Sparsuscolotes gen. nov.* by the following: weakly developed webbing between the toes, versus moderately to extensive in all other species of *Sparsuscolotes gen. nov.*; as well as nares in contact with rostral; 2-3 nasals; subcaudals enlarged, in an undivided medially longitudinal row; the presence of limb tubercles (versus absence in the morphologically similar *S. palmatus*); internasals same size or larger than nasorostrals in *S. chinensis* versus always smaller in *S. palmatus*; 8-10 scales around the midbody (versus 11-13 in the morphologically similar *S. similignum*); 1-10 and 9-12 lamellae on the first and fourth toes (versus 11-13 and 12-14 in the morphologically similar *S. similignum*).

Species within the genus *Sparsuscolotes gen. nov.* as defined herein are those that conform with the so-called *Gekko japonicus* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper, by the following suite of characters: 58.9-99.2 mm SVL; nares in contact with rostral (except for *S. auriverrucosus*); nasals 3 (rarely 2 in *S. chinensis*); postmentals relatively small (e.S., *S. similignum*), largest in *S. canhi*, *S. chinensis*, *S. palmatus*, *S. scientiadventura*; 0-21 dorsal tubercle rows; 0-32 precloacal pores; postcloacal tubercles 1-4; webbing between fingers and toes weakly developed to extensive (*S. chinensis*, *S. melli*, *S. palmatus*, *S. scientiadventura*, *S. similignum*, *S. subpalmatus*); tubercles present on fore and hind limbs, hind limbs only, or lacking all together; lateral fold without tubercles; subcaudals enlarged, in a longitudinal row (in *S. yakuensis* medially subdivided); head pattern present or not, without figure-shape (UU- to W-shaped in *S. melli* and W-shaped in *S. scientiadventura*); vertebral region with relatively large, light flecks, blotches or bands.

Species within the genus *Gekko sensu lato*, including all the other genera identified within this paper, until now treated as being within *Gekko* are separated from all other geckoes by the following suite of characters: SVL 50-191 mm; snout-vent length being the same or smaller than tail length; head dorsoventrally depressed, but to different degrees depending on species; head distinctly set off from neck; snout concave in region of the paired nasals and single frontal; body cylindrical to slightly dorsoventrally depressed; belly flat; hind limbs larger than fore limbs; tibia longer than forearm; webbing between toes from rudimentary to distinct; head, body, limbs and tail without significant skin flaps; tail base not or only slightly thickened; tail base round or slightly dorsoventrally depressed; unregenerated tail with more or less distinct whorls; rostral wider than long; nares with or without rostral contact, mostly surrounded by 3 (2-4) nasals; ciliary spines present or lacking; rostral wider than mental; two enlarged postmentals present in

most cases; tubercles on head, body, limbs and dorsal tail surface present or lacking; dorsals granular; ventrals flat, imbricate; lateral folds

slightly developed (i.e. discernible transition from large and flat ventrals towards smaller and more or less raised lateral scales); lateral folds without tubercles (except for *G. vittatus* and associated species herein placed in the genus *Scelotretus* Fitzinger, 1843); toes apically extended, with undivided, broadened subdigital lamellae; fingers and toes except for digit one of both manus and pes (hind foot) with apical, dorsal claws; dorsum of finger one and toe one with apically enlarged scale; subcaudals distinctly enlarged (medially subdivided in different degrees according to species), arranged in a longitudinal row; subcaudals with repeating arrangement of two slightly and one greatly widened plates or with subcaudals slightly or not widened; hemipenis is elongate, apically divided and with two lobes of same size; sulcus spermaticus bordered by voluminous skin bulges; small to large calyces with smooth or denticulated seams (Unterhössel 1902, Zhang 1986, Utsunomiya *et al.* 1996, Shang 2001, Rösler *et al.* 2005); eyes covered by transparent brille; pupil vertical when iris is closed; anteriorly and posteriorly denticulated pupil margins.

Base coloration is mainly brown in different degrees, combined with gray, yellow, green and red, with only a few species with uniform gray, brown or green base coloration. Head with or without pattern (most often Y- or W-shaped patterns). Dorsum mainly with bands or flecks, some species also show symmetrical or asymmetrical light dorsal blotches. Striped pattern rare (e.g. *Scelotretus* Fitzinger, 1843). Tail more or less banded. Juveniles usually with distinct, strongly contrasting light and dark tail bands. Embryo with paired egg teeth in apical contact (Sluiter 1893, Woerdeman 1919).

Molecular studies as cited (e.g. Oliver *et al.* 2017), have consistently shown this subgenus (*Sinogekko subgen. nov.*) to have diverged from the other species in the genus (*Sparsuscolotes gen. nov.*) more than 20 million years before present, warranting genus-level recognition. The designation as a subgenus for this group is the most conservative step allowable in order to taxonomically recognize the group within the rules of the *International Code of Zoological Nomenclature*, beyond mere species level designation.

Distribution: Apparently confined to southern China and immediately adjacent areas.

Etymology: Named in reflection of where the subgenus mainly occurs (China).

Content: *Sparsuscolotes (Sinogekko) chinensis* (Gray, 1842).

GENUS *LAUTUSDIGITUSCOLOTES* GEN. NOV.

Type species: *Gekko grossmanni* Günther, 1994.

Diagnosis: Species within the genus *Lautusdigituscolotes gen. nov.* as defined herein are those that conform with the so-called *Gekko petricolus* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper (or by Rösler *et al.* 2011), by the following suite of characters: 82.9-108.5 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 8-18; precloacal pores 8-15; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs without tubercles (but present on hind limbs of *L. petricolus*); lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; head without pattern or with blotches or short stripes, but not forming a distinctive UU- or W-shaped pattern; back banded (*L. badenii*) or more or less symmetrically blotched (*L. canaensis*, *L. grossmanni*, *L. lauhachindaei*, *L. petricolus*, *L. russelltraini*, *L. takouensis*).

Lizards in *Aurumgekko subgen nov.* are readily separated from all other species in the genus *Lautusdigituscolotes gen. nov.* by colouration. *Aurumgekko subgen nov.* have a dorsal pattern incorporating banding on the back and no flecks between them,

versus more or less symmetrically blotched in all other species. Geckos in the subgenus *Glanduliscrusgekko subgen. nov.* are readily separated from all other species in the genus *Lautusdigituscolotes gen. nov.* by the presence of tubercles on the hind legs (versus absence in the rest).

Geckos in the nominate subgenus *Lautusdigituscolotes subgen. nov.* are readily separated from those in the other two subgenera by a body pattern of being more or less symmetrically blotched on the back (as opposed to banding) and an absence of tubercles on the hind legs.

Species within the genus *Gekko sensu lato*, including all the other genera identified within this paper, until now treated as being within *Gekko* are separated from all other geckoes by the following suite of characters: SVL 50-191 mm; snout-vent length being the same or smaller than tail length; head dorsoventrally depressed, but to different degrees depending on species; head distinctly set off from neck; snout concave in region of the paired nasals and single frontal; body cylindrical to

slightly dorsoventrally depressed; belly flat; hind limbs larger than fore limbs; tibia longer than forearm; webbing between toes from rudimentary to distinct; head, body, limbs and tail without significant skin flaps; tail base not or only slightly thickened; tail base round or slightly dorsoventrally depressed; unregenerated tail with more or less distinct whorls; rostral wider than long; nares with or without rostral contact, mostly surrounded by 3 (2-4) nasals; ciliary spines present or lacking; rostral wider than mental; two enlarged postmentals present in most cases; tubercles on head, body, limbs and dorsal tail surface present or lacking; dorsals granular; ventrals flat, imbricate; lateral folds slightly developed (i.e. discernible transition from large and flat ventrals towards smaller and more or less raised lateral scales); lateral folds without tubercles (except for *G. vittatus* and associated species herein placed in the genus *Scelotretus* Fitzinger, 1843); toes apically extended, with undivided, broadened subdigital lamellae; fingers and toes except for digit one of both manus and pes (hind foot) with apical, dorsal claws; dorsum of finger one and toe one with apically enlarged scale; subcaudals distinctly enlarged (medially subdivided in different degrees according to species), arranged in a longitudinal row; subcaudals with repeating arrangement of two slightly and one greatly widened plates or with subcaudals slightly or not widened; hemipenis is elongate, apically divided and with two lobes of same size; sulcus spermaticus bordered by voluminous skin bulges; small to large calyces with smooth or denticulated seams (Unterhössel 1902, Zhang 1986, Utsunomiya *et al.* 1996, Shang 2001, Rösler *et al.* 2005); eyes covered by transparent brille; pupil vertical when iris is closed; anteriorly and posteriorly denticulated pupil margins.

Base coloration is mainly brown in different degrees, combined with gray, yellow, green and red, with only a few species with uniform gray, brown or green base coloration. Head with or without pattern (most often Y- or W-shaped patterns). Dorsum mainly with bands or flecks, some species also show symmetrical or asymmetrical light dorsal blotches. Striped pattern rare (e.g. *Scelotretus* Fitzinger, 1843). Tail more or less banded. Juveniles usually with distinct, strongly contrasting light and dark tail bands. Embryo with paired egg teeth in apical contact (Sluiter 1893, Woerdeman 1919).

Distribution: Laos, Thailand and Vietnam (Rösler *et al.* 2011).

Etymology: *Lautusdigituscolotes* is Latin for clean digits gecko, in reflection of the lack of webbing between toes in this genus.

Content: *Lautusdigituscolotes grossmanni* (Günther, 1994) (type species); *L. boehmei* (Luu, Calame, Nguyen, Le and Ziegler, 2015); *L. canaensis* (Ngo and Gamble, 2011); *L. lauhachindai* (Panitvong, Sumontha, Konlek and Kunya, 2010); *L. petricolus* (Taylor, 1962); *L. russeltraini* (Ngo, Bauer, Wood and Grismer, 2009); *L. takouensis* (Ngo and Gamble, 2010); *L. badenii* (Szczerbak and Nekrasova, 1994).

SUBGENUS AURUMGEKKO SUBGEN. NOV.

Type species: *Gekko badenii* Szczerbak and Nekrasova, 1994.

Diagnosis: Lizards in *Aurumgekko subgen nov.* are readily separated from all other species in the genus *Lautusdigituscolotes gen. nov.* by colouration. *Aurumgekko subgen nov.* have a dorsal pattern incorporating banding on the back and no flecks between them, versus more or less symmetrically blotched in all other species. Geckos in the subgenus *Glanduliscrusgekko subgen. nov.* are readily separated from all other species in the genus *Lautusdigituscolotes gen. nov.* by the presence of tubercles on the hind legs (versus absence in the rest).

Geckos in the nominate subgenus *Lautusdigituscolotes subgen. nov.* are readily separated from those in the other two subgenera by a body pattern of being more or less symmetrically blotched on the back (as opposed to banding), and an absence of tubercles on the hind legs.

Species within the genus *Lautusdigituscolotes gen. nov.* as defined herein are those that conform with the so-called *Gekko petricolus* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper and Rösler *et al.* (2011), by the following suite of characters: 82.9-108.5 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 8-18; precloacal pores 8-15; precloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs without tubercles (but present on hind limbs of *L. petricolus*); lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; head without pattern or with blotches or short stripes, but not forming a distinctive UU- or W-shaped pattern; back banded (*L. badenii*) or more or less symmetrically blotched (*L. canaensis*, *L. grossmanni*, *L. lauhachindai*, *L. petricolus*, *L. russeltraini*, *L. takouensis*).

Distribution: Southern Vietnam.

Etymology: Named in reflection of the colour of most specimens. Name in Latin literally means "Gold Gecko".

Content: *Lautusdigituscolotes (Aurumgekko) badenii* (Szczerbak and Nekrasova, 1994).

SUBGENUS GLANDULISCRUSGEKKO SUBGEN. NOV.

Type species: *Gekko petricolus* Taylor, 1962.

Diagnosis: Geckos in the subgenus *Glanduliscrusgekko subgen. nov.* are readily separated from all other species in the genus *Lautusdigituscolotes gen. nov.* (both other subgenera) by the presence of tubercles on the hind legs (versus absence in the rest). Lizards in *Aurumgekko subgen nov.* are readily separated from all other species in the genus *Lautusdigituscolotes gen. nov.* by colouration. *Aurumgekko subgen nov.* have a dorsal pattern incorporating banding on the back and no flecks between them, versus more or less symmetrically blotched in all other species.

Geckos in the nominate subgenus *Lautusdigituscolotes subgen. nov.* are readily separated from those in the other two subgenera by a body pattern of being more or less symmetrically blotched on the back (as opposed to banding), and an absence of tubercles on the hind legs.

Species within the genus *Lautusdigituscolotes gen. nov.* as defined herein are those that conform with the so-called *Gekko petricolus* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper and by Rösler *et al.* (2011), by the following suite of characters: 82.9-108.5 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 8-18; precloacal pores 8-15; precloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs without tubercles (but present on hind limbs of *L. petricolus*); lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; head without pattern or with blotches or short stripes, but not forming a distinctive UU- or W-shaped pattern; back banded (*L. badenii*) or more or less symmetrically blotched (*L. canaensis*, *L.*

grossmanni, *L. lauhachindaei*, *L. petricolus*, *L. russelltraini*, *L. takouensis*).

Distribution: Thailand, Laos, Cambodia.

Etymology: *Glanduliscrusgekko* in Latin means tubercles on legs Gekko, as a perfect diagnostic description of the subgenus.

Content: *Lautusdigituscolotes* (*Glanduliscrusgekko*) *petricolus* (Taylor, 1962) (type species); *L. (Glanduliscrusgekko) boehmei* (Luu, Calame, Nguyen, Le and Ziegler, 2015).

SUBGENUS LAUTUSDIGITUSCOLOTES SUBGEN. NOV.

Type species: *Gekko grossmanni* Günther, 1994.

Diagnosis: Geckos in the nominate subgenus *Lautusdigituscolotes* subgen. nov. are readily separated from those in the other two subgenera by a body pattern of being more or less symmetrically blotched on the back (as opposed to banding), and an absence of tubercles on the hind legs.

Geckos in the subgenus *Glanduliscrusgekko* subgen. nov. are readily separated from all other species in the genus *Lautusdigituscolotes* gen. nov. (both other subgenera) by the presence of tubercles on the hind legs (versus absence in the rest).

Lizards in *Aurumgekko* subgen. nov. are readily separated from all other species in the genus *Lautusdigituscolotes* gen. nov. by colouration. *Aurumgekko* subgen. nov. have a dorsal pattern incorporating banding on the back and no flecks between them, versus more or less symmetrically blotched in all other species.

Species within the genus *Lautusdigituscolotes* gen. nov. as defined herein are those that conform with the so-called *Gekko petricolus* group as defined by Rösler *et al.* (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper and by Rösler *et al.* (2011), by the following suite of characters: 82.9-108.5 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 8-18; precloacal pores 8-15; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs without tubercles (but present on hind limbs of *L. petricolus*); lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; head without pattern or with blotches or short stripes, but not forming a distinctive UU- or W-shaped pattern; back banded (*L. badenii*) or more or less symmetrically blotched (*L. canaensis*, *L. grossmanni*, *L. lauhachindaei*, *L. petricolus*, *L. russelltraini*, *L. takouensis*).

Distribution: Believed to be restricted to southern Vietnam, Laos, Cambodia and Thailand.

Etymology: As for genus.

Content: *Lautusdigituscolotes* (*Lautusdigituscolotes*) *grossmanni* (Günther, 1994) (type species); *L. (Lautusdigituscolotes) canaensis* (Ngo and Gamble, 2011); *L. (Lautusdigituscolotes) lauhachindaei* (Panitvong, Sumontha, Konlek and Kunya, 2010); *L. (Lautusdigituscolotes) russelltraini* (Ngo, Bauer, Wood and Grismer, 2009); *L. (Lautusdigituscolotes) takouensis* (Ngo and Gamble, 2010).

GENUS SCLOTRETUS FITZINGER, 1843.

Type species: *Gekko vittatus* Houttuyn, 1782.

Diagnosis: The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species with affinities to the species associated with the taxon presently known as "*Gekko vittatus* Houttuyn, 1782", which herein is treated as more correctly being in a separate genus to *Gekko* and dealt with here. Therefore *Luperosaurus* Gray, 1845 was split by Hoser (2018) into four genera.

Scelotretus Fitzinger, 1843 is the one of the four relevant genera which happens to include the "*Gekko vittatus* Houttuyn, 1782" species group (being resurrected from synonymy by Hoser (2018) and in this paper), and so is properly diagnosed and described herein as it is relevant to this paper.

This is a modified diagnosis from Hoser (2018).

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Scelotretus* Fitzinger, 1843, a genus named in

honour of publisher Charles Pierson and a genus named in honour of athlete George Mariolis are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed (excluding a subgenus named in honour of herpetologist Harold Cogger, a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes or none), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and a genus named in honour of athlete George Mariolis are readily separated from the other two genera (*Luperosaurus* and a genus named in honour of publisher Charles Pierson) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and a genus named in honour of publisher Charles Pierson are separated from *Scelotretus* Fitzinger, 1843 (described here) and a genus named in honour of athlete George Mariolis by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scansors.

The genus named in honour of publisher Charles Pierson is most easily separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and the genus named in honour of athlete George Mariolis) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate between that seen in members of the genera, the genus named in honour of publisher Charles Pierson and *Luperosaurus*, most notably weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be eventually assigned to a separate genus or subgenus.

The genus named in honour of George Mariolis is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis is further separated from *Scelotretus* Fitzinger, 1843 by having 11-15 supralabials, versus 16 in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scansors on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843.

The subgenus *Scelotretus* is further defined and separated from the subgenus named in honour of herpetologist Harold Cogger and all other geckos by the following suite of characters: Maximum SVL 140.0 mm; nares in contact with rostral; nasals 3-4; postmentals relatively small; dorsal tubercle rows 12-14; precloacal pores 14-58; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs with tubercles; lateral folds with tubercles; subcaudals not enlarged; head unicolored, without pattern; nominate form with white, anteriorly bifurcated dorsal stripe (derived from Rösler *et al.* 2011).

The preceding diagnosis in similar form is published as a formal description with the newly assigned correct genus names in Hoser (2018) in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Distribution: Sulawesi and Palawan (subgenus named after Harold Cogger), Indonesia, extending to the Solomon Islands and the Vanuatu Islands (subgenus *Scelotretus* Fitzinger, 1843).

Content: *Scelotretus vittatus* (Houttuyn, 1782) (type species) including three species first formally named by Hoser (2018) that had previously been treated as populations of the former; *S. gulat* (Brown, Diesmos, Duya, Garcia and Rico, 2010); *S. iskandari* (Brown, Supriatna and Ota, 2000); *S. remotus* (Rösler, Ineich, Wilms and Böhme, 2012).

GENUS MAGNAOCELLUS GEN. NOV.

Type species: *Gekko athymus* Brown and Alcalá, 1962.

Diagnosis: Phylogenetically, the genus *Magnaocellus* gen. nov. is most closely related to the Philippines genus

Extentusventersquamus gen. nov., (Rösler et al. 2011), although morphologically it more closely resembles the genera *Gekko* and *Sparsuscolotes* gen. nov..

Magnaocellus gen. nov. as defined herein was placed in a separate group on its own by Rösler et al. (2011). It is separated from all other species within *Gekko sensu lato* as defined by Rösler et al. (2011), by having broad webbing between the fingers and toes (unlike the genus *Extentusventersquamus* gen. nov.), and differs from the morphologically similar genus *Sparsuscolotes* gen. nov. by having a relatively large SVL (> 100 mm), a higher number of lamellae below the fourth toe (18-22, versus less than 18) and more precloacal pores (20-24 versus less than 19).

Species within the genus *Gekko* as defined herein are those that conform with the so-called *Gekko gekko* group as defined by Rösler et al. (2011).

They are separated from the other species previously included in the genus *Gekko* by the following suite of characters: 150.0-191.0 mm SVL; nares, except for *G. verreauxi* Tytler, 1865, not in contact with rostral; nasals 3-6; postmentals relatively low (largest in *G. siamensis* Grossmann and Ulber, 1990), dorsal tubercle rows 10-19; precloacal pores 10-16; postcloacal tubercles 2-4 (rarely single); webbing between fingers and toes lacking; tubercles present on fore and hind limbs; lateral fold without tubercles; subcaudals enlarged, in two parallel rows; iris yellow, green, blue or brick red; Y-shaped head pattern usually discernible; light (white), more or less transversally arranged, symmetrical dorsal and lateral blotches.

Species within the genus *Sparsuscolotes* gen. nov. as defined herein are those that conform with the so-called *Gekko japonicus* group as defined by Rösler et al. (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper, by the following suite of characters: 58.9-99.2 mm SVL; nares in contact with rostral (except for *S. auriverrucosus*); nasals 3 (rarely 2 in *S. chinensis*); postmentals relatively small (e.S., *S. similignum*), largest in *S. canhi*, *S. chinensis*, *S. palmatus*, *S. scientiadvventura*; 0-21 dorsal tubercle rows; 0-32 precloacal pores; postcloacal tubercles 1-4; webbing between fingers and toes weakly developed to extensive (*S. chinensis*, *S. melli*, *S. palmatus*, *S. scientiadvventura*, *S. similignum*, *S. subpalmatus*); tubercles present on fore and hind limbs, hind limbs only, or lacking all together; lateral fold without tubercles; subcaudals enlarged, in a longitudinal row (in *S. yakuensis* medially subdivided); head pattern present or not, without figure-shape (UU- to W-shaped in *S. melli* and W-shaped in *S. scientiadvventura*); vertebral region with relatively large, light flecks, blotches or bands.

Species within the genus *Lautusdigituscolotes* gen. nov. as defined herein are those that conform with the so-called *Gekko petricolus* group as defined by Rösler et al. (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper, by the following suite of characters: 82.9-108.5 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 8-18; precloacal pores 8-15; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs

without tubercles (but present on hind limbs of *L. petricolus*); lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; head without pattern or with blotches or short stripes, but not forming a distinctive UU- or W-shaped pattern; back banded (*L. badenii*) or more or less symmetrically blotched (*L. canaensis*, *L. grossmanni*, *L. lauhachindaei*, *L. petricolus*, *L. russelltraini*, *L. takouensis*).

Species within the genus *Lautusdigituscolotes* gen. nov. as defined herein are those that conform with the so-called *Gekko petricolus* group as defined by Rösler et al. (2011).

They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper (or by Rösler et al. 2011), by the following suite of characters: 82.9-108.5 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 8-18; precloacal pores 8-15; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs without tubercles (but present on hind limbs of *L. petricolus*); lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; head without pattern or with blotches or short stripes, but not forming a distinctive UU- or W-shaped pattern; back banded (*L. badenii*) or more or less symmetrically blotched (*L. canaensis*, *L. grossmanni*, *L. lauhachindaei*, *L. petricolus*, *L. russelltraini*, *L. takouensis*).

The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species with affinities to the species associated with the taxon presently known as "*Gekko vittatus* Houttuyn, 1782", which herein is treated as more correctly being in a separate genus to *Gekko* and dealt with here. Therefore *Luperosaurus* Gray, 1845 was split by Hoser (2018) into four genera.

Scelotretus Fitzinger, 1843 is the one of the four relevant genera which happens to include the "*Gekko vittatus* Houttuyn, 1782" species group (being resurrected from synonymy by Hoser 2018), and so is properly diagnosed and described herein as it is relevant to this paper.

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Scelotretus* Fitzinger, 1843, a genus named in honour of publisher Charles Pierson and a genus named in honour of athlete George Mariolis are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed (excluding a subgenus named in honour of herpetologist Harold Cogger, a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes or none), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and a genus named in honour of athlete George Mariolis are readily separated from the other two genera (*Luperosaurus* and a genus named in honour of publisher Charles Pierson) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and a genus named in honour of publisher Charles Pierson are separated from *Scelotretus* Fitzinger, 1843 (described here) and a genus named in honour of athlete George Mariolis by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scancers.

The genus named in honour of publisher Charles Pierson is most easily separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and the genus named in honour of athlete George Mariolis) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate between that seen in members of the genera the genus named in honour of publisher Charles Pierson and *Luperosaurus*, most

notably weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be eventually assigned to a separate genus or subgenus.

The genus named in honour of George Mariolis is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis is further separated from *Scelotretus* Fitzinger, 1843 by having 11-15 supralabials, versus 16 in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

The genus named in honour of George Mariolis has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scansors on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843.

The subgenus *Scelotretus* is further defined and separated from the subgenus named in honour of herpetologist Harold Cogger and all other geckos by the following suite of characters: Maximum SVL 140.0 mm; nares in contact with rostral; nasals 3-4; postmentals relatively small; dorsal tubercle rows 12-14; precloacal pores 14-58; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs with tubercles; lateral folds with tubercles; subcaudals not enlarged; head unicolored, without pattern; nominate form with white, anteriorly bifurcated dorsal stripe (Rösler *et al.* 2011).

Species within the genus *Gekko sensu lato*, including all the other genera identified within this paper, until now treated as being within *Gekko* are separated from all other geckoes by the following suite of characters: SVL 50-191 mm; snout-vent length being the same or smaller than tail length; head dorsoventrally depressed, but to different degrees depending on species; head distinctly set off from neck; snout concave in region of the paired nasals and single frontal; body cylindrical to

slightly dorsoventrally depressed; belly flat; hind limbs larger than fore limbs; tibia longer than forearm; webbing between toes from rudimentary to distinct; head, body, limbs and tail without significant skin flaps; tail base not or only slightly thickened; tail base round or slightly dorsoventrally depressed; unregenerated tail with more or less distinct whorls; rostral wider than long; nares with or without rostral contact, mostly surrounded by 3 (2-4) nasals; ciliary spines present or lacking; rostral wider than mental; two enlarged postmentals present in most cases; tubercles on head, body, limbs and dorsal tail surface present or lacking; dorsals granular; ventrals flat, imbricate; lateral folds

slightly developed (i.e. discernible transition from large and flat ventrals towards smaller and more or less raised lateral scales); lateral folds without tubercles (except for *G. vittatus* and associated species herein placed in the genus *Scelotretus* Fitzinger, 1843); toes apically extended, with undivided, broadened subdigital lamellae; fingers and toes except for digit one of both manus and pes (hind foot) with apical, dorsal claws; dorsum of finger one and toe one with apically enlarged scale; subcaudals distinctly enlarged (medially subdivided in different degrees according to species), arranged in a longitudinal row; subcaudals with repeating arrangement of two slightly and one greatly widened plates or with subcaudals slightly or not widened; hemipenis is elongate, apically divided and with two lobes of same size; sulcus spermaticus bordered by voluminous skin bulges; small to large calyces with smooth or denticulated seams (Unterhössel 1902, Zhang 1986, Utsunomiya *et al.* 1996,

Shang 2001, Rösler *et al.* 2005); eyes covered by transparent brille; pupil vertical when iris is closed; anteriorly and posteriorly denticulated pupil margins.

Base coloration is mainly brown in different degrees, combined with gray, yellow, green and red, with only a few species with uniform gray, brown or green base coloration. Head with or without pattern (most often Y- or W-shaped patterns). Dorsum mainly with bands or flecks, some species also show symmetrical or asymmetrical light dorsal blotches. Striped pattern rare (e.g. *Scelotretus* Fitzinger, 1843). Tail more or less banded. Juveniles usually with distinct, strongly contrasting light and dark tail bands. Embryo with paired egg teeth in apical contact (Sluiter 1893, Woerdeman 1919).

Distribution: Philippines.

Etymology: *Magnaocellus* literally means large eye in Latin.

Content: *Magnaocellus athymus* (Brown and Alcalá, 1962) (monotypic).

GENUS *EXTENTUSVENTERSQUAMUS* GEN. NOV.

Type species: *Platydactylus monarchus* Schlegel, 1836.

Diagnosis: Species within the genus *Extentusventersquamus* gen. nov. as defined herein are those that conform with the so-called *Gekko monarchus* group and the *Gekko porosus* group as defined by Rösler *et al.* (2011). They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper (or by Rösler *et al.* 2011), by the following suite of characters: One or other of the following: 1/ 63.0-100.0 mm SVL; nares in contact with rostral; nasals 3 (rarely 4 in *E. ernstkelleri* being subgenus *Cavernagekko* subgen. nov.); postmentals relatively large; dorsal tubercle rows 10-24; precloacal pores 32-70; postcloacal tubercles 2-3 (1 in *E. carusadensis* and *E. palawanensis*); no webbing between fingers and toes; tubercles on fore and hind limbs (not on fore limbs of *E. ernstkelleri* which separates the subgenus *Cavernagekko* subgen. nov. from the subgenus *Extentusventersquamus* subgen. nov.) lateral folds without tubercles; subcaudals mostly enlarged, in a longitudinal row; more or less distinct, W-shaped head pattern; light (white to gray), mostly asymmetrically arranged dorsal and lateral flecks, (subgenera *Extentusventersquamus* subgen. nov. and *Cavernagekko* subgen. nov.), or:

2/ 89.2-108.2 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 12-22; precloacal pores 52-88; postcloacal tubercle single; no webbing between fingers and toes; tubercles present on fore and hind limbs; lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; green to blue coloration of the iris; head pattern without a distinctive (i.e. W-shaped) pattern; dorsum with flecks or in *E. gigante* indistinctly banded, (subgenus *Foderetdorsumgekko* subgen. nov.).

Distribution: The genus is restricted to the Philippines, except for one species endemic to Lanyu Island, Taiwan and another from Burma, eastwards to include most of Indonesia to Irian Jaya.

Etymology: In Latin, *Extentusventersquamus* means "enlarged belly scales", in reflection of the enlarged size of the ventral scales in members of the genus.

Content: *Extentusventersquamus monarchus* (Schlegel, 1836) (type species); *E. carusadensis* (Linkem, Siler, Diesmos, Sy and Brown, 2010); *E. coi* (Brown, Siler, Oliveros, Diesmos and Alcalá, 2011); *E. crombota* (Brown, Oliveros, Siler and Diesmos, 2008); *E. (Cavernagekko) ernstkelleri* (Rösler, Siler, Brown, Demeglio and Gaulke, 2006); *E. gigante* (Brown and Alcalá, 1978); *E. kikuchii* (Oshima, 1912); *E. mindorensis* (Taylor, 1919); *E. palawanensis* (Taylor, 1925); *E. porosus* (Taylor, 1922); *E. romblon* (Brown and Alcalá, 1978); *E. rossi* (Brown, Oliveros, Siler and Diesmos, 2009).

SUBGENUS *CAVERNAGEKKO* SUBGEN. NOV.

Type species: *Gekko ernstkelleri* Rösler, Siler, Brown, Demeglio and Gaulke, 2006.

Diagnosis: Species within the genus *Extentusventersquamus* *gen. nov.* as defined herein are those that conform with the so-called *Gekko monarchus* group and the *Gekko porosus* group as defined by Rösler *et al.* (2011). They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper (or by Rösler *et al.* 2011), by the following suite of characters: One or other of the following:

1/ 63.0-100.0 mm SVL; nares in contact with rostral; nasals 3 (rarely 4 in *E. ernstkelleri* being subgenus *Cavernagekko subgen. nov.*); postmentals relatively large; dorsal tubercle rows 10-24; precloacal pores 32-70; postcloacal tubercles 2-3 (1 in *E. carusadensis* and *E. palawanensis*); no webbing between fingers and toes; tubercles on fore and hind limbs (not on fore limbs of *E. ernstkelleri* which separates the subgenus *Cavernagekko subgen. nov.* from the subgenus *Extentusventersquamus subgen. nov.*) lateral folds without tubercles; subcaudals mostly enlarged, in a longitudinal row; more or less distinct, W-shaped head pattern; light (white to gray), mostly asymmetrically arranged dorsal and lateral flecks, (subgenera *Extentusventersquamus subgen. nov.* and *Cavernagekko subgen. nov.*), or:

2/ 89.2-108.2 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 12-22; precloacal pores 52-88; postcloacal tubercle single; no webbing between fingers and toes; tubercles present on fore and hind limbs; lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; green to blue coloration of the iris; head pattern without a distinctive (i.e. W-shaped) pattern; dorsum with flecks or in *E. gigante* indistinctly banded, (subgenus *Foderetdorsumgekko subgen. nov.*).

It is the absence of tubercles on the fore limbs that separates *Cavernagekko subgen. nov.* from the morphologically similar *Extentusventersquamus subgen. nov.* species.

Distribution: Known only from near the type locality in Panay, Philippines.

Etymology: In Latin *Cavernagekko* means "Cave Gekko".

Content: *Extentusventersquamus (Cavernagekko) ernstkelleri* (Rösler, Siler, Brown, Demeglio and Gaulke, 2006) (monotypic).

SUBGENUS FODERETDORSUMGEKKO SUBGEN. NOV.

Type species: *Gekko porosus* Taylor, 1922.

Diagnosis: Species within the genus *Extentusventersquamus* *gen. nov.* as defined herein are those that conform with the so-called *Gekko monarchus* group and the *Gekko porosus* group as defined by Rösler *et al.* (2011). They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper (or by Rösler *et al.* 2011), by the following suite of characters: One or other of the following:

1/ 89.2-108.2 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 12-22; precloacal pores 52-88; postcloacal tubercle single; no webbing between fingers and toes; tubercles present on fore and hind limbs; lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; green to blue coloration of the iris; head pattern without a distinctive (i.e. W-shaped) pattern; dorsum with flecks or in *E. gigante* indistinctly banded, (subgenus *Foderetdorsumgekko subgen. nov.*) the preceding paragraph being a diagnosis for the subgenus *Foderetdorsumgekko subgen. nov.*.

2/ 63.0-100.0 mm SVL; nares in contact with rostral; nasals 3 (rarely 4 in *E. ernstkelleri* being subgenus *Cavernagekko subgen. nov.*); postmentals relatively large; dorsal tubercle rows 10-24; precloacal pores 32-70; postcloacal tubercles 2-3 (1 in *E. carusadensis* and *E. palawanensis*); no webbing between fingers and toes; tubercles on fore and hind limbs (not on fore limbs of *E. ernstkelleri* which separates the subgenus *Cavernagekko subgen. nov.* from the subgenus *Extentusventersquamus subgen. nov.*) lateral folds without tubercles; subcaudals mostly enlarged, in a longitudinal row; more or less distinct, W-shaped head pattern; light (white to

gray), mostly asymmetrically arranged dorsal and lateral flecks, (subgenera *Extentusventersquamus subgen. nov.* and *Cavernagekko subgen. nov.*).

Foderetdorsumgekko subgen. nov. is the *Gekko porosus* group as defined by Rösler *et al.* (2011).

Distribution: Philippines only.

Etymology: *Foderetdorsumgekko* in Latin means flecked dorsum in reflection of the colouration of most specimens of most species in the genus.

Content: *Extentusventersquamus (Foderetdorsumgekko) porosus* (Taylor, 1922) (type species); *E. (Foderetdorsumgekko) coi* (Brown, Siler, Oliveros, Diesmos and Alcalá, 2011); *E. (Foderetdorsumgekko) crombota* (Brown, Oliveros, Siler and Diesmos, 2008); *E. (Foderetdorsumgekko) gigante* (Brown and Alcalá, 1978); *E. (Foderetdorsumgekko) romblon* (Brown and Alcalá, 1978); *E. (Foderetdorsumgekko) rossi* (Brown, Oliveros, Siler and Diesmos, 2009).

SUBGENUS EXTENTUSVENTERSQUAMUS SUBGEN. NOV.

Type species: *Platydictylus monarchus* Schlegel, 1836.

Diagnosis: Species within the genus *Extentusventersquamus* *gen. nov.* as defined herein are those that conform with the so-called *Gekko monarchus* group and the *Gekko porosus* group as defined by Rösler *et al.* (2011). They are separated from the other species previously included in the genus *Gekko* as defined elsewhere in this paper (or by Rösler *et al.* 2011), by the following suite of characters: One or other of the following:

1/ 63.0-100.0 mm SVL; nares in contact with rostral; nasals 3 (rarely 4 in *E. ernstkelleri* being subgenus *Cavernagekko subgen. nov.*); postmentals relatively large; dorsal tubercle rows 10-24; precloacal pores 32-70; postcloacal tubercles 2-3 (1 in *E. carusadensis* and *E. palawanensis*); no webbing between fingers and toes; tubercles on fore and hind limbs (not on fore limbs of *E. ernstkelleri* which separates the subgenus *Cavernagekko subgen. nov.* from the subgenus *Extentusventersquamus subgen. nov.*) lateral folds without tubercles; subcaudals mostly enlarged, in a longitudinal row; more or less distinct, W-shaped head pattern; light (white to gray), mostly asymmetrically arranged dorsal and lateral flecks, (subgenera *Extentusventersquamus subgen. nov.* and *Cavernagekko subgen. nov.*), or:

2/ 89.2-108.2 mm SVL; nares in contact with rostral; nasals 3; postmentals relatively large; dorsal tubercle rows 12-22; precloacal pores 52-88; postcloacal tubercle single; no webbing between fingers and toes; tubercles present on fore and hind limbs; lateral folds without tubercles; subcaudals enlarged, in a longitudinal row; green to blue coloration of the iris; head pattern without a distinctive (i.e. W-shaped) pattern; dorsum with flecks or in *E. gigante* indistinctly banded, (subgenus *Foderetdorsumgekko subgen. nov.*), the preceding paragraph being diagnostic for the subgenus *Foderetdorsumgekko subgen. nov.*.

Extentusventersquamus subgen. nov. is the *Gekko monarchus* group as defined by Rösler *et al.* (2011), minus the species *E. ernstkelleri*, which is placed in a separate subgenus due to morphological divergence and molecular divergence.

Distribution: Mainly the Philippines, but including Burma to Irian Jaya and Lanyu Island, Taiwan.

Etymology: As for genus.

Content: *Extentusventersquamus (Extentusventersquamus) monarchus* (Schlegel, 1836) (type species); *E. (Extentusventersquamus) carusadensis* (Linkem, Siler, Diesmos, Sy and Brown, 2010); *E. (Extentusventersquamus) kikuchii* (Oshima, 1912); *E. (Extentusventersquamus) mindorensis* (Taylor, 1919); *E. (Extentusventersquamus) palawanensis* (Taylor, 1925).

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- CONFLICT OF INTEREST**
- There are no conflicts of interest in terms of this paper.
-
- Genus and species list for *Gekko* Laurenti, 1768 sensu lato**
- GENUS GEKKO LAURENTI, 1769**
- Gekko gecko* (Linnaeus, 1758) (type species)
- Gekko albofasciolatus* (Günther, 1867)
- Gekko nutaphandi* Bauer, Sumontha and Pauwels, 2008
- Gekko reevesii* Gray, 1831)
- Gekko siamensis* Grossmann and Ulber, 1990
- Gekko smithii* Gray, 1842
- Gekko verreauxi* Tytler, 1865
- GENUS SPARSUSCOLOTES GEN. NOV.**
- Sparsuscolotes japonicus* (Schlegel, 1836) (type species)
- Sparsuscolotes aaronbaueri* (Tri, Thai, Phimvohan, David and Teynié, 2015)
- Sparsuscolotes adleri* (Nguyen, Wang, Yang, Lehmann, Le, Ziegler and Bonkowski, 2013)
- Sparsuscolotes auriverrucosus* (Zhou and Liu, 1982)
- Sparsuscolotes bonkowskii* (Luu, Calame, Nguyen, Le and Ziegler, 2015)
- Sparsuscolotes canhi* Rösler, (Nguyen, Doan, Ho and Ziegler 2010)
- Sparsuscolotes guishanicus* (Lin and Yao, 2016)
- Sparsuscolotes hokouensis* (Pope, 1928)
- Sparsuscolotes kwangsiensis* (Yang, 2015)
- Sparsuscolotes liboensis* (Zhou and Li, 1982)
- Sparsuscolotes melli* (Vogt, 1922)
- Sparsuscolotes nadenensis* (Luu, Nguyen, Le, Bonkowski and Ziegler, 2017)
- Sparsuscolotes palmatus* (Boulenger, 1907)
- Sparsuscolotes scientiaventura* (Rösler, Ziegler, Vu, Herrmann and Böhme, 2004)
- Sparsuscolotes scabridus* (Liu and Zhou, 1982)
- Sparsuscolotes sengchanthavongi* (Luu, Calame, Nguyen, Le and Ziegler, 2015)
- Sparsuscolotes shibatai* (Toda, Sengoku, Hikida and Ota, 2008)
- Sparsuscolotes similignum* (Smith, 1923)
- Sparsuscolotes subpalmatus* (Günther, 1864)
- Sparsuscolotes swinhonis* (Günther, 1864)
- Sparsuscolotes taibaiensis* (Song, 1985)
- Sparsuscolotes tawaensis* (Okada, 1956)
- Sparsuscolotes thakhekensis* (Luu, Calame, Nguyen, Le, Bonkowski and Ziegler, 2014)
- Sparsuscolotes truongi* (Phung and Ziegler, 2011)
- Sparsuscolotes vertebralis* (Toda, Sengoku, Hikida and Ota, 2008)
- Sparsuscolotes vietnamensis* (Sang, 2010)
- Sparsuscolotes wenxianensis* (Zhou and Wang, 2008)
- Sparsuscolotes yakuensis* (Matsui and Okada, 1968)
- SUBGENUS SINOGEKKO SUBGEN. NOV.**
- Sparsuscolotes (sinogekko) chinensis* (Gray, 1842)
- GENUS LATUSDIGITISCOLOTES GEN. NOV.**
- Lautusdigituscolotes grossmanni* (Günther, 1994) (type species) (Vietnam)
- Lautusdigituscolotes canaensis* (Ngo and Gamble, 2011)
- Lautusdigituscolotes lauhachindai* (Panitvong, Sumontha, Konlek and Kunya, 2010)
- Lautusdigituscolotes russelltraini* (Ngo, Bauer, Wood and Grismer, 2009)
- Lautusdigituscolotes takouensis* (Ngo and Gamble, 2010)
- SUBGENUS AURUMGEKKO SUBGEN. NOV.**
- Lautusdigituscolotes (Aurumgekko) badenii* (Szczerebak and Nekrasova, 1994)
- SUBGENUS GLANDULISCRUSGEKKO SUBGEN. NOV.**
- Lautusdigituscolotes (Glanduliscrusgekko) petricolus* (Taylor, 1962) (type species)
- Lautusdigituscolotes (Glanduliscrusgekko) boehmei* (Luu, Calame, Nguyen, Le and Ziegler, 2015)
- GENUS SCELOTRETUS FITZINGER, 1843**
- Scelotretus vittatus* (Houttuyn, 1782) (type species)
- Scelotretus remotus* (Rösler, Ineich, Wilms and Böhme, 2012). And three other species named by Raymond Hoser in honour of Dara Nin, Harold Cogger and Jen Anderson, as published in Hoser (2018).
- GENUS MAGNAOCELLUS GEN. NOV.**
- Magnaocellus athymus* (Brown and Alcalá, 1962) (monotypic)
- GENUS EXTENTUSVENTERSQUAMUS GEN. NOV.**
- Extentusventersquamus monarchus* (Schlegel, 1836) (type species)
- Extentusventersquamus carusadensis* (Linkem, Siler, Diesmos, Sy and Brown, 2010)
- Extentusventersquamus mindorensis* (Taylor, 1919)
- Extentusventersquamus kikuchii* (Oshima, 1912)
- Extentusventersquamus palawanensis* (Taylor, 1925)
- SUBGENUS CAVERNAGEKKO SUBGEN. NOV.**
- Extentusventersquamus (Cavernagekko) ernstkelleri* (Rösler, Siler, Brown, Demeglio and Gaulke, 2006)
- SUBGENUS FODERETDORSUMGEKKO SUBGEN. NOV.**
- Extentusventersquamus (Foderetdorsumgekko) porosus* (Taylor, 1922) (type species)
- Extentusventersquamus (Foderetdorsumgekko) coi* (Brown, Siler, Oliveros, Diesmos and Alcalá, 2011)
- Extentusventersquamus (Foderetdorsumgekko) crombota* (Brown, Oliveros, Siler and Diesmos, 2008)
- Extentusventersquamus (Foderetdorsumgekko) gigante* (Brown and Alcalá, 1978)
- Extentusventersquamus (Foderetdorsumgekko) romblon* (Brown and Alcalá, 1978)
- Extentusventersquamus (Foderetdorsumgekko) rossii* (Brown, Oliveros, Siler and Diesmos, 2009)

A revised taxonomy of the gecko genus *Ptychozoon* Kuhl and Van Hasselt, 1822, including the formal erection of two new genera to accommodate the most divergent taxa and description of ten new species.

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ABSTRACT

The genus *Ptychozoon* Kuhl and Van Hasselt, 1822 includes the so-called flying or gliding geckos of south-east Asia. Molecular studies published over the past decade have indicated that the genus as currently understood includes forms of significant divergence and greater species diversity than the current taxonomy indicates (Brown *et al.* 2012, Pyron *et al.* 2013).

To correct the anomaly and in accordance with the rules of the *International Code of Zoological Nomenclature* the most morphologically divergent species are herein placed in two new genera. Ten new species within *Ptychozoon sensu lato* are also formally named for the first time.

Keywords: Reptile; Taxonomy; Nomenclature; *Ptychozoon*; *Pteropleura*; *kuhli*; neotype; *rhacophorus*; *lionotum*; *horsfieldii*; New genus; *Alexteescolotes*; *Cliveevattcolotes*; new species; *teesi*; *steveteesi*; *cliveevatti*; *sumatraensis*; *malayaensis*; *johorensis*; *engannoensis*; *sulawesiensis*; *borneoensis*; *wallaceaensis*.

INTRODUCTION

The genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as currently recognized includes the iconic so-called Flying Geckos, alternatively known as the Parachute Geckos, the latter name actually being the most descriptive in terms of how they jump of tree trunks and limbs.

They are endemic to forested areas in South-east Asia.

All species are characterized by cryptic coloration designed to merge with lichen-covered tree bark and possess elaborate webs surrounding the neck, limbs, trunk, and tail.

These membranes also help to conceal the gecko against trees. When aroused and in order to flee a potential predator, the gecko leaps into the air, the flaps are used to generate lift and allow the gecko to control its fall. Besides being able to glide up to 60 metres they typically do a swoop at the end of their flight to land softly.

Molecular studies published over the past decade have indicated that the genus as currently understood includes forms of significant divergence and greater species diversity than the current taxonomy indicates (Brown *et al.* 2012, Pyron *et al.* 2013).

Most authorities recognize nine valid species, but molecular data published to date (Brown *et al.* 2012, Pyron *et al.* 2013), clearly shows that the actual number of valid species in the assemblage is in excess of 20.

While all species within *Ptychozoon* Kuhl and Van Hasselt, 1822 do fall within a single clade, this clade is of deep divergence and includes three clearly divergent species groups. Each is sufficiently divergent to be worthy of recognition at the genus level.

To correct these anomalies and in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) the most morphologically divergent species are herein

placed in two new genera, both of which are named for the first time due to the unavailability of any synonym names. Ten new species within *Ptychozoon sensu lato* are also formally named for the first time.

They have been known for some time (see for example Brown 2012), but remain unnamed.

This is an untenable situation based on the existential threats to these species and their conservation significance and so this is corrected herein.

The first and most important step in the conservation of any species is the recognition of its existence and the formal naming of it in accordance with the rules used by zoologists and wildlife managers worldwide.

MATERIALS, METHODS AND RESULTS

As part of a global audit spanning the world's gecko species, obviously unnamed clades at the genus level have been identified and are subject of papers such as this to correctly name them in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Unless a correct genus-level framework is used to organize known and potentially threatened taxa, governments and NGO's cannot properly assign scarce resources to those taxa in greatest need of protection.

The same applies at the species level. To that end, 10 obviously unnamed species are also formally named for the first time in this paper. In every case, these species have been misidentified as similar already described species.

The basis of the review of *Ptychozoon* Kuhl and Van Hasselt, 1822, *sensu lato* included via an examination of literature and specimens.

In the case of *Ptychozoon* Kuhl and Van Hasselt, 1822 two other clades besides the nominate one were identified (Brown *et al.* 2012, Pyron *et al.* 2013).

The only available synonym for the genus *Ptychozoon* was the name *Pteropleura* Gray, 1827, type species *Pteropleura horsfieldii* Gray, 1827 (Gray, 1827).

That taxon sits within the same clade of species as *Lacerta homalocephala* Creveldt, 1809 the type species of the genus *Ptychozoon* Kuhl and Van Hasselt, 1822, now known as *P. kuhli* Stejneger, 1902 (as shown by Brown *et al.* 2012).

Therefore two new generic names are formally assigned herein for each divergent group as identified in the relevant papers cited herein including Brown *et al.* (2012) and Pyron *et al.* (2013).

An audit of relevant species groups revealed numerous well-known regional forms that have at times been identified by earlier authors as putative unnamed species, but never formally named.

Those 10 species are all formally named herein for the first time. As noted already, the basis of the taxonomy herein comes from an inspection of the relevant literature and specimens of each putative taxon. This is the materials and methods.

I should also note that there is still greater diversity within this assemblage awaiting formal description and I hope that this occurs while the relevant species remain extant in ever dwindling forests and before their only legacy is a few corpses in a museum somewhere.

In summary *Ptychozoon* is herein restricted to the majority of species in the current genus, save for the three most divergent species, one of which is named herein for the first time.

The new genus *Alexteescolotes* *gen. nov.* has been erected to accommodate the most divergent species level taxon in the group, namely *Gecko rhacophorus* Boulenger, 1899, a species more recently placed within *Ptychozoon* as well as a newly described and closely related taxon, also from Borneo, although geographically and morphologically divergent.

The species *Ptychozoon lionotum* Annandale, 1905 is placed in the newly named genus *Cliveevattcolotes* *gen. nov.* along with a second species that had until now been treated as conspecific with *P. lionotum*, namely *C. steveteesi* *sp. nov.*

Within *Ptychozoon*, the species *P. kuhli* Stejneger, 1902 has long been known to include a complex of morphologically similar species. Eight of these forms are formally described herein as new species.

These are *P. sumatraensis* *sp. nov.*, *P. malayaensis* *sp. nov.*, *P. cliveevatti* *sp. nov.*, *P. johorensis* *sp. nov.*, *P. engannoensis* *sp. nov.*, *P. sulawesiensis* *sp. nov.*, *P. wallaceaensis* *sp. nov.* and *P. borneoensis* *sp. nov.*

The species *Ptychozoon horsfieldii* (Gray, 1827) known from populations in Borneo and Sumatra is also divided into two with the Sumatran population being formally named *Ptychozoon cliveevatti* *sp. nov.*

The species *Pteropleura horsfieldii* Gray, 1827 is evidently based upon relevant specimens at the Museum of Natural History which clearly conform to the form found on the island of Borneo, which is why the Sumatran form is that which is newly named herein.

The species *P. kuhli* Stejneger, 1902 did not have a type locality specified in the original description as published by Creveldt in 1809 and none was added when the taxon was given a new name by Stejneger (1902). However it is clear from the original description and subsequent material (e.g. Boulenger 1885), that at the time (1809), the original type material had originated from Java.

The holotype has also been lost (De Lisle *et al.* 2013) and so it is appropriate in these circumstances to designate a neotype in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as stated at Article 75. This is done within this paper.

Literature relevant to the new taxonomic arrangement within this paper, including an outline of the taxonomy and nomenclature of relevant species to date, molecular and morphological analysis

of each species-level taxon comes from the following publications, Annandale (1905a, 1905b), Auliya (2006), Boistel *et al.* (2011), Boulenger (1885, 1890, 1899), Brown (1999), Brown *et al.* (1997, 2012, 2013), Chan-ard *et al.* (1999, 2015), Cox *et al.* (1998), Creveldt (1809), Cuvier (1831), Das (2004), Das and Vijayakumar (2009), De Lisle *et al.* (2013), de Rooij (1915), Duméril and Bibron (1836), Fitzsimons (2017), Fitzinger (1843), Goldberg and Grismer (2016), Gray (1827, 1845), Grismer (2011a, 2011b), Grismer *et al.* (2002), Grossmann (2009), Günther (1864), Hartmann *et al.* (2014), Klaver (2007), Koch (2002), Kopstein (1938), Law and Law (2016), Lönnberg (1899), Manthey (1982a, 1982b), Manthey and Grossmann (1997), Mertens and Senfft (1929), Min and Das (2012), Murthy (2010), Onn *et al.* (2010), Pawar and Bismas (2001), Pyron *et al.* (2013), Ride *et al.* (1999), Rösler (1995), Sang *et al.* (2009), Smith (1935), Stejneger (1902), Sumontha (1963), Sumontha *et al.* (2012), Sy *et al.* (2014), Taylor (1915, 1922, 1963), Teynié *et al.* (2010), Tweedie (1954), Venugopal (2010), Wang *et al.* (2016), Wood *et al.* (2004) and sources cited therein.

In terms of the descriptions below, the following should be noted. Spellings of names, including in order to change gender, should not be altered in any way unless absolutely mandatory according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999). In the unlikely event that a later author or so-called "first reviser" seeks to merge named taxa, then the name to be used should be that first used in this paper, as dictated by page priority and order in the keywords of the abstract.

Material may be repeated in sequential descriptions in order to ensure that each complies wholly with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

DESIGNATION OF A NEOTYPE FOR *PTYCHOOZON KUHLI* STEJNEGER, 1902

To remove potential confusion and instability in the taxonomy of this species group, a neotype for *Ptychozoon kuhli* Stejneger, 1902 is designated herein, in accordance with Article 75 of the current edition of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999), as in edition number 4 as amended online by the ICZN prior to 2018.

De Lisle *et al.* (2013), (p. 219) determined that the holotype for *Ptychozoon kuhli* Stejneger, 1902

had been lost. Brown *et al.* (2012), further determined that lizards assigned to the taxon *Ptychozoon kuhli* Stejneger, 1902 from various parts of south-east Asia are in fact a species complex and not just a single species. One or more of these has also been formally named as a new species (e.g. *Ptychozoon nicobarensis* Das and Vijayakumar, 2009).

In accordance with Article 75.3 of the code it is herein noted that there is further potential for recognition of further species within what is now identified as *Ptychozoon kuhli* Stejneger, 1902 including within this paper.

As a result of these relevant factors and under Article 75.3.1 of the code the neotype is assigned to clarify the status of "typical" *Ptychozoon kuhli* Stejneger, 1902 to be a reference point for the taxon.

Under Article 75.3.2 of the code, I refer to the diagnosis of the species-group taxon *Ptychozoon kuhli* Stejneger, 1902 as described within this paper under the heading for that species.

Under Articles 75.3.3. and 75.3.7. of the *International Code of Zoological Nomenclature*, I herein designate the neotype for *Ptychozoon kuhli* Stejneger, 1902 as a preserved specimen at the University of Colorado Museum of Natural History collection, specimen number: UCM Amphibian and reptile specimens No. 59352, collected from Central Java in 1997. This facility allows access to its holdings.

Under Article 75.3.4. I herein state that the original holotype specimen for *Ptychozoon kuhli* Stejneger, 1902 has apparently been permanently lost and searches have been unable to locate it. Refer to the account by De Lisle *et al.* (2013).

Based on the original description of the holotype by Creveldt in 1809, the neotype matches the same species within the description. Relevant to article 75.3.5 of the code, this detail has been effectively corroborated by Boulenger (1895).

In accordance with Article 75.3.6 of the code, I note that the type locality of the neotype is as close as possible to the exact location the holotype originated in as much as both came from the island of Java in what is now known as Indonesia.

GENUS *PTYCHOZOOM* KUHL AND VAN HASSETT, 1822.

Diagnosis: Lizards of the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as currently recognized are readily separated from all other living geckos by the following unique combination of characters: Digits strongly dilated, entirely webbed, with undivided lamellae below; all but the thumb and inner toe have a compressed curved distal phalanx with retractile claw, originating a little before the extremity of the digital expansion. Limbs and sides of head, body and tail with much developed membranous expansions acting as parachutes when lizards jump from elevated surfaces. Upper surfaces of the body are covered with juxtaposed granular scales and tubercles; lower surfaces have small, slightly imbricated scales; the parachute-membrane is covered above with imbricated square scales arranged like the bricks of a wall to support it and are scaleless inferiorly. The genus *Alexteescolotes* *gen. nov.* is separated from *Ptychozoon* by the absence of these support scales and it was until now included in the same genus. Caudal lobe angling is slight to strong. Pupil is vertical. Males with preanal pores. Adults range from 60-110 mm maximal snout-vent length.

The genus *Alexteescolotes* *gen. nov.* type species *Gecko rhacophorus* Boulenger, 1899, more recently known *Ptychozoon rhacophorus* (Boulenger, 1899) and species formerly included in the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 and diagnosed as above, is readily separated from *Ptychozoon* by the absence of imbricate parachute support scales which are present in all species of *Ptychozoon* and *Cliveevattcalotes* *gen. nov.* the species within *Cliveevattcalotes* *gen. nov.* also until now being included in *Ptychozoon*.

Alexteescolotes *gen. nov.* is further separated from both other genera by the absence of an infra-auricular cutaneous expansion as seen in all other species.

The genus *Cliveevattcalotes* *gen. nov.* including the species until now known as *Ptychozoon lionotum* Annandale, 1905 and an allied form herein described as *Cliveevattcalotes steveteesi* *sp. nov.* and type species for the genus, is separated from both *Ptychozoon* and *Alexteescolotes* *gen. nov.* by the presence of a predigital notch in a preantibrachial expansion, versus none in all other species in both other genera.

Distribution: South-east Asia ranging from east Indian Territory to the Moluccas and including southern China and the Philippines. Most species are found in Sundaland.

Content: *Ptychozoon kuhli* (Stejneger, 1902) (type species); *P. bannaense* Wang, Wang and Liu, 2016; *P. borneoensis* *sp. nov.*; *P. cliveevatti* *sp. nov.*; *P. engannoensis* *sp. nov.*; *P. horsfieldii* (Gray, 1827); *P. intermedium* Taylor, 1915; *P. johorensis* *sp. nov.*; *P. kaengkrachanense* Sumontha, Pauwels, Kunya, Limkhitaksorn, Ruksue, Taokratok, Ansermet and Chanhome, 2012; *P. malayaensis* *sp. nov.*; *P. nicobarensis* Das and Vijayakumar, 2009; *P. sulawesiensis* *sp. nov.*; *P. sumatraensis* *sp. nov.*; *P. trinotaterra* Brown, 1999; *P. wallaceaensis* *sp. nov.*

GENUS *ALEXTEESCOLOTES* *GEN. NOV.*

Type species: *Gecko rhacophorus* Boulenger, 1899.

Diagnosis: The genus *Alexteescolotes* *gen. nov.* type species *Gecko rhacophorus* Boulenger, 1899, more recently known *Ptychozoon rhacophorus* (Boulenger, 1899) and consisting of one species formerly included in the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as well as a second taxon described within this paper, is readily separated from *Ptychozoon* by the absence of imbricate parachute support scales which are present in all species of *Ptychozoon* and *Cliveevattcalotes* *gen. nov.* the species within *Cliveevattcalotes* *gen. nov.* also until now

being included in *Ptychozoon*.

Alexteescolotes *gen. nov.* is further separated from both other genera by the absence of an infra-auricular cutaneous expansion as seen in all other species.

Lizards of the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as currently recognized are readily separated from all other living geckos by the following unique combination of characters: Digits strongly dilated, entirely webbed, with undivided lamellae below; all but the thumb and inner toe have a compressed curved distal phalanx with retractile claw, originating a little before the extremity of the digital expansion. Limbs and sides of head, body and tail with much developed membranous expansions acting as parachutes when lizards jump from elevated surfaces. Upper surfaces of the body are covered with juxtaposed granular scales and tubercles; lower surfaces have small, slightly imbricated scales; the parachute-membrane is covered above with imbricated square scales arranged like the bricks of a wall to support it and are scaleless inferiorly. The genus

Alexteescolotes *gen. nov.* is separated from *Ptychozoon* by the absence of these support scales and it was until now included in the same genus. Caudal lobe angling is slight to strong. Pupil is vertical. Males with preanal pores. Adults range from 60-110 mm maximal snout-vent length.

The genus *Cliveevattcalotes* *gen. nov.* including the species until now known as *Ptychozoon lionotum* Annandale, 1905 and an allied form herein described as *Cliveevattcalotes steveteesi* *sp. nov.* and type species for the genus is separated from both *Ptychozoon* and *Alexteescolotes* *gen. nov.* by the presence of a predigital notch in a preantibrachial expansion, versus none in all other species in both other genera.

Distribution: Elevated parts of northern Borneo (Sabah) and also south-west Borneo (Sarawak).

Etymology: Named in honour of human rights lawyer, Alex Tees of Bondi, New South Wales, Australia for services to wildlife conservation globally.

Content: *Alexteescolotes rhacophorus* (Boulenger, 1899); *A. teesi* *sp. nov.* (this paper).

GENUS *CLIVEEVATTALOTES* *GEN. NOV.*

Type species: *Cliveevattcalotes steveteesi* *sp. nov.* (this paper).

Diagnosis: The genus *Cliveevattcalotes* *gen. nov.* including the species until now known as *Ptychozoon lionotum* Annandale, 1905 and an allied form herein described as *Cliveevattcalotes steveteesi* *sp. nov.* and type species for the genus is separated from both *Ptychozoon* and *Cliveevattcalotes* *gen. nov.* by the presence of a predigital notch in a preantibrachial expansion, versus none in all other species in both other genera.

The genus *Alexteescolotes* *gen. nov.* type species *Gecko rhacophorus* Boulenger, 1899, more recently known *Ptychozoon rhacophorus* (Boulenger, 1899) and consisting of one species formerly included in the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 is readily separated from *Ptychozoon* by the absence of imbricate parachute support scales which are present in all species of *Ptychozoon* and *Cliveevattcalotes* *gen. nov.* the species within *Cliveevattcalotes* *gen. nov.* also until now being included in *Ptychozoon*.

Alexteescolotes *gen. nov.* is further separated from both other genera by the absence of an infra-auricular cutaneous expansion as seen in all other species.

Lizards of the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as currently recognized are readily separated from all other living geckos by the following unique combination of characters: Digits strongly dilated, entirely webbed, with undivided lamellae below; all but the thumb and inner toe have a compressed curved distal phalanx with retractile claw, originating a little before the extremity of the digital expansion. Limbs and sides of head, body and tail with much developed membranous expansions acting as parachutes when lizards jump from elevated surfaces. Upper surfaces of the body are covered with juxtaposed granular scales and tubercles; lower surfaces have small, slightly imbricated scales; the parachute-membrane is covered above

with imbricated square scales arranged like the bricks of a wall to support it and are scaleless inferiorly. The genus *Alexteescolotes gen. nov.* is separated from *Ptychozoon* by the absence of these support scales and it was until now included in the same genus. Caudal lobe angling is slight to strong. Pupil is vertical. Males with praeanal pores. Adults range from 60-110 mm maximal snout-vent length.

Distribution: Burma and Vietnam, south to Malaysia on the Malay Peninsula.

Etymology: Named in honour of human rights barrister, Clive Andreas Evatt of Turrumurra, New South Wales, Australia for services to wildlife conservation globally.

Content: *Cliveevattcolotes steveteesi sp. nov.* (this paper) (type species); *C. lionotum* (Annandale, 1905).

ALEXTEESCOLOTES TEESI SP. NOV.

Holotype: A preserved specimen in the museum of IBEC, University Malaysia, Sarawak, Malaysia, specimen number: UNIMAS P0500, collected from Gunung Penrissen, Padawan, Sarawak State, Borneo (Malaysia), Latitude: 01.12°N., Longitude: 110.21°E. and at an elevation of 1,230 metres above sea level. This facility allows access to its holdings.

Paratype: A preserved specimen in the museum of IBEC, University Malaysia, Sarawak, Malaysia, specimen number: UNIMAS P0501, collected from Gunung Penrissen, Padawan, Sarawak State, Borneo (Malaysia), Latitude: 01.12°N., Longitude: 110.21°E. and at an elevation of 1,230 metres above sea level.

Diagnosis: This taxon, *Alexteescolotes teesi sp. nov.* has until now been treated as an outlier population of *Alexteescolotes rhacophorus* (Boulenger, 1899) and is separated from all other species by way of the same diagnosis as for that taxon. *A. teesi sp. nov.* is however readily separated from *A. rhacophorus* by coloration. *A. rhacophorus* has a strongly greenish iris, versus one that is only weakly greenish or even reddish brown in *A. teesi sp. nov.*. The anterior and posterior of the dorsal body surface and anterior tail of *A. rhacophorus* has a pattern including obvious greenish white markings in the form of blotches and spots of irregular shape. These are absent in *A. teesi sp. nov.*. The feet of *A. teesi sp. nov.* are characterized by darkening to a blackish colour at the ends of the digits, which is not seen in *A. rhacophorus*. The reddish blotch of irregular shape at the posterior of the dorsal surface narrows and runs continuously on the tail of *A. teesi sp. nov.*, but this is broken and not continuous in *A. rhacophorus*.

The genus *Alexteescolotes gen. nov.* type species *Gecko rhacophorus* Boulenger, 1899, more recently known *Ptychozoon rhacophorus* (Boulenger, 1899) and consisting of one species formerly included in the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as well as the second taxon *Alexteescolotes teesi sp. nov.*, is readily separated from *Ptychozoon* by the absence of imbricate parachute support scales which are present in all species of *Ptychozoon* and *Cliveevattcalotes gen. nov.* the species within *Cliveevattcalotes gen. nov.* also until now being included in *Ptychozoon*.

Alexteescolotes gen. nov. is further separated from both other genera by the absence of an infra-auricular cutaneous expansion as seen in all other species.

Lizards of the genus *Ptychozoon* Kuhl and Van Hasselt, 1822 as currently recognized are readily separated from all other living geckos by the following unique combination of characters: Digits strongly dilated, entirely webbed, with undivided lamellae below; all but the thumb and inner toe have a compressed curved distal phalanx with retractile claw, originating a little before the extremity of the digital expansion. Limbs and sides of head, body and tail with much developed membranous expansions acting as parachutes when lizards jump from elevated surfaces. Upper surfaces of the body are covered with juxtaposed granular scales and tubercles; lower surfaces have small, slightly imbricated scales; the parachute-membrane is covered above with imbricated square scales arranged like the bricks of a wall

to support it and are scaleless inferiorly. The genus *Alexteescolotes gen. nov.* is separated from *Ptychozoon* by the absence of these support scales and it was until now included in the same genus. Caudal lobe angling is slight to strong. Pupil is vertical. Males with praeanal pores. Adults range from 60-110 mm maximal snout-vent length.

The genus *Cliveevattcalotes gen. nov.* including the species until now known as *Ptychozoon lionotum* Annandale, 1905 and an allied form herein described as *Cliveevattcalotes steveteesi sp. nov.* and type species for the genus is separated from both *Ptychozoon* and *Cliveevattcalotes gen. nov.* by the presence of a predigital notch in a preantibrachial expansion, versus none in all other species in both other genera.

Min and Das (2012) wrote of the lizard that they identified as "*Ptychozoon rhacophorus* (Boulenger, 1899)", "Since the coloration in life of this poorly-known species remains unpublished, we provide here notes we took of both specimens in life" then providing a description and photo of their lizard, now herein treated as the types of *A. teesi sp. nov.*. Had these authors seen quality photos of both "*Ptychozoon rhacophorus*" from Sabah and their lizard in life which they also identified as the same species-level taxon, I am sure they too would have concluded that there were in fact two species involved.

While it is highly likely that there are further populations of *Alexteescolotes gen. nov.* in the 700 km plus range between known populations in Borneo where none have been found to date as speculated by Min and Das (2012), the population in this zone will certainly be disjunct and of ancient divergence, as evidenced by the large areas of unsuitable lowlands habitat between the known collection localities of both described species and the clear inability of specimens to cross these barriers in recent geological times.

A photo of the holotype of *A. teesi sp. nov.* in life is depicted in Lim and Das (2012) at page 178. A photo of *A. rhacophorus* from Sabah is depicted in Brown *et al.* (2012) on page 356 at the top of the page.

Distribution: Known only from the type locality, Gunung Penrissen, Padawan, Sarawak State, Borneo (Malaysia).

Etymology: Named in honor of human rights lawyer, Alex Tees of Bondi, New South Wales, Australia for services to wildlife conservation globally.

CLIVEEVATTALOTES STEVETEESI SP. NOV.

Holotype: A preserved specimen at the Field Museum of Natural History, Chicago, Illinois, USA, specimen number: FMNH 185455, collected from Selangor, Peninsula Malaysia. The Field Museum of Natural History, Chicago, Illinois, USA allows access to its collection.

Paratype: A preserved specimen at the Texas Memorial Museum, at the University of Texas at Austin in Austin, Texas, USA, specimen number: TNHC 54805, collected from Ulu Gombak, Peninsula Malaysia.

Diagnosis: Until now, the species *Cliveevattcolotes steveteesi sp. nov.* has been treated as a variant of *C. lionotum* (Annandale, 1905), formerly known as *Ptychozoon lionotum* Annandale, 1905.

Cliveevattcolotes steveteesi sp. nov. is readily separated from *C. lionotum* by the absence of one or more thick dark bars or markings on the upper labials as seen in *C. lionotum*.

C. steveteesi sp. nov. is further separated from *C. lionotum* by the absence of obvious blackish etchings on the borders of the cross markings on the dorsal surface of the body.

In *C. steveteesi sp. nov.* the posterior lighter blotch is commonly (but not always) crescent-shaped, as opposed to being irregular in shape.

While colour intensity does vary according to time of day and shedding cycle, it is evident that the northern species *C. lionotum* is generally of better defined and contrasting colour and pattern than the southern species *C. steveteesi sp. nov.* Both *C. steveteesi sp. nov.* and *C. lionotum* (Annandale, 1905)

can be readily separated from all other species of *Ptychozoon* and *Alexteescolotes* gen. nov. by the presence of a predigital notch in a preantibrachial expansion, versus none in all other species in both other genera.

Both *C. steveteesi* sp. nov. and *C. lionotum* (Annandale, 1905) can further be readily separated from morphologically similar species of *Ptychozoon* found in the same areas by the presence of four dark dorsal chevrons between the axilla and the groin (versus three in *P. trinotaterra* and *P. kaengkrahanense*) and a non-expanded tail terminus, as opposed to *P. kuhli* and related species in that complex, including those formally named in this paper, which possesses a widely expanded terminal flap.

Distribution: Southern parts of the Malay Peninsula in Malaysia. The species *C. lionotum* (Annandale, 1905) is herein confined to Thailand and Cambodia at the northern extremity of the Malay Peninsula region.

Etymology: Named in honor of Steve Tees formerly of Bondi New South Wales, Australia, son of Alex Tees, human rights lawyer, for services to wildlife conservation in Australia.

PTYCHOZOON CLIVEEVATTI SP. NOV.

Holotype: A preserved specimen at the Biodiversity Research and Teaching Collections [formerly Texas Cooperative Wildlife Collection], Department of Wildlife and Fisheries Sciences, Texas A and M University, College Station, Texas, specimen number: TCWC 30138 collected from Rumbai Camp, Sumatra Pekanbaru, Indonesia. This facility allows access to its holdings.

Paratype: A preserved female specimen at the Museum of Natural History, London, UK, specimen number: 1920.1.16.8 collected at Lebong Tandai, Benkuelen, Sumatra.

Diagnosis: *Ptychozoon cliveevatti* sp. nov. has until now been treated as a population of *Ptychozoon horsfieldii* (Gray, 1827). *P. horsfieldii* is herein confined to Borneo, whereas *P. cliveevatti* sp. nov. is the taxon previously treated as *P. horsfieldii* from central Sumatra.

P. cliveevatti sp. nov. is separated from *P. horsfieldii* by having a faded dorsal pattern and colours incorporating irregular dark blotches running along either side of the side of the neck towards the upper back where they join to form the first of two to four irregularly-shaped cross-bands across the back. This pattern is well-defined in *P. horsfieldii*.

The dark brown line running from the snout to the eye (and beyond) is thin in the anterior portion before the eye in *P. cliveevatti* sp. nov., as opposed to thick in *P. horsfieldii*. The top of the head is largely whitish in *P. cliveevatti* sp. nov. versus yellow-brown in *P. horsfieldii*.

P. horsfieldii, *P. cliveevatti* sp. nov. and *P. intermedium* Taylor, 1915 form a clade within the genus *Ptychozoon* and are separated from all other species in the genus as defined in this paper by the following: A lack of disposition of dorsal tubercles; 8-19 separated femorals (8-11 in *P. horsfieldii*, *P. cliveevatti* sp. nov. and 12-19 in *P. intermedium*), 10-12 precloacofemorals versus a greater number in all other species in the genus (as defined in this paper), distal lobes are not fused into a long terminal flap in the original tail.

Distribution: *P. cliveevatti* sp. nov. is known only from the island of Sumatra.

Etymology: Named in honour of human rights barrister, Clive Andreas Evatt of Turrumurra, New South Wales, Australia in recognition of his services to wildlife conservation globally.

PTYCHOZOON SUMATRAENSIS SP. NOV.

Holotype: A preserved specimen at the Museum of Vertebrate Zoology at the University of California, Berkeley, California, USA, specimen number: MVZ 239588 collected at 46 km E of Bengkulu, Cagar Alam Tabapenangjung, Kecamatan Kepahiang, Kabupaten Bengkulu, Sumatra. The Museum of Vertebrate Zoology at the University of California, Berkeley, California, USA allows access to its holdings.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now

having been treated as variants of it. These are *P. kuhli* Stejneger, 1902, *P. sumatraensis* sp. nov., *P. malayaensis* sp. nov., *P. johorensis* sp. nov., *P. engannoensis* sp. nov., *P. sulawesensis* sp. nov., *P. borneoensis* sp. nov. and *P. wallaceensis* sp. nov..

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes* gen. nov. and *Cliveevattcolotes* gen. nov. by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only.

While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate, while others are convex) as well as the number of precloacal femorals, the simplest way to differentiate each of the taxa is by way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis* sp. nov. but is instantly recognizable by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis* sp. nov. is whitish grey as opposed to yellowish white in *P. malayaensis* sp. nov.. Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis* sp. nov. is a dark brown colour as opposed to light brown in *P. malayaensis* sp. nov..

The front elbow of *P. malayaensis* sp. nov. has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis* sp. nov.. The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis* sp. nov. is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any

distinctive markings on the body at all. The intensity of the green is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis* sp. nov., *P. johorensis* sp. nov. and *P. borneoensis* sp. nov.. The species *P. sumatraensis* sp. nov., *P. sulawesiensis* sp. nov. and *P. wallaceaensis* sp. nov. have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesiensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the group by a dorsal coloration that is largely a reddish-purple and quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white. The species *Ptychozoon borneoensis* sp. nov. known only from the island of Borneo is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail. Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis* sp. nov. known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesiensis* sp. nov. but differs from that species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesiensis* sp. nov.

Distribution: *P. sumatraensis* sp. nov. is known only from the island of Sumatra, mainly in the western side.

Etymology: Named in reflection of where the taxon occurs (Sumatra, Indonesia).

PTYCHOZOON MALAYENSIS SP. NOV.

Holotype: A preserved specimen at the Field Museum of Natural History, Chicago, Illinois, USA, specimen number: FMNH Amphibians and Reptiles 143901, collected from Ulu Gombak Forest, Selangor, Malaysia. The Field Museum of Natural History, Chicago, Illinois, USA allows access to its holdings.

Paratypes: Two preserved specimens at the Field Museum of Natural History, Chicago, Illinois, USA, specimen numbers: FMNH Amphibians and Reptiles 185456 and 185457, collected from Bukit Lanjan, Selangor, Malaysia.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now having been treated as variants of it. These are *P. kuhli* Stejneger, 1902, *P. sumatraensis* sp. nov., *P. malayaensis* sp. nov., *P. johorensis* sp. nov., *P. engannoensis* sp. nov., *P. sulawesiensis* sp. nov., *P. borneoensis* sp. nov. and *P. wallaceaensis* sp. nov..

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes* gen. nov. and *Cliveevattcolotes* gen. nov. by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only.

While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate, while others are convex) as well as the number of prelocaal femorals, the simplest way to differentiate each of the taxa is by

way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is readily separated from other similar species on the basis of unique coloration as follows: It is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis* sp. nov. but is instantly recognizable by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis* sp. nov. is whitish grey as opposed to yellowish white in *P. malayaensis* sp. nov.. Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis* sp. nov. is a dark brown colour as opposed to light brown in *P. malayaensis* sp. nov..

The front elbow of *P. malayaensis* sp. nov. has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis* sp. nov.. The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis* sp. nov. is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any distinctive markings on the body at all. The intensity of the green is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis* sp. nov., *P. johorensis* sp. nov. and *P. borneoensis* sp. nov.. The species *P. sumatraensis* sp. nov., *P. sulawesiensis* sp. nov. and *P. wallaceaensis* sp. nov. have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesiensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the group by a dorsal coloration that is largely a reddish-purple and

quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white.

The species *Ptychozoon borneoensis* sp. nov. known only from the island of Borneo is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail. Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis* sp. nov. known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesiensis* sp. nov. but differs from that species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesiensis* sp. nov. .

Distribution: *Ptychozoon malayaensis* sp. nov. is known only from the western side of lower Peninsula Malaysia.

Etymology: Named in reflection of where the taxon occurs (Malay Peninsula).

PTYCHOZOON JOHORENSIS SP. NOV.

Holotype: A preserved adult specimen at the Forest Research Institute Malaysia (FRIM), Kepong, Kuala Lumpur, Malaysia, specimen number: FRIM 0700, collected at: Pulau Besar, Johor, West Malaysia. The Forest Research Institute Malaysia (FRIM), Kepong, Kuala Lumpur, Malaysia allows access to its holdings.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now having been treated as variants of it. These are *P. kuhli* Stejneger, 1902, *P. sumatraensis* sp. nov., *P. malayaensis* sp. nov., *P. johorensis* sp. nov., *P. engannoensis* sp. nov., *P. sulawesiensis* sp. nov., *P. borneoensis* sp. nov. and *P. wallaceaensis* sp. nov.

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes* gen. nov. and *Cliveevattcolotes* gen. nov. by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only.

While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate, while others are convex) as well as the number of precloacal femorals, the simplest way to differentiate each of the taxa is by way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis* sp. nov. but is instantly recognizable and separated from it by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis* sp. nov. is whitish grey as opposed to yellowish white in *P. malayaensis* sp. nov.. Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis* sp. nov. is a dark brown colour as opposed to light brown in *P. malayaensis* sp. nov..

The front elbow of *P. malayaensis* sp. nov. has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis* sp. nov.. The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis* sp. nov. is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any distinctive markings on the body at all. The intensity of the green is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis* sp. nov., *P. johorensis* sp. nov. and *P. borneoensis* sp. nov.. The species *P. sumatraensis* sp. nov., *P. sulawesiensis* sp. nov. and *P. wallaceaensis* sp. nov. have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesiensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the group by a dorsal coloration that is largely a reddish-purple and quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white. The species *Ptychozoon borneoensis* sp. nov. known only from the island of Borneo is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail. Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis* sp. nov. known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesiensis* sp. nov. but differs from that

species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesensis sp. nov.* ..

Distribution: *Ptychozoon johorensis sp. nov.* is known only from the Johor area on the Malay Peninsula, Malaysia, including offshore islands to the east, including areas (and offshore islands) to the immediate north of Johor.

Etymology: Named in reflection of where the taxon evidently mainly occurs (Johor).

PTYCHOZOON ENGANNOENSIS SP. NOV.

Holotype: A preserved female specimen at the Museum of Vertebrate Zoology, UC, Berkeley. California, USA, MVZ Herp Collection, MVZ Amphibian and reptile specimens, specimen number: 239358 collected from the vicinity of the village of Malakoni, Pulau Enggano, Kecamatan Enggano, Sumatra, Indonesia, Latitude -5.35 S., Longitude 102.27 E. The Museum of Vertebrate Zoology, UC, Berkeley. California, USA allows access to its holdings.

Paratype: A preserved male specimen at the Museum of Vertebrate Zoology, UC, Berkeley. California, USA, MVZ Amphibian and reptile specimens specimen number: 239596 collected from the vicinity of the village of Malakoni, Pulau Enggano, Kecamatan Enggano, Sumatra, Indonesia, Latitude -5.35 S., Longitude 102.27 E.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now having been treated as variants of it. These are *P. kuhli* Stejneger, 1902, *P. sumatraensis sp. nov.*, *P. malayaensis sp. nov.*, *P. johorensis sp. nov.*, *P. engannoensis sp. nov.*, *P. sulawesensis sp. nov.*, *P. borneoensis sp. nov.* and *P. wallaceaensis sp. nov.*

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes gen. nov.* and *Cliveevattcolotes gen. nov.* (as defined in this paper) by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only.

While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate, while others are convex) as well as the number of preloacal femorals, the simplest way to differentiate each of the taxa is by way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark

pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis sp. nov.* but is instantly recognizable by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis sp. nov.* is whitish grey as opposed to yellowish white in *P. malayaensis sp. nov.* Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis sp. nov.* is a dark brown colour as opposed to light brown in *P. malayaensis sp. nov.*

The front elbow of *P. malayaensis sp. nov.* has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis sp. nov.* The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis sp. nov.* is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any distinctive markings on the body at all. The intensity of the green is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis sp. nov.*, *P. johorensis sp. nov.* and *P. borneoensis sp. nov.* The species *P. sumatraensis sp. nov.*, *P. sulawesensis sp. nov.* and *P. wallaceaensis sp. nov.* have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the group by a dorsal coloration that is largely a reddish-purple and quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white. The species *Ptychozoon borneoensis sp. nov.* known only from the island of Borneo is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail. Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis sp. nov.* known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesensis sp. nov.* but differs from that species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesensis sp. nov.* ..

Distribution: *Ptychozoon engannoensis sp. nov.* is known only from Enganno Island off the west coast of Sumatra, Indonesia, where it is abundant.

Etymology: Named in reflection of where the taxon occurs (Enganno Island).

PTYCHOZOON SULAWESIENSIS SP. NOV.

Holotype: A preserved female specimen at the Museum of Vertebrate Zoology, UC, Berkeley. California, USA, MVZ

Amphibian and reptile specimens, specimen number: 268574 collected from Desa Takandeang, Kecamatan Tapalang, Kabupaten Mamuju, Propinsi Sulawesi Barat, Sulawesi Island, Indonesia, Latitude -2.80 S., Longitude 118.86 E. The Museum of Vertebrate Zoology, UC, Berkeley, California, USA allows access to its holdings.

Paratype: A preserved male specimen at the Museum of Vertebrate Zoology, UC, Berkeley, California, USA, MVZ Amphibian and reptile specimens, specimen number: 268575 collected from Desa Takandeang, Kecamatan Tapalang, Kabupaten Mamuju, Propinsi Sulawesi Barat, Sulawesi Island, Indonesia, Latitude -2.80 S., Longitude 118.86 E.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now having been treated as variants of it. These are *P. kuhli* Stejneger, 1902, *P. sumatraensis* sp. nov., *P. malayaensis* sp. nov., *P. johorensis* sp. nov., *P. engannoensis* sp. nov., *P. sulawesiensis* sp. nov., *P. borneoensis* sp. nov. and *P. wallaceaensis* sp. nov..

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes* gen. nov. and *Cliveevattcolotes* gen. nov. (as defined in this paper) by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only.

While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate, while others are convex) as well as the number of preloacal femorals, the simplest way to differentiate each of the taxa is by way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis* sp. nov. but is instantly recognizable by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis* sp. nov. is whitish grey as opposed to yellowish white in *P. malayaensis* sp. nov..

Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis* sp. nov. is a dark brown colour as opposed to light brown in *P. malayaensis* sp. nov..

The front elbow of *P. malayaensis* sp. nov. has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis* sp. nov.. The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis* sp. nov. is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any distinctive markings on the body at all. The intensity of the green is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis* sp. nov., *P. johorensis* sp. nov. and *P. borneoensis* sp. nov.. The species *P. sumatraensis* sp. nov., *P. sulawesiensis* sp. nov. and *P. wallaceaensis* sp. nov. have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesiensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the group by a dorsal coloration that is largely a reddish-purple and quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white. The species *Ptychozoon borneoensis* sp. nov. known only from the island of Borneo is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail. Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis* sp. nov. known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesiensis* sp. nov. but differs from that species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesiensis* sp. nov. ..

Distribution: *Ptychozoon P. sulawesiensis* sp. nov. is known only from the island of Sulawesi, Indonesia..

Etymology: Named in reflection of where the taxon occurs (Sulawesi).

PTYCHOZOON BORNEOENSIS SP. NOV.

Holotype: A preserved specimen at the Field Museum of Natural History, Chicago, Illinois, USA, specimen number: FMNH Amphibians and Reptiles 223206, collected from Bako National Park, Sarawak, Borneo, Malaysia. The Field Museum of Natural History, Chicago, Illinois, USA allows access to its holdings.

Paratype: A preserved specimen at the Field Museum of Natural History, Chicago, Illinois, USA, specimen number: FMNH Amphibians and Reptiles 149864, collected from the Bintulu District, Sarawak, Borneo, Malaysia.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now having been treated as variants of it. These are *P. kuhli*

Stejneger, 1902, *P. sumatraensis* sp. nov., *P. malayaensis* sp. nov., *P. johorensis* sp. nov., *P. engannoensis* sp. nov., *P. sulawesiensis* sp. nov., *P. borneoensis* sp. nov. and *P. wallaceaensis* sp. nov.

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes* gen. nov. and *Cliveevattcolotes* gen. nov. (as defined in this paper) by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only.

While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate, while others are convex) as well as the number of preloacal femorals, the simplest way to differentiate each of the taxa is by way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis* sp. nov. but is instantly recognizable by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis* sp. nov. is whitish grey as opposed to yellowish white in *P. malayaensis* sp. nov.. Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis* sp. nov. is a dark brown colour as opposed to light brown in *P. malayaensis* sp. nov..

The front elbow of *P. malayaensis* sp. nov. has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis* sp. nov.. The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis* sp. nov. is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any distinctive markings on the body at all. The intensity of the green

is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis* sp. nov., *P. johorensis* sp. nov. and *P. borneoensis* sp. nov.. The species *P. sumatraensis* sp. nov., *P. sulawesiensis* sp. nov. and *P. wallaceaensis* sp. nov. have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesiensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the group by a dorsal coloration that is largely a reddish-purple and quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white.

The species *Ptychozoon borneoensis* sp. nov. known only from the island of Borneo is separated from all other lizards in the species group by coloration, which is best described as follows: it is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail.

Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis* sp. nov. known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesiensis* sp. nov. but differs from that species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesiensis* sp. nov. .

Distribution: *Ptychozoon borneoensis* sp. nov. is known only from the island of Borneo.

Etymology: Named in reflection of where the taxon occurs (Borneo).

PTYCHOZOON WALLACEAENSIS SP. NOV.

Holotype: A preserved male specimen at the Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium (IRSNB), specimen number: 781 (Specimen Record: 347810) collected from the Island of Bacan, Maluku Islands, Indonesia. The Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium allows access to its holdings.

Paratypes: Two preserved female specimens at the Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium (IRSNB), specimen number: 781 (same as for the holotype) collected from the Island of Bacan, Maluku Islands, Indonesia.

Diagnosis: The species within the so-called *Ptychozoon kuhli* Stejneger, 1902 species complex are those species until now having been treated as variants of it. These are *P. kuhli* Stejneger, 1902, *P. sumatraensis* sp. nov., *P. malayaensis* sp. nov., *P. johorensis* sp. nov., *P. engannoensis* sp. nov., *P. sulawesiensis* sp. nov., *P. borneoensis* sp. nov. and *P. wallaceaensis* sp. nov..

All are diagnosed in relevant texts to date as *P. kuhli*. All species in this group can be readily separated from all other members of the genera *Ptychozoon*, *Alexteescolotes* gen. nov. and *Cliveevattcolotes* gen. nov. (as defined in this paper) by the presence of 2-6 straight rows of dorsal tubercles. All other species within the three genera have either no such rows, irregular rows, scattered rows or one medio-dorsal row only. While there is variation in the 8 species in terms of number of rows of dorsal tubercles and their shape (some being spinulate,

while others are convex) as well as the number of preloacal femorals, the simplest way to differentiate each of the taxa is by way of dorsal coloration and markings.

Ptychozoon kuhli Stejneger, 1902 a taxon herein restricted to Java is characterized by a muddy brownish coloration overlaying an indistinct pattern of circular to ovoid blotches running along either side of the midline. There are one or more broad and light colored cross-bands encircling the lower part of the leg. From the eye and through the ear and towards the back of the neck is a chocolate brown band with an irregular upper boundary, which then crosses the back of the nape anterior to the forelimbs. This and other areas of irregular dark pigment is interspersed with areas of lighter brown pigment in a pattern that is generally dull and indistinct, except on close inspection.

Ptychozoon sumatraensis sp. nov. a species from western Sumatra, is separated from all others in the species group by having a distinctive body pattern consisting of a mainly blackish body, in particular on the flanks and the presence of a largely unbroken thick light brown mid-dorsal stripe which thins and ends on the anterior part of the (original) tail. It is further characterized by distinctive light and dark cross bands on the front feet, being blackish and light brown in colour.

Ptychozoon malayaensis sp. nov. a species from the western side of the Malay Peninsula is a yellowish-brown lizard with a semi-distinct pattern on the dorsal surface. A narrow dark bar formed by an interface between dark yellow and light yellow pigment runs between the eyes. Anterior to the eye and posterior to the eye is a brown stripe (sometimes broken) with a distinct yellowish white lower boundary, which extends onto the back of the neck and when running across the body usually disappears or at best becomes a mere sliver of speckled dark pigment running across the body. The body does not have any red or grey sheen.

Ptychozoon johorensis sp. nov. a species with a centre of distribution around Johor on the eastern side of the southern Malay Peninsula is superficially similar to *P. malayaensis* sp. nov. but is instantly recognizable by the grayish as opposed to yellowish brown base colour on the dorsal surface. There is also an obvious reddish sheen running along the vicinity of the mid dorsal line and again on the lower flanks. The scales of the upper jaw (below the dark bar) of *P. johorensis* sp. nov. is whitish grey as opposed to yellowish white in *P. malayaensis* sp. nov.. Anterior to the eye and posterior to the eye is a black to charcoal black stripe (sometimes broken), which besides eventually crossing the back behind the neck and anterior to the front legs, is bordered anteriorly by an area of purplish-red pigment. The iris of *P. johorensis* sp. nov. is a dark brown colour as opposed to light brown in *P. malayaensis* sp. nov..

The front elbow of *P. malayaensis* sp. nov. has a distinctive yellow or white patch bounded by brown. The same patch is purple, bounded by grey in *P. johorensis* sp. nov.. The species *P. kuhli* has white under the eye with indistinct dark speckling.

The species *Ptychozoon engannoensis* sp. nov. is known only from Enganno Island, situated off the west coast of Sumatra. It is readily separated from the other species in the complex by its generally greenish dorsal coloration and general absence of any distinctive markings on the body at all. The intensity of the green is at its greatest along the upper flanks and tail which is unique in the species group in being a dark green colour. Exceptional to this is the upper labials beneath the eye, which as a group appear to be barred black and white (two black bars and white on each side). All others in the species group lack this character.

There is light only under the eye in *P. malayaensis* sp. nov., *P. johorensis* sp. nov. and *P. borneoensis* sp. nov.. The species *P. sumatraensis* sp. nov., *P. sulawesiensis* sp. nov. and *P. wallaceaensis* sp. nov. have a single bar of black running from the jaw to the eye, bounded by white on either side.

Ptychozoon sulawesiensis sp. nov. known only from the island of Sulawesi is readily separated from the other species in the

group by a dorsal coloration that is largely a reddish-purple and quite unlike any others in the group. Across the dorsal line of the body are about five alternating patches of yellow and dark reddish purple of similar width, the patches being of irregular size and shape. The flanks consist of an irregular pattern of red and black, which continues onto the legs and a heavily and distinctly banded tail. The extremities are notable in that the red patches or bars tend to lighten to become pinkish or even white. The species *Ptychozoon borneoensis* sp. nov. known only from the island of Borneo is a yellowish-brown lizard with a generally drab and indistinct dorsal pattern that is separated from the other species in the group by this background being punctuated by small bright irregularly shaped yellow spots running irregularly on or near the mid-dorsal line of the neck, body and anterior tail. Banding on the tail is barely discernible. Unique to this taxon are two dark tooth-shaped (vaguely triangular) markings on either side of the rear of the crown of the head, the pointed edge facing the posterior.

The species *Ptychozoon wallaceaensis* sp. nov. known only from the Island of Bacan, Maluku Islands, Indonesia is similar in most respects to *P. sulawesiensis* sp. nov. as described above, but is separated from that species by having an orangeish red coloration and a tail that is not clearly banded as seen in *P. sulawesiensis* sp. nov. .

Distribution: *Ptychozoon wallaceaensis* sp. nov. is known only from the type locality island of Bacan, Maluku Islands, Indonesia.

Etymology: Named in reflection of where the taxon occurs (Wallacea).

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CONFLICT OF INTEREST

There are no conflicts of interest in terms of this paper.

PTYCHOZOON SENSU LATO GENUS AND SPECIES LIST

PTYCHOZOON KUHL AND VAN HASSELT 1822.

Ptychozoon kuhli (Stejneger, 1902) (type species)

Ptychozoon bannaense Wang, Wang and Liu, 2016

Ptychozoon borneoensis sp. nov.

Ptychozoon cliveevatti sp. nov.

Ptychozoon engannoensis sp. nov.

Ptychozoon horsfieldii (Gray, 1827)

Ptychozoon intermedium Taylor, 1915

Ptychozoon johorensis sp. nov.

Ptychozoon kaengkrachanense Sumontha et al. 2012

Ptychozoon malayaensis sp. nov.

Ptychozoon nicobarensis Das and Vijayakumar, 2009

Ptychozoon sulawesiensis sp. nov.

Ptychozoon sumatraensis sp. nov.

Ptychozoon trinotaterra Brown, 1999

Ptychozoon wallaceaensis sp. nov.

CLIVEEVVATTCOLOTES GEN. NOV.

Cliveevattcolotes steveteesi sp. nov. (type species)

Cliveevattcolotes lionotum (Annandale, 1905)

ALEXTEESCOLOTES GEN. NOV.

Alexteescolotes rhacophorus (Boulenger, 1899) (type species)

Alexteescolotes teesi sp. nov.

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A revised taxonomy of the gecko genera *Lepidodactylus* Fitzinger, 1843, *Luperosaurus* Gray, 1845 and *Pseudogekko* Taylor, 1922 including the formal erection of new genera and subgenera to accommodate the most divergent taxa and description of 26 new species.

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ABSTRACT

There have been numerous studies published on species in the genera *Lepidodactylus* Fitzinger, 1843, *Luperosaurus* Gray, 1845, and *Pseudogekko* Taylor, 1922 with a view to assigning correct genus-level placement.

Some authors have split the genera into species groups, while others have reassigned species between genera. More recently in view of newly available molecular data, it has been proposed to merge one or more genera into an expanded genus *Gekko* Laurenti, 1768.

Relying on ancient divergences between species groups ascertained via molecular studies and consistent morphological differences between them, this paper provides a new taxonomy for the relevant genera (excluding *Gekko* and *Ptychozoon* Kuhl and Van Hassett, 1822, which are dealt with in separate papers) to better reflect known phylogeny of the relevant species.

The result is a division of *Lepidodactylus* including the groups 1-3 as defined by Brown and Parker (1977) are divided into 9 genera, eight formally named for the first time, as well as two newly named subgenera, *Luperosaurus* into four genera, two being named for the first time as well as a newly named subgenus and *Pseudogekko* retained as a single genus, but with a new subgenus formally named to accommodate the most divergent species.

Two other subgenera within *Lepidodactylus sensu lato* are formally named for the first time.

Twenty six obviously unnamed species are also formally described for the first time.

Keywords: Reptile; Taxonomy; Gecko; Lizard; Asia; Oceania; South-east Asia; Nomenclature; *Luperosaurus*; *Lepidodactylus*; *Gekko*; *Pseudogekko*; *Ptychozoon*; new genus; *Shireenhosergecko*; *Jackyhosergecko*; *Bobbottomcolotes*; *Martinekcolotes*; *Adelynhosergecko*; *Allengreercolotes*; *Borneocolotes*; *Rossadliercolotes*; *Charlespiersoncolotes*; *Georgemarioliscolotes*; new subgenus; *Borealiscolotes*; *Solomoncolotes*; *Haroldcoggercolotes*; *Robwatsoncolotes*; new species; *shirenhoserae*; *robjealousi*; *dalegibbonsi*; *jarradbinghami*; *petewhybrowi*; *jackyhoserae*; *bobbottomi*; *potens*; *crusmaculosus*; *adelynhoserae*; *sloppi*; *huonensis*; *madangensis*; *judyfergusonae*; *haydnmcphie*; *matteoae*; *brettbarnetti*; *stevebennetti*; *lucybennettae*; *lachlanmcphie*; *allengreeri*; *pauldarwini*; *paulwoolfi*; *haroldcoggeri*; *daranini*; *jenandersonae*.

INTRODUCTION

There have been numerous studies published on species in the genera *Luperosaurus* Gray, 1845, *Lepidodactylus* Fitzinger, 1843 and *Pseudogekko* Taylor, 1922 over the past 200 years with a view to assigning correct genus-level placement.

Some studies in more recent years have split the genera into morphologically and/or genetically divergent species groups (e.g. Brown and Parker 1977, Ineich 2008, Stubbs et al. 2017, Oliver et al. 2018 and many others), while other published papers have reassigned species between genera. More recently in view of newly available molecular data, it has been proposed to merge one or more genera into an expanded genus *Gekko* Laurenti, 1768.

Relying on ancient divergences between species groups as determined by recent phylogenetic studies and consistent morphological differences between the taxa, this paper provides a new and improved taxonomy for the relevant genera (excluding *Gekko* and *Ptychozoon* Kuhl and Van Hassett, 1822, which are dealt with in separate papers) to better reflect known phylogeny of the relevant species.

The result is a division of *Lepidodactylus* including the three species groups as defined by Brown and Parker (1977) into 9 genera, eight formally named for the first time, as well as two newly named subgenera, *Luperosaurus* into four genera, two being

named for the first time as well as a newly named subgenus and *Pseudogekko* is retained as a single genus, but divided into two divergent subgenera, one being named for the first time.

Each genus group assigned in this paper has a divergence from their nearest relatives of in excess of 25 MYA based on the evidence provided in Fig. 2 of Heinicke *et al.* 2012 or Oliver *et al.* (2018), with the exception of one genus grouping (formerly included in *Lepidodactylus*) that diverged from its nearest relatives just over 20 million years ago, those species being included in *Luperosaurus* (the type group) and so significantly different morphologically that a genus level division is more appropriate than the placement of the named species group within *Luperosaurus*.

The subgenus grouping within the genus *Pseudogekko* also has a divergence in excess of 25 MYA based on the same evidence, but due to the well-defined and ancient monophyly of this particular group of species, it is retained as a single genus.

In the process of auditing the relevant species and genera, twenty six obviously unnamed species have been identified and named in accordance with the rules set out in the *International Code of Zoological Nomenclature* (Ride *et al.* 1999)..

MATERIALS, METHODS AND RESULTS

These are inferred in both the abstract and introduction, but as a matter of trite I spell them out in a little more explicit detail.

The available literature was examined relevant to the genera *Lepidodactylus* Fitzinger, 1843, *Luperosaurus* Gray, 1845 and *Pseudogekko* Taylor, 1922 as defined by most authors in the previous 200 years. Additional to this has been inspection of specimens as required and possible in order to ascertain the classification of the genera.

Available information in the form of photos of specimens with good available locality data and other information was also utilized in this study.

As mentioned already, two of the three genera were split into a total of thirteen genera, with ten being formally named according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) for the first time. In the case of the split *Lepidodactylus* I have refrained from assigning subgenera, except when absolutely obviously necessary, even though a strong case can be made for doing so in some other groups.

The depth of divergence of the Philippine genus *Pseudogekko* Taylor, 1922 could have warranted a full genus-level split, because the most divergent species had divergences of over 25 MYA from the rest. They do however sit within a broadly monophyletic group. For that reason I have moved two species in that genus to a new subgenus. These are the species *Lepidodactylus brevipes* Boettger, 1897, now known as *Pseudogekko brevipes* (Boettger, 1867) and the morphologically similar *Pseudogekko atiorum* Davis, Watters, Köhler, Whitsett, Huron, Brown, Diesmos and Siler, 2015. In summary *Lepidodactylus* Fitzinger, 1843 has been divided as follows:

The so-called group 1 of species as defined by Brown and Parker (1977) has been split into four divergent genera, all formally named for the first time, with one of these groups split into two subgenera, the new subgenus also being formally named.

The so-called group 2 of species as defined by Brown and Parker (1977) has been split into four genera, all formally named for the first time and including a new subgenus.

The so-called group 3 of species as defined by Brown and Parker (1977) includes the type for the genus *Lepidodactylus* and the synonym *Amydosaurus* Gray, 1845 (also for the species *Platydactylus lugubris* Duméril and Bibron, 1836) and the so called group 3 of species is now the sole content of the genus.

Amydosaurus cannot therefore be an available name for any other species group.

Lepidodactylus is also split into two subgenera, the new subgenus being named herein for the first time.

The genus *Luperosaurus* Gray, 1845 has been divided four ways, with two genera formally named for the first time as well as a newly named subgenus.

Pseudogekko Taylor, 1922 has been split into two subgenera.

The divergence dates of each group alone as documented by Heinicke *et al.* (2012), Pyron *et al.* (2013) and others is more than sufficient justification for the splitting of the genera as understood to date. The morphological divergences of each species group as well documented in the cited literature further confirms the sensibility of these decisions.

The twenty six species newly named in this paper for the first time are obviously different to any previously named forms and synonyms I was able to identify. They do not reflect all that there is to be named in all the various genera. I am of the firm view that within most of the genera defined herein there remain further undescribed species.

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

This is in view of the conservation significance attached to the formal recognition of unnamed taxa at all levels and on the basis that further delays may in fact put these presently unnamed or potentially improperly assigned taxa at greater risk of extinction. This comment is made noting the extensive increase in human population in the relevant region and the general environmental destruction across the planet as documented by Hoser (1991), including low density areas without a large permanent human population.

I also note the abysmal environmental record of various National, State and Local governments in the relevant region over the past 200 years as detailed by Hoser (1989, 1991, 1993 and 1996) in the face of ongoing threats as diverse as introduced species, habitat destruction and modification, introduced pathogens and other factors and combinations thereof.

Published literature relevant to the taxonomy and nomenclature adopted within this paper includes the following:

Amarasinghe *et al.* (2009), Auffenberg (1980), Barnett and Emms (1997), Bauer (1994), Bauer and Sadlier (1994, 2000), Bauer and Henle (1994), Bauer and Vindum (1990), Bauer *et al.* (1995, 2007), Bavay (1869), Binaday *et al.* (2017), Bleeker (1859), Bobrov and Semenov (2008), Boettger (1897), Boissinot *et al.* (1997), Boulenger (1883, 1884, 1885a, 1885b, 1886, 1887a, 1887b, 1889, 1897, 1920), Brongersma (1934, 1948), Brown (1964), Brown and Alcalá (1978), Brown and Parker (1977), Brown and Tanner (1949), Brown *et al.* (1992), Brown and Diesmos (2000), Brown *et al.* (2000, 2007, 2010, 2011, 2012, 2013), Buden (2007a, 2007b, 2008, 2015a, 2015b), Buden and Taboroši (2016), Buden *et al.* (2014), Cogger (2014), Cogger *et al.* (1983), Crombie and Menz (2007), Crombie and Pregill (1999), Cuéllar and Kluge (1972), Daan and Hillenius (1966), Darevsky (1964), Das (2004, 2005), Das *et al.* (2008), Davis *et al.* (2015), de Rooij (1915), Dolino *et al.* (2009), Duméril and Bibron (1836), Ferner *et al.* (2000), Fitzinger (1843, 1861), Gardner (1985), Garman (1901, 1908), Gaulke (2011, 2013), Gaulke and Attenbach (2006), Gaulke *et al.* (2003, 2007), Gibbons and Brown (1988), Gibson-Hill (1947, 1950), Gill (1993), Girard (1858), Goldberg (2017), Gray (1845), Grismer (2011a, 2011b), Grismer *et al.* (2002), Günther (1864), Han *et al.* (2004), Heinicke *et al.* (2012), Henderson *et al.* (1996), Ineich (2008, 2011, 2009, 2015), Ineich and Ota (1993), Iskander and Mumpuni (2002), Jean-Baptiste (2013), Kiehlmann (2014), Kluge (1967, 1968), Koch (2011, 2012), Kopstein (1926), Lenort (2004), Loveridge (1948), Macleay (1877), Malkmus *et al.* (2002), Manthey and Grossmann (1997), McCoy (2006, 2015), Meiri *et al.* (2017), Mertens (1922, 1929, 1930, 1967), Morrison (2003), Müller (1895), Oliver and Hugall (2017), Oliver *et al.* (2018a, 2018b), Ota (1987, 1989), Ota and Crombie (1989), Ota and Hikida (1988), Ota *et al.* (1995, 1996, 1998, 2000), Pernetta and Black (1983), Peters (1867, 1874), Peters and Doria (1878), Pianka and Vitt (2003), Pyron *et al.* (2013), Radtkey *et al.* (1995), Ride *et al.* (1999), Röhl (2002, 2006), Röhl and von Düring (2008), Rösler (1995, 2000, 2017), Rösler *et al.* (2005, 2011, 2012), Russell (1979), Sadlier and Bauer (1997), Sakai (2016), Sang *et al.* (2009), Sanguila *et al.* (2016), Savage (2002), Siler and Brown (2010), Siler *et al.* (2010, 2012, 2013, 2014, 2016, 2017), Slevin and Leviton (1956), Smith

and Grant (1961), Somaweera and Somaweera (2009), Stejneger (1989, 1905, 1907), Stoliczka (1870), Stubbs *et al.* (2017), Supsup *et al.* (2016), Taylor (1915, 1917, 1918, 1919, 1922a, 1922b, 1923, 1944), Trautmann (1988), Turner and Green (1996), Volobouev *et al.* (1993), Wells and Wellington (1984, 1985), Werner (1900, 1913), Wilson and Swan (2010), Yamashiro and Ota (1998, 2005), Yamashiro *et al.* (2000), Zug (1991, 2006), Zug and Kaiser (2014), Zug *et al.* (2003, 2011, 2012) and sources cited therein.

In terms of the nomenclature adopted within this paper, the following points should also be noted.

Spellings of names should not be altered in any way unless absolutely mandatory according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999). Gender or alleged gender of names should not be altered. In the unlikely event that a later author or so-called "first reviser" seeks to merge named taxa, then the name to be used should be that first used in this paper, as dictated by page priority and order in the keywords of the abstract.

Material may be repeated in sequential descriptions in order to ensure that each complies wholly with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

Finally there are some other significant points worth mentioning which will not be immediately obvious to readers of this paper or the references cited herein.

Without exception, all newly named species have been shown to be separate species based on molecular data and depth of divergences. They also have morphological differences from one another.

Available information strongly indicates numerous more as yet unnamed species.

Invariably the named and unnamed species are separated by one or other of lowland areas between hills and mountains or deep sea trenches that remained submerged at times of glacial maxima.

The physical barriers themselves may not be the isolating mechanism in total, this also potentially including competing species, predators and other factors.

The molecular studies cited above do show clearly species and genus level differences between taxa.

However I must note that in the process of auditing these results, including inspection of relevant specimens subject of the morphological and molecular studies I repeatedly found that authors had misidentified specimens at the species level and in some cases even the genus level, and this being based on the genus-level taxonomy pre-dating this paper (i.e. the prevailing and used taxonomy and nomenclature at the relevant time).

As to why the misidentifications occurred, it is self evident that in the molecular study papers at least, the publishing authors either did not inspect the relevant specimens for which they put data in their papers or alternatively, any inspections done were either cursory, inadequate, or in the absence of knowing the diagnostic features of the alleged taxon.

These significant facts will explain why taxonomic statements and conclusions in this paper will be at times at variance with the earlier cited papers, which are still largely relied upon.

As this paper's purpose it to name unnamed taxa before they become extinct and not a critique of earlier papers by other authors I will not dwell at length on this.

However it is appropriate that I should also mention the serious issue of editorial control, and associated alleged peer review, including the serial offender, the online journal *Zootaxa* as dealt with in Hoser (2015a-f) and papers cited therein.

That journal (*Zootaxa*), described by many as PRINO (peer reviewed in name only), by way of example relevant here, published a paper Stubbs *et al.* (2017) complete with phylogram including erroneously identified species, rendering it largely useless and/or totally misleading to a casual reader who will not actually cross-check data with the relevant museum specimens. Even a cursory review by a non-expert could have fixed the most serious errors in that paper, but at even that level *Zootaxa* was an abject failure.

There have been calls from many quarters to make peer review

mandatory for all papers naming new taxa in terms of rules of the *International Code of Zoological Nomenclature* (future editions) and this is one I support. As a matter of trite, I doubt anyone on the planet would argue against the merits of peer review. However this peer review must be done properly and not in name only, or by a means to ensure a corrupt cohort cannot usurp the role of the ICZN in determining correct and legal nomenclature.

GENUS *LEPIDODACTYLUS* FITZINGER, 1843

Type species: *Platydactylus lugubris* Duméril and Bibron, 1843.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekcolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansors, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekcolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinekcolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) *Gekko*-like undivided scansors on all digits and a subcylindrical tail. Geckos in the genus *Shireenhosergecko* gen. nov. are separated from the other three genera *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinekcolotes* gen. nov. by one or other of the following five suites of characters:

1/ 40-55 mm snout-vent length in adults; digits moderately dilated, 10-11 entire fourth toe scansors covering the distal 2/3 of the toe; about 1/4 webbed between toes 3 and 4; 28-36 enlarged preanal and femoral pores extending to the distal end of the thigh; bearing a continuous series of 27-34 pores in males; length of hind limb usually more than 70% of axilla-groin distance (*S. mutahi*), or:
2/ 53-57 mm snout-vent length in adults; digits moderately dilated, 12-14 entire fourth toe scansors; 9-10 first toe scansors; webbed at the base only between the third and fourth toes; 32-36 enlarged preanal and femoral pores extending to the distal end of the thigh in a continuous series extending over the proximal 2/3 of the thigh;

bearing 28-30 pores in males (*S. oorti*), or:

3/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, limited interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. orientalis*, *S. petewhybrowi* sp. nov.), or:

4/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. shireenhoserae* sp. nov., *S. dalegibbonsi* sp. nov., *S. jarradbinghami* sp. nov., *S. robjealousi* sp. nov.), or:

5/ Webbing between toes 3 and 4 is less than 1/4 the length of the digits; more than 25 but fewer than 40 enlarged pre-anal-femoral scales in males, extending onto the distal portion of the thigh; enlarged preanal row not separated from scutes (*S. browni*).

Geckos in the genus *Jackyhosergecko* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one or other of the following three suites of characters:

1/ Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, dark reddish-brown dorsal colouration with orange-red patches on the rear upper labials and neck (*J. manni*), or:

2/ Fewer than 15 scansors under digit 4 of the hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 40 enlarged femoral scales; enlarged preanal scale row is separated by a row of short scales from short rows of enlarged preanal scutes webbing between digits 3 and 4 of hind leg less than 1/5 of the digit length; eye diameter is usually 41% or less than the head width (*J. euensis*), or:

3/ More than 15 scansors under digit 4 of hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males (*J. flavicularis*: Subgenus *Solomoncolotes* subgen. nov.).

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Martinecolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg; and one or other of:

1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crumaculosus* sp. nov.), or:

2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov.).

Geckos in the genus *Martinecolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Bobbottomcolotes* gen. nov. by the following characters: Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, colour is pale grey-brown above, with a few rather indistinct brown spots and scattered white dots and a brown streak running from the nostril to the eye; lower parts white with small brown spots (*M. listeri*).

Geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all consist of geckos formerly placed in the so-called group 2 of species within *Lepidodactylus* as defined by Brown and Parker (1977).

They can be separated from all other species formerly placed in *Lepidodactylus sensu lato* by the possession of well developed scansors on almost all the undersurface of the digits and with one or more, usually being a few, subterminal scansors divided

medially. The subcylindrical tail lacks fringes or flanges.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 48 mm and of moderate to solid build (*A. novaeguineae*, *A. buleli*, *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. oligoporus*, *A. pulcher* and *A. sloppi* sp. nov.).

Geckos in the genus *Allengreercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having 91-121 mid-body scale rows, 30 or more enlarged preanal / femoral scales, chin secondary postmentals and less than 20% webbing on feet (*A. allengreeri* sp. nov., *A. gardineri*, *A. guppyi*, *A. intermedius*, *A. lombocensis*, *A. pauldarwini* sp. nov., *A. shebae*, *A. tepukapili*, *A. vanuatuensis*).

Geckos in the genus *Borneocolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having the following suite of characters: Slightly depressed, but not as much as seen in *Lepidodactylus (sensu stricto)* as defined in this paper as found mainly in the Philippines; nine upper labials; nine or ten lower labials; 100-110 mid body rows, long narrow digits with scansors underneath the distal four fifths; the terminal scansor is entire, one subterminal scansor is wholly entire, deeply notched or wholly divided; eight scansors beneath toe 4. Webbing absent between digits 1 and 2, and slight webbing between digits 3 and 4. Adult males have a continuous series of 36-38 pores in preanal and femoral regions; femoral series extends almost to the distal end of the thigh; male cloacal spur is single and large, versus medium in other species in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. of the same size; tail is subcylindrical and without lateral ornamentation; dorsal body colouration is grayish brown and ventrally grayish tan; there is a pair of dark spots on the dorsolateral part of the basal swollen area of the tail (*B. ranauensis*).

Geckos in the genus *Rosssadliercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov. and *Borneocolotes* gen. nov. by having one or other of the following two suites of characters:

1/ Less than 35 enlarged scales in preanal/femoral region; sixteen or fewer scansors on toe IV; more than 25 enlarged scales in preanal/femoral region; less than 110 scales around midbody (*R. paurolepis*), or:

2/ The unique combination of both divided terminal scansors on all toes (including toe 4) and a nearly completely cylindrical tail without fringes or evidence of dorsoventral compression (*R. pantai*).

Distribution: Most species of *Lepidodactylus* as defined herein occur in the Philippines, but some occur north of the main archipelago and also widely across the Pacific.

Content: *Lepidodactylus lugubris* (Duméril and Bibron, 1836) (type species); *L. aureolineatus* Taylor, 1915; *L. balioburius* Ota and Crombie, 1989; *L. christiani* Taylor, 1917; *L. herrei* Taylor, 1923; *L. moestus* (Peters, 1867); *L. planicaudus* Stejneger, 1905; *L. woodfordi* Boulenger, 1887; *L. labialis* (Peters, 1867); *L. yami* Ota, 1987.

SUBGENUS BOREALISCOLOTES SUBGEN. NOV.

Type species: *Lepidodactylus balioburius* Ota and Crombie, 1989.

Diagnosis: Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov.,

Adelynhosergecko gen. nov., *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko gen. nov.*, *Jackyhosergecko gen. nov.*, *Bobbottomcolotes gen. nov.*, *Martinecolotes gen. nov.*, *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Distribution: Northern Philippines and islands north of there.

Etymology: *Borealiscolotes* in Latin means northern gecko, which is in reflection of the relative distribution of these species relative to others in the genus, or more widely in the clade of nine genera that have until now been treated as within a greater *Lepidodactylus*.

Content: *Lepidodactylus (Borealiscolotes) balioburii* Ota and Crombie, 1989 (type species); *Lepidodactylus (Borealiscolotes) christiani* Taylor, 1917; *Lepidodactylus (Borealiscolotes) yami* Ota, 1987.

GENUS SHIREENHOSERGECKO GEN. NOV.

Type species: *Shireenhosergecko shireenhoserae sp. nov.* (this paper).

Diagnosis: Species of gecko in the genera *Shireenhosergecko gen. nov.*, *Jackyhosergecko gen. nov.*, *Bobbottomcolotes gen. nov.* and *Martinecolotes gen. nov.* all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.*) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genus *Shireenhosergecko gen. nov.* are separated from the other three genera *Jackyhosergecko gen. nov.*, *Bobbottomcolotes gen. nov.* and *Martinecolotes gen. nov.* by one or other of the following five suites of characters:

- 1/ 40-55 mm snout-vent length in adults; digits moderately dilated, 10-11 entire fourth toe scansors covering the distal 2/3 of the toe; about 1/4 webbed between toes 3 and 4; 28-36 enlarged preanal and femoral pores extending to the distal end of the thigh; bearing a continuous series of 27-34 pores in males; length of hind limb usually more than 70% of axilla-groin distance (*S. mutahi*), or:
- 2/ 53-57 mm snout-vent length in adults; digits moderately dilated, 12-14 entire fourth toe scansors; 9-10 first toe scansors; webbed at the base only between the third and fourth toes; 32-36 enlarged preanal and femoral pores extending to the distal end of the thigh in a continuous series extending over the proximal 2/3 of the thigh; bearing 28-30 pores in males (*S. oorti*), or:
- 3/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, limited interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. orientalis*, *S. petewhybrowi sp. nov.*), or:
- 4/ 37-43 mm snout-vent length in adults; digits long and slender;

moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. shireenhoserae sp. nov.*, *S. jarradbinghami sp. nov.*, *S. dalegibbonsi sp. nov.*, *S. robjealousi sp. nov.*), or:

5/ Webbing between toes 3 and 4 is less than 1/4 the length of the digits; more than 25 but fewer than 40 enlarged pre-anal-femoral scales in males, extending onto the distal portion of the thigh; enlarged preanal row not separated from scutes (*S. browni*).

Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko gen. nov.*, *Jackyhosergecko gen. nov.*, *Bobbottomcolotes gen. nov.*, *Martinecolotes gen. nov.*, *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko gen. nov.*, *Jackyhosergecko gen. nov.*, *Bobbottomcolotes gen. nov.*, *Martinecolotes gen. nov.*, *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes subgen. nov.* type species *Lepidodactylus balioburii* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Distribution: New Guinea and nearby islands.

Content: *Shireenhosergecko shireenhoserae sp. nov.* (type species); *S. browni* (Pernetta and Black, 1983); *S. dalegibbonsi sp. nov.*; *S. jarradbinghami sp. nov.*; *S. mutahi* (Brown and Parker, 1977); *S. oortii* (Kopstein, 1926); *S. orientalis* (Brown and Parker, 1977); *S. petewhybrowi sp. nov.*; *S. robjealousi sp. nov.*.

GENUS JACKYHOSERGECKO GEN. NOV.

Type species: *Lepidodactylus euaensis* Gibbons and Brown, 1988.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko gen. nov.*, *Jackyhosergecko gen. nov.*, *Bobbottomcolotes gen. nov.*, *Martinecolotes gen. nov.*, *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials

are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genus *Jackyhosergecko* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one or other of the following three suites of characters:

1/ Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, dark reddish-brown dorsal colouration with orange-red patches on the rear upper labials and neck (*J. manni*), or:

2/ Fewer than 15 scansors under digit 4 of the hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 40 enlarged femoral scales; enlarged preanal scale row is separated by a row of short scales from short rows of enlarged preanal scutes webbing between digits 3 and 4 of hind leg less than 1/5 of the digit length; eye diameter is usually 41% or less than the head width (*J. euaensis*), or:

3/ More than 15 scansors under digit 4 of hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males (*J. flaviocularis*: Subgenus *Solomoncolotes* subgen. nov.).

Geckos in the genus *Shireenhosergecko* gen. nov. are separated from the other three genera *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one or other of the following five suites of characters:

1/ 40-55 mm snout-vent length in adults; digits moderately dilated, 10-11 entire fourth toe scansors covering the distal 2/3 of the toe; about 1/4 webbed between toes 3 and 4; 28-36 enlarged preanal and femoral pores extending to the distal end of the thigh; bearing a continuous series of 27-34 pores in males; length of hind limb usually more than 70% of axilla-groin distance (*S. mutahi*), or:

2/ 53-57 mm snout-vent length in adults; digits moderately dilated, 12-14 entire fourth toe scansors; 9-10 first toe scansors; webbed at the base only between the third and fourth toes; 32-36 enlarged preanal and femoral pores extending to the distal end of the thigh in a continuous series extending over the proximal 2/3 of the thigh; bearing 28-30 pores in males (*S. oorti*), or:

3/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, limited interdigital webbing; 10-12 entire fourth

toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. orientalis*, *S. petewhybrowi* sp. nov.), or:

4/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. shireenhoserae* sp. nov., *S. dalegibbonsi* sp. nov., *S. jarradbinghami* sp. nov., *S. robealouisi* sp. nov.), or:

5/ Webbing between toes 3 and 4 is less than 1/4 the length of the digits; more than 25 but fewer than 40 enlarged pre-anal-femoral scales in males, extending onto the distal portion of the thigh; enlarged preanal row not separated from scutes (*S. browni*).

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Martinecolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg; and one or other of:

1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crusmaculosus* sp. nov.), or:

2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov.).

Geckos in the genus *Martinecolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Bobbottomcolotes* gen. nov. by the following characters: Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, colour is pale grey-brown above, with a few rather indistinct brown spots and scattered white dots and a brown streak running from the nostril to the eye; lower parts white with small brown spots (*M. listeri*).

Distribution: *Jackyhosergecko* gen. nov. species occur in Tonga (*J. euaensis*), Fiji Islands (*J. manni* and *J. jackyhoserae* sp. nov.) and Guadalcanal, Solomon Islands (*J. flaviocularis*).

Etymology: Named in honour of my youngest daughter Jacky Hoser of Park Orchards, Victoria, Australia in recognition of her services to wildlife conservation over nearly 2 decades. For more detail see Hoser (2013) at page 5.

Content: *Jackyhosergecko euaensis* (Gibbons and Brown, 1988) (type species); *J. jackyhoserae* sp. nov.; *J. manni* (Schmidt, 1923); *J. flaviocularis* (Brown, McCoy and Rodda, 1992).

SUBGENUS SOLOMONCOLOTES SUBGEN. NOV.

Type species: *Lepidodactylus flaviocularis* Brown, McCoy and Rodda, 1992.

Diagnosis: Geckos in the subgenus *Solomoncolotes* subgen. nov. are separated from the nominate genus by the following suite of characters: More than 15 scansors under digit 4 of hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males.

Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials

are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genus *Jackyhosergecko* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one or other of the following three suites of characters:

1/ Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, dark reddish-brown dorsal colouration with orange-red patches on the rear upper labials and neck (*J. manni*), or:

2/ Fewer than 15 scansors under digit 4 of the hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 40 enlarged femoral scales; enlarged preanal scale row is separated by a row of short scales from short rows of enlarged preanal scutes webbing between digits 3 and 4 of hind leg less than 1/5 of the digit length; eye diameter is usually 41% or less than the head width (*J. euaensis*), or:

3/ More than 15 scansors under digit 4 of hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males (*J. flavivocularis*: this being the entirety of the subgenus *Solomoncolotes* subgen. nov. as presently known).

Geckos in the genus *Shireenhosergecko* gen. nov. are separated from the other three genera *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one or other of the following five suites of characters:

1/ 40-55 mm snout-vent length in adults; digits moderately dilated, 10-11 entire fourth toe scansors covering the distal 2/3 of the toe; about 1/4 webbed between toes 3 and 4; 28-36 enlarged preanal and femoral pores extending to the distal end of the thigh; bearing a continuous series of 27-34 pores in males; length of hind limb usually more than 70% of axilla-groin distance (*S. mutahi*), or:

2/ 53-57 mm snout-vent length in adults; digits moderately dilated, 12-14 entire fourth toe scansors; 9-10 first toe scansors; webbed at the base only between the third and fourth toes; 32-36 enlarged preanal and femoral pores extending to the distal end of the thigh in a continuous series extending over the proximal 2/3 of the thigh; bearing 28-30 pores in males (*S. oorti*), or:

3/ 37-43 mm snout-vent length in adults; digits long and slender;

moderately dilated, limited interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. orientalis*, *S. petewhybrowi* sp. nov.), or:

4/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. shireenhoserae* sp. nov., *S. dalegibbonsi* sp. nov., *S. jaradbinghami* sp. nov., *S. robjealousi* sp. nov.), or:

5/ Webbing between toes 3 and 4 is less than 1/4 the length of the digits; more than 25 but fewer than 40 enlarged pre-anal-femoral scales in males, extending onto the distal portion of the thigh; enlarged preanal row not separated from scutes (*S. browni*).

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Martinecolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg: and one or other of:

1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crumaculosus* sp. nov.), or:

2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov.).

Geckos in the genus *Martinecolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Bobbottomcolotes* gen. nov. by the following characters: Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, colour is pale grey-brown above, with a few rather indistinct brown spots and scattered white dots and a brown streak running from the nostril to the eye; lower parts white with small brown spots (*M. listeri*).

Distribution: Known only from Guadalcanal, Solomon Islands (*J. flavivocularis*) from the type series.

Etymology: The subgenus *Solomoncolotes* subgen. nov. is named in reflection as to where it originates and the type of lizard. The word *Solomoncolotes* in Latin literally means "Solomon Gecko".

GENUS BOBBOTTOMCOLOTES GEN. NOV.

Type species: *Bobbottomcolotes bobbottomi* sp. nov. (this paper).

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking

lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Martinecolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg; and one or other of:

- 1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crusmaculosus* sp. nov.), or:
- 2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov.).

Geckos in the genus *Shireenhosergecko* gen. nov. are separated from the other three genera *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one or other of the following five suites of characters:

- 1/ 40-55 mm snout-vent length in adults; digits moderately dilated, 10-11 entire fourth toe scansors covering the distal 2/3 of the toe; about 1/4 webbed between toes 3 and 4; 28-36 enlarged preanal and femoral pores extending to the distal end of the thigh; bearing a continuous series of 27-34 pores in males; length of hind limb usually more than 70% of axilla-groin distance (*S. mutahi*), or:
- 2/ 53-57 mm snout-vent length in adults; digits moderately dilated, 12-14 entire fourth toe scansors; 9-10 first toe scansors; webbed at the base only between the third and fourth toes; 32-36 enlarged preanal and femoral pores extending to the distal end of the thigh in a continuous series extending over the proximal 2/3 of the thigh; bearing 28-30 pores in males (*S. oorti*), or:
- 3/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, limited interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. orientalis*, *S. petewhybrowi* sp. nov.), or:
- 4/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. shireenhoserae* sp. nov., *S. dalegibbonsi* sp. nov., *S. jarradbinghami* sp. nov., *S. robjealouisi* sp. nov.), or:
- 5/ Webbing between toes 3 and 4 is less than 1/4 the length of the digits; more than 25 but fewer than 40 enlarged pre-anal-femoral scales in males, extending onto the distal portion of the thigh; enlarged preanal row not separated from scutes (*S. browni*).

Geckos in the genus *Jackyhosergecko* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. by one

or other of the following three suites of characters:

- 1/ Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, dark reddish-brown dorsal colouration with orange-red patches on the rear upper labials and neck (*J. manni*), or:
- 2/ Fewer than 15 scansors under digit 4 of the hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 40 enlarged femoral scales; enlarged preanal scale row is separated by a row of short scales from short rows of enlarged preanal scutes webbing between digits 3 and 4 of hind leg less than 1/5 of the digit length; eye diameter is usually 41% or less than the head width (*J. euaensis*), or:
- 3/ More than 15 scansors under digit 4 of hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males (*J. flaviocularis*: Subgenus *Solomoncolotes* subgen. nov.).

Geckos in the genus *Martinecolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Bobbottomcolotes* gen. nov. by the following characters: Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, colour is pale grey-brown above, with a few rather indistinct brown spots and scattered white dots and a brown streak running from the nostril to the eye; lower parts white with small brown spots (*M. listeri*).

Distribution: Known from central New Guinea, north and south of there on the mainland and also some immediately adjacent islands or landmasses.

Etymology: Named in honour of investigative journalist Robert (Bob) Bottom OAM in recognition of his services to public welfare in Australia. In the mid 1980's he did a series of reports about corruption involving fauna officials in New South Wales. In 1991 he reported on Police corruption in Victoria a full twelve months before other "mainstream" newspaper journalists dared run with the story. He authored numerous best-sellers about organized crime and corruption in Australian government including the following titles.

His ground-breaking books include:

- 1/ *Behind the Barrier*. Gareth Powell Associates, Gladesville, N.S.W.: published in 1969.
- 2/ *The Godfather in Australia: Organised Crime's Australian Connections*. A. H. and A. W. Reed, Terrey Hills, N.S.W.: published in 1979.
- 3/ *Without Fear or Favour*. Sun Books, South Melbourne: published in 1984.
- 4/ *Connections: Crime Rackets and Networks of Influence Down-Under*. Sun Books, South Melbourne: published in 1985.
- 5/ *Connections II: Crime Rackets and Networks of Influence in Australia*. Sun Books, South Melbourne: published in 1987.
- 6/ *Shadow of Shame: How the Mafia Got Away with the Murder of Donald Mackay*. Sun Books, South Melbourne: published in 1988.
- 7/ *Bugged! : Legal Police Telephone Taps Expose the Mr Bigs of Australia's Drug Trade*. Sun Books, South Melbourne: published in 1989.
- 8/ *Fighting Organised Crime: Triumph and Betrayal in a Lifelong Campaign*. BBP, Nelson Bay, N.S.W.: published in 2009.

The commercial success and public benefit caused by the publication of Bottom's earlier books inspired Sydney, Australia-based publisher Charles Pierson to commission publication of the book *Smuggled: The Underground Trade in Australia's Wildlife* (Hoser, 1993), which in hindsight was probably the most significant contribution to wildlife conservation in Australia's 200 history of European settlement.

Content: *Bobbottomcolotes bobbottomi* sp. nov. (type species); *B. crusmaculosus* sp. nov.; *B. magnus* (Brown and Parker, 1977); *B. potens* sp. nov.; *B. pumilus* (Boulenger, 1885).

GENUS MARTINEKCOLOTES GEN. NOV.

Type species: *Gecko listeri* Boulenger, 1889.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinekolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) *Gekko*-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genus *Martinekolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Bobbottomcolotes* gen. nov. by the following characters: Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, colour is pale grey-brown above, with a few rather indistinct brown spots and scattered white dots and a brown streak running from the nostril to the eye; lower parts white with small brown spots (*M. listeri* being monotypic for the genus).

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov. and *Martinekolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg; and one or other of:

1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crumaculosus* sp. nov.), or:
2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov.).

Geckos in the genus *Shireenhosergecko* gen. nov. are separated

from the other three genera *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinekolotes* gen. nov. by one or other of the following five suites of characters:

1/ 40-55 mm snout-vent length in adults; digits moderately dilated, 10-11 entire fourth toe scansors covering the distal 2/3 of the toe; about 1/4 webbed between toes 3 and 4; 28-36 enlarged preanal and femoral pores extending to the distal end of the thigh; bearing a continuous series of 27-34 pores in males; length of hind limb usually more than 70% of axilla-groin distance (*S. mutahi*), or:

2/ 53-57 mm snout-vent length in adults; digits moderately dilated, 12-14 entire fourth toe scansors; 9-10 first toe scansors; webbed at the base only between the third and fourth toes; 32-36 enlarged preanal and femoral pores extending to the distal end of the thigh in a continuous series extending over the proximal 2/3 of the thigh; bearing 28-30 pores in males (*S. oorti*), or:

3/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, limited interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. orientalis*, *S. petewhybrowi* sp. nov.), or:

4/ 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males (*S. shireenhoserae* sp. nov., *S. jarradbinghami* sp. nov., *S. dalegibbonsi* sp. nov., *S. robjealousi* sp. nov.), or:

5/ Webbing between toes 3 and 4 is less than 1/4 the length of the digits; more than 25 but fewer than 40 enlarged pre-anal-femoral scales in males, extending onto the distal portion of the thigh; enlarged preanal row not separated from scutes (*S. browni*).

Geckos in the genus *Jackyhosergecko* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinekolotes* gen. nov. by one or other of the following three suites of characters:

1/ Enlarged ventral scales limited to the preanal region and proximal position of the thighs; fewer than 20 enlarged scales in pore series; males with 15 or fewer preanal pores; digits are broadly dilated, dark reddish-brown dorsal colouration with orange-red patches on the rear upper labials and neck (*J. manni*), or:

2/ Fewer than 15 scansors under digit 4 of the hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 40 enlarged femoral scales; enlarged preanal scale row is separated by a row of short scales from short rows of enlarged preanal scutes webbing between digits 3 and 4 of hind leg less than 1/5 of the digit length; eye diameter is usually 41% or less than the head width (*J. euaensis*), or:

3/ More than 15 scansors under digit 4 of hind leg; more than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males (*J. flaviocularis*: Subgenus *Solomoncolotes* subgen. nov.).

Distribution: *Martinekolotes listeri* (Boulenger, 1889), the entirety of the genus as known, is known only from Christmas Island in the Indian Ocean, an island controlled by the imperialist colonial Australian government. The species may now be extinct there due to the recent introduction of feral pest species there combined with a general indifference to wildlife conservation by Australian governments and bureaucracies.

Etymology: Named in honour of Maryann Martinek of Bendigo, Victoria in recognition of her stellar contributions to wildlife conservation in Victoria. This includes for her courageous role in terms of exposing the misconduct of the State government wildlife department, calling itself DEWLP (at the time known as DSE) in 2009 for their culpability in relation to causing the Black Saturday Bushfire Holocaust (9 Feb), which besides killing 172 innocent Victorians, destroyed countless other people's lives and properties and wiped out many Highlands Leadbeater's Possums (*Gymnobelideus leadbeateri martinekae* Hoser, 2018) by the removal of their habitat.

Martinek played a critical role in exposing the biggest ever “fake news” story created and executed by a criminally culpable State Wildlife Department and their roting staff, this being the “Sam the Koala” scam, as detailed by Hoser (2010). See also Hoser (2018).

Content: *Martinekolotes listeri* (Boulenger, 1889) (monotypic).

GENUS ADELYNHOSERGECKO GEN. NOV.

Type species: *Lepidodactylus novaeguineae* Brown and Parker, 1977.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinekolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) *Gekko*-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all consist of geckos formerly placed in the so-called group 2 of species within *Lepidodactylus* as defined by Brown and Parker (1977).

They can be separated from all other species formerly placed in *Lepidodactylus sensu lato* by the possession of well developed scansors on almost all the undersurface of the digits and with one or more, usually being a few, subterminal scansors divided medially. The subcylindrical tail lacks fringes or flanges.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build (*A. buleli*, *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. novaeguineae*, *A.*

oligoporus, *A. pulcher* and *A. sloppi* sp. nov.).

Geckos in the genus *Allengreercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having 91-121 mid-body scale rows, 30 or more enlarged preanal / femoral scales, chin secondary postmentals and less than 20% webbing on feet (*A. allengreeri* sp. nov., *A. gardineri*, *A. guppyi*, *A. intermedius*, *A. lombocensis*, *A. pauldarwini* sp. nov., *A. shebae*, *A. tepukapili*, *A. vanuatuensis*).

Geckos in the genus *Borneocolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. by having the following suite of characters: Slightly depressed, but not as much as seen in *Lepidodactylus (sensu stricto)* as defined in this paper as found mainly in the Philippines; nine upper labials; nine or ten lower labials. 100-110 mid body rows, long narrow digits with scansors underneath the distal four fifths; the terminal scansor is entire, one subterminal scansor is wholly entire, deeply notched or wholly divided; eight scansors beneath toe 4. Webbing absent between digits 1 and 2, and slight webbing between digits 3 and 4. Adult males have a continuous series of 36-38 pores in preanal and femoral regions; femoral series extends almost to the distal end of the thigh; male cloacal spur is single and large, versus medium in other species in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. of the same size; tail is subcylindrical and without lateral ornamentation; dorsal body colouration is grayish brown and ventrally grayish tan; there is a pair of dark spots on the dorsolateral part of the basal swollen area of the tail (*B. ranauensis*).

Geckos in the genus *Rosssadliercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Borneocolotes* gen. nov. by having one or other of the following two suites of characters:

1/ Less than 35 enlarged scales in preanal/femoral region; Sixteen or fewer scansors on toe IV; More than 25 enlarged scales in preanal/femoral region; Less than 110 scales around midbody (*R. paurolepis*), or:

2/ The unique combination of both divided terminal scansors on all toes (including toe 4) and a nearly completely cylindrical tail without fringes or evidence of dorsoventral compression (*R. pantaï*).

Distribution: New Guinea, Micronesia, Admiralty Islands and Espiritu Santo, an island in the Vanuatu Archipelago.

Etymology: Named in honour of my eldest daughter Adelyn Hoser of Park Orchards, Victoria, Australia in recognition of her services to wildlife conservation over nearly 2 decades. For more detail see Hoser (2013) at pages 5 and 6.

Content: *Adelynhosergecko novaeguineae* (Brown and Parker, 1977) (type species); *A. buleli* (Ineich, 2008); *A. huonensis* sp. nov.; *A. madangensis* sp. nov.; *A. oligoporus* (Buden, 2007); *A. pulcher* (Boulenger, 1885); *A. sloppi* sp. nov..

GENUS ALLENGREERCOLOTES GEN. NOV.

Type species: *Lepidodactylus guppyi* Boulenger, 1884.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinekolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other

genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all consist of geckos formerly placed in the so-called group 2 of species within *Lepidodactylus* as defined by Brown and Parker (1977).

They can be separated from all other species formerly placed in *Lepidodactylus* *sensu lato* by the possession of well developed scansors on almost all the undersurface of the digits and with one or more, usually being a few, subterminal scansors divided medially. The subcylindrical tail lacks fringes or flanges.

Geckos in the genus *Allengreercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having 91-121 mid-body scale rows, 30 or more enlarged preanal / femoral scales, chin secondary postmentals and less than 20% webbing on feet (*A. allengreeri* sp. nov., *A. gardineri*, *A. guppyi*, *A. intermedius*, *A. lombocensis*, *A. pauldarwini* sp. nov., *A. shebae*, *A. tepukapili*, *A. vanuatuensis*).

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build (*A. buleli*, *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. novaeguineae*, *A. oligoporus*, *A. pulcher* and *A. sloppi* sp. nov.).

Geckos in the genus *Borneocolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. by having the following suite of characters: Slightly depressed, but not as much as seen in *Lepidodactylus* (*sensu stricto*) as defined in this paper as found mainly in the Philippines; nine upper labials; nine or ten lower labials. 100-110 mid body rows, long narrow digits with scansors underneath the distal four fifths; the terminal scansor is entire, one subterminal scansor is wholly entire, deeply notched or wholly divided; eight scansors beneath toe 4. Webbing absent between digits 1 and 2, and slight webbing between digits 3 and 4. Adult males have a continuous series of 36-38 pores in preanal and femoral regions; femoral series extends almost to the distal end of the thigh; male cloacal spur is single and large, versus medium in other species in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. of the same size; tail is subcylindrical and without lateral ornamentation; dorsal body colouration is grayish brown and

ventrally grayish tan; there is a pair of dark spots on the dorsolateral part of the basal swollen area of the tail (*B. ranauensis*).

Geckos in the genus *Rosssadliercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Borneocolotes* gen. nov. by having one or other of the following two suites of characters:

1/ Less than 35 enlarged scales in preanal/femoral region; Sixteen or fewer scansors on toe IV; More than 25 enlarged scales in preanal/femoral region; Less than 110 scales around midbody (*R. paurolepis*), or:

2/ The unique combination of both divided terminal scansors on all toes (including toe 4) and a nearly completely cylindrical tail without fringes or evidence of dorsoventral compression (*R. pantai*).

Distribution: Species within the genus *Allengreercolotes* gen. nov. occur in islands north and west of New Guinea including the Solomon Islands, Bismark Archipelago, Admiralty Islands, Vanuatu Islands, Rotuma Island, Tuvalu and also the Lesser Sunda Islands.

Content: *Allengreercolotes guppyi* (Boulenger, 1884) (type species); *A. allengreeri* sp. nov.; *A. gardineri* (Boulenger, 1897); *A. intermedius* (Darevsky, 1964); *A. lombocensis* (Mertens, 1929); *A. pauldarwini* sp. nov.; *A. shebae* (Brown and Tanner, 1949); *A. tepukapili* (Zug, Waitling, Alefaio, Alefaio and Ludescher, 2003); *A. vanuatuensis* (Ota, Fisher, Ineich, Case, Radtkey and Zug, 1998).

Etymology: Named in honour of Dr. Allen E. Greer who for many years was herpetology curator at the Australian Museum in Sydney, New South Wales, Australia, for services to herpetology well beyond the duties of his paid position. The name *Allengreercolotes* means Allengreer Gecko in Latin.

GENUS BORNEOCOLOTES GEN. NOV.

Type species: *Lepidodactylus ranauensis* Ota and Hikida, 1988.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburius* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. all consist of geckos formerly placed in

the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail. Geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all consist of geckos formerly placed in the so-called group 2 of species within *Lepidodactylus* as defined by Brown and Parker (1977).

They can be separated from all other species formerly placed in *Lepidodactylus sensu lato* by the possession of well developed scansors on almost all the undersurface of the digits and with one or more, usually being a few, subterminal scansors divided medially. The subcylindrical tail lacks fringes or flanges.

Geckos in the genus *Borneocolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. by having the following suite of characters: Slightly depressed, but not as much as seen in *Lepidodactylus (sensu stricto)* as defined in this paper as found mainly in the Philippines; nine upper labials; nine or ten lower labials. 100-110 mid body rows, long narrow digits with scansors underneath the distal four fifths; the terminal scansor is entire, one subterminal scansor is wholly entire, deeply notched or wholly divided; eight scansors beneath toe 4. Webbing absent between digits 1 and 2, and slight webbing between digits 3 and 4. Adult males have a continuous series of 36-38 pores in preanal and femoral regions; femoral series extends almost to the distal end of the thigh; male cloacal spur is single and large, versus medium in other species in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. of the same size; tail is subcylindrical and without lateral ornamentation; dorsal body colouration is grayish brown and ventrally grayish tan; there is a pair of dark spots on the dorsolateral part of the basal swollen area of the tail (*B. ranauensis*).

Geckos in the genus *Allengreercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having 91-121 mid-body scale rows, 30 or more enlarged preanal / femoral scales, chin secondary postmentals and less than 20% webbing on feet (*A. allengreeri* sp. nov., *A. gardineri*, *A. guppyi*, *A. intermedius*, *A. lombocensis*, *A. pauldarwini* sp. nov., *A. shebae*, *A. tepukapili*, *A. vanuatuensis*).

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build (*A. buleli*, *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. novaeguineae*, *A. oligoporus*, *A. pulcher* and *A. sloppi* sp. nov.).

Geckos in the genus *Rosssadliercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Borneocolotes* gen. nov. by having one or other of the following two suites of characters:
1/ Less than 35 enlarged scales in preanal/femoral region; Sixteen or fewer scansors on toe IV; More than 25 enlarged scales in preanal/femoral region; Less than 110 scales around midbody (*R. paurolepis*), or:

2/ The unique combination of both divided terminal scansors on all toes (including toe 4) and a nearly completely cylindrical tail without fringes or evidence of dorsoventral compression (*R. pantai*).

Distribution: Known only from the type locality of Ranau, Sabah, Malaysia, Borneo.

Content: *Borneocolotes ranauensis* (Ota and Hikida, 1988) (type species).

GENUS ROSSADLIERCOLOTES GEN. NOV.

Type species: *Lepidodactylus paurolepis* Ota, Fisher, Ineich and Case, 1995.

Diagnosis: Geckos of the genera *Lepidodactylus* Fitzinger, 1843, *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all until now treated as being of the single genus *Lepidodactylus* are separated from all other geckos by the following suite of characters: Digits are moderately long, more or less dilated, free or with a rudiment of web, inferiorly with a single or double series of transverse lamellae divided by a median groove and across the entire pad, forming the scansor, with very short and free compressed distal non-retractile clawed joint raising from the extremity of the dilated and compressed digit; inner digit clawless. Body covered above with granular scales, inferiorly with juxtaposed or subimbricate scales. Rostral and mental shields rounded; labials are much larger than adjacent scales. Pupil vertical. Males with preanal pores.

Lepidodactylus as defined herein are separated from the other genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov., *Martinecolotes* gen. nov., *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having a reduced number of scansors, with the terminal as well as a few subterminal scansors divided and a significantly depressed body and flat and broad tail, versus a subcylindrical tail lacking lateral flanges or spines in all the other genera.

This genus also consists of the entirety of the so-called group 3 of species as defined by Brown and Parker (1977).

Geckos in the subgenus *Borealiscolotes* subgen. nov. type species *Lepidodactylus balioburii* Ota and Crombie, 1989 being the only other subgenus within *Lepidodactylus* are separated from the nominate subgenus by the following suite of characters: less than 10 scansors confined to the distal half of broadly dilated and strongly webbed digits; a strongly flattened tail with a broad flange of skin; the nostril is separated by a scale from the rostral (as opposed to being in contact in specimens of the nominate subgenus).

Species of gecko in the genera *Shireenhosergecko* gen. nov., *Jackyhosergecko* gen. nov., *Bobbottomcolotes* gen. nov. and *Martinecolotes* gen. nov. all consist of geckos formerly placed in the so-called group 1 of species within *Lepidodactylus* as defined by Brown and Parker (1977). Collectively they are separated from the other genera formerly included within *Lepidodactylus* (these being genera *Lepidodactylus* Fitzinger, 1843, *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov.) by having numerous (genus) Gekko-like undivided scansors on all digits and a subcylindrical tail.

Geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. all consist of geckos formerly placed in the so-called group 2 of species within *Lepidodactylus* as defined by Brown and Parker (1977).

They can be separated from all other species formerly placed in *Lepidodactylus sensu lato* by the possession of well developed scansors on almost all the undersurface of the digits and with one or more, usually being a few, subterminal scansors divided medially. The subcylindrical tail lacks fringes or flanges.

Geckos in the genus *Rosssadliercolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Borneocolotes* gen. nov. by having one or other of the following two suites of characters:

1/ Less than 35 enlarged scales in preanal/femoral region; Sixteen or fewer scansors on toe IV; More than 25 enlarged scales in preanal/femoral region; Less than 110 scales around midbody (*R. paurolepis*), or:

2/ The unique combination of both divided terminal scansors on all toes (including toe 4) and a nearly completely cylindrical tail without fringes or evidence of dorsoventral compression (*R. pantai*).

Geckos in the genus *Borneocolotes* gen. nov. are readily separated from geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., and *Rosssadliercolotes* gen. nov. by

having the following suite of characters: Slightly depressed, but not as much as seen in *Lepidodactylus (sensu stricto)* as defined in this paper as found mainly in the Philippines; nine upper labials; nine or ten lower labials. 100-110 mid body rows, long narrow digits with scansors underneath the distal four fifths; the terminal scansor is entire, one subterminal scansor is wholly entire, deeply notched or wholly divided; eight scansors beneath toe 4. Webbing absent between digits 1 and 2, and slight webbing between digits 3 and 4. Adult males have a continuous series of 36-38 pores in preanal and femoral regions; femoral series extends almost to the distal end of the thigh; male cloacal spur is single and large, versus medium in other species in the genera *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, and *Rosssadliercolotes gen. nov.* of the same size; tail is subcylindrical and without lateral ornamentation; dorsal body colouration is grayish brown and ventrally grayish tan; there is a pair of dark spots on the dorsolateral part of the basal swollen area of the tail (*B. ranauensis*).

Geckos in the genus *Allengreercolotes gen. nov.* are readily separated from geckos in the genera *Adelynhosergecko gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having 91-121 mid-body scale rows, 30 or more enlarged preanal / femoral scales, chin secondary postmentals and less than 20% webbing on feet (*A. allengreeri sp. nov.*, *A. gardineri*, *A. guppyi*, *A. intermedius*, *A. lombocensis*, *A. pauldarwini sp. nov.*, *A. shebae*, *A. tepukapili*, *A. vanuatuensis*).

Geckos in the genus *Adelynhosergecko gen. nov.* are readily separated from geckos in the genera *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build (*A. buleli*, *A. huonensis sp. nov.*, *A. madangensis sp. nov.*, *A. novaeguineae*, *A. oligoporus*, *A. pulcher* and *A. sloppi sp. nov.*).

Distribution: Known only from Palau and Maluku islands

Content: *Rosssadliercolotes paurolepis* (Ota, Fisher, Ineich and Case, 1995) (type species); *R. pantai* (Stubbs, Karin, Arifin, Iskandar, Arida, Reilly, Bloch, Kusnadi and McGuire, 2017).

GENUS LUPEROSAURUS GRAY, 1845

Type species: *Luperosaurus cumingii* Gray, 1845.

Diagnosis: The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species. Therefore it is split herein into four genera.

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Charlespiersoncolotes gen. nov.*, *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed, (excluding subgenus *Haroldcoggercolotes subgen. nov.* a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from the other two genera (*Luperosaurus* and *Charlespiersoncolotes gen. nov.*) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and *Charlespiersoncolotes gen. nov.* are separated from *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scansors.

The genus *Charlespiersoncolotes gen. nov.* is most easily separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.*) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate

between that seen in members of the genera *Charlespiersoncolotes gen. nov.* and *Luperosaurus*, most notably weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be eventually assigned to a separate genus or subgenus.

Georgemarioliscolotes gen. nov. is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. is further separated from *Scelotretus* Fitzinger, 1843 by having

11-15 supralabials, versus 16 in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scansors on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843.

Distribution: Philippines and adjacent islands and one species from Borneo.

Content: *Luperosaurus cumingii* Gray, 1845 (type species); *L. angliit* Brown, Diesmos and Oliveros, 2011; *L. corfieldi* Gaulke, Rösler and Brown, 2007; *L. kubli* Brown, Diesmos and Duya, 2007; *L. macgregori* Stejneger, 1907; *L. palawanensis* Brown and Alcalá, 1978; *L. sorok* Das, Lakim and Kandaung, 2008.

CHARLESPIERSONCOLOTES GEN. NOV.

Type species: *Luperosaurus joloensis* Taylor, 1918.

Diagnosis: The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species. Therefore it is split herein into four genera.

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Charlespiersoncolotes gen. nov.* (described here), *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed, (excluding subgenus *Haroldcoggercolotes subgen. nov.* a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from the other two genera (*Luperosaurus* and *Charlespiersoncolotes gen. nov.*) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and *Charlespiersoncolotes gen. nov.* are separated from *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scansors.

The genus *Charlespiersoncolotes gen. nov.* is most easily separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.*) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate between that seen in members of the genera *Charlespiersoncolotes gen. nov.* and *Luperosaurus*, most notably weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be assigned to a separate genus or subgenus.

Georgemarioliscolotes gen. nov. is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. is further separated from *Scelotretus* Fitzinger, 1843 by having

11-15 supralabials, versus 16 in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scansors on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843.

Distribution: Philippines (Sulu Archipelago, Jolo Island, Mindanao) (*C. joloensis*) and Borneo (*C. yasumai*).

Etymology: Named in honour of publisher Charles Pierson as detailed in Hoser (2012) pages 67-68.

Content: *Charlespiersoncolotes joloensis* (Taylor, 1918) (type species); *C. yasumai* (Ota, Sengoku and Hikida, 1996).

GENUS SCLOTRETUS FITZINGER, 1843.

Type species: *Gekko vittatus* Houuttuyn, 1782.

Diagnosis: The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species. Therefore it is split herein into four genera.

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Charlespiersoncolotes gen. nov.*, *Scelotretus* Fitzinger, 1843 (described here) and *Georgemarioliscolotes gen. nov.* are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed (excluding subgenus *Haroldcoggercolotes subgen. nov.* a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes or none), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from the other two genera (*Luperosaurus* and *Charlespiersoncolotes gen. nov.*) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and *Charlespiersoncolotes gen. nov.* are separated from *Scelotretus* Fitzinger, 1843 (described here) and *Georgemarioliscolotes gen. nov.* by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scansors.

The genus *Charlespiersoncolotes gen. nov.* is most easily separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.*) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate between that seen in members of the genera

Charlespiersoncolotes gen. nov. and *Luperosaurus*, most notably weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be eventually assigned to a separate genus or subgenus.

Georgemarioliscolotes gen. nov. is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. is further separated from *Scelotretus* Fitzinger, 1843 by having 11-15 supralabials, versus 16

in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scansors on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843.

The subgenus *Scelotretus* is further defined and separated from the subgenus *Haroldcoggercolotes subgen. nov.* and all other geckos by the following suite of characters: Maximum SVL 140.0 mm; nares in contact with rostral; nasals 3-4; postmentals relatively small; dorsal tubercle rows 12-14; precloacal pores 14-58; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs with tubercles; lateral folds with tubercles; subcaudals not enlarged; head unicolorous, without pattern; nominate form with white, anteriorly bifurcated dorsal stripe (Rösler *et al.* 2011).

Distribution: Sulawesi and Palawan (subgenus *Haroldcoggercolotes subgen. nov.*), Indonesia, extending to the Solomon Islands and the Vanuatu Islands (subgenus *Scelotretus* Fitzinger, 1843).

Content: *Scelotretus vittatus* (Houuttuyn, 1782) (type species); *S. haroldcoggeri sp. nov.*; *S. daranini sp. nov.*; *S. gulat* (Brown, Diesmos, Duya, Garcia and Rico, 2010); *S. iskandari* (Brown, Supriatna and Ota, 2000); *S. jenandersonae sp. nov.*; *S. remotus* (Rösler, Ineich, Wilms and Bo'hme, 2012).

SUBGENUS HAROLDCOGGERCOLOTES SUBGEN. NOV.

Type species: *Luperosaurus iskandari* Brown, Supriatna and Ota, 2000.

Diagnosis: The subgenus *Haroldcoggercolotes subgen. nov.* a subgenus of *Scelotretus* Fitzinger, 1843 is separated from the nominate subgenus *Scelotretus* by having only slight webbing between the toes or none, versus half webbed in *Scelotretus*.

The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species. Therefore it is split herein into four genera.

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Charlespiersoncolotes gen. nov.*, *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* (described here) are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed, (excluding subgenus *Haroldcoggercolotes subgen. nov.* a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes or none), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from the other two genera (*Luperosaurus* and *Charlespiersoncolotes gen. nov.*) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and *Charlespiersoncolotes gen. nov.* are separated from *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scansors.

The genus *Charlespiersoncolotes gen. nov.* is most easily separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.*) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate between that seen in members of the genera *Charlespiersoncolotes gen. nov.* and *Luperosaurus*, most notably

weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be eventually assigned to a separate genus or subgenus.

Georgemarioliscolotes gen. nov. is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. is further separated from *Scelotretus* Fitzinger, 1843 by having 11-15 supralabials, versus 16 in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scancers on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843. The subgenus *Scelotretus* is further defined and separated from the subgenus *Haroldcoggercolotes subgen. nov.* and all other geckos by the following suite of characters: Maximum SVL 140.0 mm; nares in contact with rostral; nasals 3-4; postmentals relatively small; dorsal tubercle rows 12-14; precloacal pores 14-58; postcloacal tubercles 1-3; no webbing between fingers and toes; fore and hind limbs with tubercles; lateral folds with tubercles; subcaudals not enlarged; head unicolored, without pattern; nominate form with white, anteriorly bifurcated dorsal stripe (Rösler *et al.* 2011).

Distribution: Sulawesi and Palawan (subgenus *Haroldcoggercolotes subgen. nov.*).

Etymology: Named in honour of Dr. Harold G. Cogger, former deputy director and curator of herpetology at the Australian Museum in Sydney, New South Wales, Australia in recognition of a lifetime's high achievement in herpetology.

Content: *Scelotretus (Haroldcoggercolotes) gulat* (Brown, Diesmos, Duya, Garcia and Rico, 2010); *S. (Haroldcoggercolotes) iskandari* (Brown, Supriatna and Ota, 2000); *S. (Haroldcoggercolotes) jenandersonae sp. nov.*

GEORGEMARIOLISCOLOTES GEN. NOV.

Type species: *Gekko brooksi* Boulenger, 1920.

Diagnosis: The genus *Luperosaurus* Gray, 1845 as recognized to date is a paraphyletic assemblage of morphologically similar species. Therefore it is split herein into four genera.

All four genera, formerly included in *Luperosaurus*, namely *Luperosaurus*, *Charlespiersoncolotes gen. nov.*, *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* (described here) are readily separated from all other geckos by the following suite of characters: Digits strongly dilated, half webbed, (excluding subgenus *Haroldcoggercolotes subgen. nov.* a subgenus of *Scelotretus* Fitzinger, 1843 which has only slight webbing between the toes), with undivided, angularly curved lamellae below; all but thumb and inner toe with a very short, compressed, distal phalanx, with retractile claw; legs bordered with cutaneous lobes; upper and lower surfaces covered with juxtaposed granular scales; pupil vertical; males with preanal pores.

The genera *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* are readily separated from the other two genera (*Luperosaurus* and *Charlespiersoncolotes gen. nov.*) by the presence of a distinctly elongate head, elongate versus robust body shape (in the other genera) and the presence of enlarged interstitial granules.

The genera *Luperosaurus* and *Charlespiersoncolotes gen. nov.* are separated from *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.* by the presence of beadlike, granular dorsals, a stout and robust, stout body and deeply notched to divided penultimate subdigital scancers.

The genus *Charlespiersoncolotes gen. nov.* is most easily

separated from the genus *Luperosaurus* (as well as *Scelotretus* Fitzinger, 1843 and *Georgemarioliscolotes gen. nov.*) by the presence of strongly spinose dorsal tubercles.

The species originally described as *Luperosaurus palawanensis* Brown and Alcalá, 1978 has many characteristics intermediate between that seen in members of the genera *Charlespiersoncolotes gen. nov.* and *Luperosaurus*, most notably weakly spinose dorsal scales and it is placed in the genus *Luperosaurus*, even though no other members of the genus *Luperosaurus* have spinose dorsal scales of any sort. It is likely it may need to be eventually assigned to a separate genus or subgenus.

Georgemarioliscolotes gen. nov. is readily separated from *Scelotretus* Fitzinger, 1843 by having a small round to ovoid auricular opening, versus a narrow elliptical or vertical slit-like opening in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. is further separated from *Scelotretus* Fitzinger, 1843 by having 11-15 supralabials, versus 16 in *Scelotretus* Fitzinger, 1843 and 10-14 infralabials, versus 15-18 in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has round-hexagonal, flat convex dorsal body scales, versus hexagonal flat dorsal body scales in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has flat or convex dorsal body tubercles, versus flat only in *Scelotretus* Fitzinger, 1843.

Georgemarioliscolotes gen. nov. has 28-40 preanofemorals versus 12 or less in *Scelotretus* Fitzinger, 1843, 11-13 scancers on toe 1, versus 10 in *Scelotretus* Fitzinger, 1843 and small anteriormost chinshields, versus slightly enlarged in *Scelotretus* Fitzinger, 1843.

Distribution: Sumatra (*G. brooksii*) and West Malaysia (*G. browni*).

Content: *Georgemarioliscolotes brooksii* (Boulenger, 1920) (type species); *G. browni* (Russell, 1979).

GENUS PSEUDOGEKKO TAYLOR, 1922

Type species: *Luperosaurus compressicarpus* Taylor, 1915.

The genus *Pseudogekko* Taylor, 1922 is separated from all other geckos by the following suite of characters: Digits entirely dilated with infradigital lamellae extending to the base forming the scancers, those on tip divided; digits except inner with sessile retractile claw; a slight web between digits; no lateral skin fold; no enlarged chin shields; pupil vertical. Body compressed, with a narrow abdominal region; 10-16 pre cloacal pores present in males in a single row.

Distribution: Philippines.

Content: *Pseudogekko compressicarpus* (Taylor, 1915) (type species); *P. atiorum* Davis, Watters, Köhler, Whitsett, Huron, Brown, Diesmos and Siler, 2015; *P. brevipes* (Boettger, 1897); *P. chavacano* Siler, Welton, David, Watters, Davey, Diesmos, Diesmos and Brown, 2014; *P. ditoy* Siler, Welton, David, Watters, Davey, Diesmos, Diesmos and Brown, 2014; *P. isapa* Siler, Davis, Diesmos, Guinto, Whitsett and Brown, 2016; *P. pungkaypinin* Siler, Welton, David, Watters, Davey, Diesmos, Diesmos and Brown, 2014; *P. smaragdinus* (Taylor, 1922); *P. sumiklab* Siler, Davis, Watters, Freitas, Griffith, Binday, Lobos, Amarga and Brown, 2017.

SUBGENUS ROBWatSONCOLOTES SUBGEN. NOV.

Type species: *Lepidodactylus brevipes* Boettger 1897, now known as *Pseudogekko brevipes* (Boettger, 1867).

Diagnosis: *Robwatsoncolotes subgen. nov.* can be separated from all other species in the genus *Pseudogekko* Taylor, 1915 (also being the nominate subgenus) by the following characters: Body size moderate with SVL 34.5-52 mm; total length 72-95.8 mm; axilla-groin distance moderate being 17.8-29.8 mm; head length moderate being 6.2-10.4 mm; midbody width 4.5-6.7 mm; head width 5.6-8.5 mm; snout length 3.8-6.0 mm; toe 4 scancers 15-20; finger 3 scancers 12-16; paravertebrals 211-218; ventrals 96-123; supralabials 13-16; infralabials 14-17; circumorbitals 33-46; precloacal pores 12-16; femoral pores absent; conspicuous dorsolateral spotting present; limb spotting absent; tail banding absent; body striping absent; interorbital banding present.

Distribution: Central Phillipines.

Etymology: Named in honour of Brisbane wildlife controller and

herpetologist Robert Watson for services to wildlife conservation and education in the south-east Queensland region.

Content: *Pseudogeckko (Robwatsoncolotes) brevipes* (Boettger, 1867) (type species); *P. (Robwatsoncolotes) atiorum* Davis, Watters, Köhler, Whitsett, Huron, Brown, Diesmos and Siler, 2015.

SHIRENHOSERGECKO SHIRENHOSERAE SP. NOV.

Holotype: A preserved female specimen at the American Museum of Natural History, New York City, USA, specimen number: AMNH 76766 collected from Mount Riu on Sudest Island, Louisiadae Archipelago, Papua New Guinea. This facility allows access to its holdings.

Diagnosis: *Shirenhosergecko shirenhoserae sp. nov.* is morphologically similar in most respects to the species *S. orientalis* Brown and Parker, 1977 from Papua New Guinea (as defined by those authors), but is readily separated from that species by extensive webbing on the feet.

S. shirenhoserae sp. nov. is readily separated from all other species in the genus *Shirenhosergecko gen. nov.* as defined within this paper by the following suite of characters: 37-43 mm snout-vent length in adults; digits long and slender; moderately dilated, extensive interdigital webbing; 10-12 entire fourth toe scancers covering the distal 2/3 of the toe; 19-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males.

S. shirenhoserae sp. nov. is separated from the morphologically similar *S. jarradbinghami sp. nov.* by having a grayish-brown as opposed to dark brownish dorsal colouration. *S. shirenhoserae sp. nov.* is also slightly more robust in build than *S. jarradbinghami sp. nov.*

Distribution: Restricted to Sudest Island, Louisiadae Archipelago, Papua New Guinea.

Etymology: Named in honour of my wife, Shireen Hoser of Melbourne, Victoria, Australia for decades of service to wildlife conservation in Australia.

SHIRENHOSERGECKO PETEWHYBROWI SP. NOV.

Holotype: A preserved specimen at Louisiana State University Museum of Natural Science. LSUMZ Herps Collection, specimen number: LSUMZ Herps 95824, collected at "Amau River Camp #1, about a 4 hour walk from Amau Village, good uncut primary forest.", Latitude -9.98 S., Longitude 148.46 E. This facility allows access to its holdings.

Diagnosis: *Shirenhosergecko petewhybrowi sp. nov.* is similar in most respects to *S. orientalis* Brown and Parker (1977), as defined by those authors, from which it is most readily differentiated by its brownish ground colour, versus grayish or grayish tan in *S. orientalis*. The forelimbs of *S. petewhybrowi sp. nov.* are characterized by dark blotches versus banding in *S. orientalis*.

Distribution: Known only the vicinity of the type locality, but presumably in similar appropriate habitat further afield. This and most other species referred to in the paper are presumably under threat from deforestation and generalized human created habitat destruction, as well as human movement of so-called "weedy species" that may outcompete for resources.

Etymology: Named in honour of Peter (Pete) Whybrow of Taggerty, north-east Victoria, Australia for services to herpetology spanning some decades.

SHIRENHOSERGECKO ROBJEALOUSI SP. NOV.

Holotype: A preserved specimen at the Bernice P. Bishop Museum at Honolulu, Hawaii, USA specimen number: BPBM Herp-BPBM 25943, collected from the Kamiali Wildlife Management Area, 1.3 km N and 6.2 km W of Cape Dinga, Morobe Province, Papua New Guinea, Latitude -7.30 S., Longitude 147.09 E. This facility allows access to its holdings.

Diagnosis: Both *Shirenhosergecko robjealoui sp. nov.* and *S. dalegibbonsi sp. nov.* are morphologically similar to *S. orientalis* Brown and Parker (1977) and would be defined as that using the criteria of Brown and Parker (1977), but are readily separated from that taxon by their larger size (40-48 mm snout-vent in adults, versus 37-43 mm) and of more stocky build (stocky vs moderate). The forelimbs of both *S. robjealoui sp. nov.* and *S. dalegibbonsi*

sp. nov. are characterised by the presence of spots or peppering, versus banding in *S. orientalis*.

S. robjealoui sp. nov. is separated from *S. dalegibbonsi sp. nov.* by a darkish and well-marked dorsum, versus relatively indistinct markings in *S. dalegibbonsi sp. nov.*

Distribution: Known only from the type locality, but presumably from other suitable rocky habitats in the general region, noting that the holotype was collected on a cliff face.

Etymology: Named in honour of Rob Jealous of Strathdale, Bendigo, Victoria, Australia, in recognition of many decades of services to herpetology in Australia, in particular with regards to his support of scientists and keepers working with dangerously venomous elapid snakes as well as his services to the conservation of these often killed and mistreated reptiles.

SHIRENHOSERGECKO DALEGIBBONSI SP. NOV.

Holotype: A preserved specimen at the Bernice P. Bishop Museum at Honolulu, Hawaii, USA specimen number: BPBM Herp-BPBM 42860, collected from Umwate, Papua New Guinea, Latitude -9.26 S., Longitude 148.28 E. at an elevation of about 943 metres. This facility allows access to its holdings.

Diagnosis: Both *Shirenhosergecko robjealoui sp. nov.* and *S. dalegibbonsi sp. nov.* are morphologically similar to *S. orientalis* Brown and Parker (1977) and would be defined as that using the criteria of Brown and Parker (1977), but are readily separated from that taxon by their larger size (40-48 mm snout-vent in adults, versus 37-43 mm) and of more stocky build (stocky vs moderate).

The forelimbs of both *S. robjealoui sp. nov.* and *S. dalegibbonsi sp. nov.* are characterised by the presence of spots or peppering, versus obvious banding in *S. orientalis*.

S. robjealoui sp. nov. is separated from *S. dalegibbonsi sp. nov.* by a darkish and well-marked dorsum, versus relatively indistinct markings in *S. dalegibbonsi sp. nov.*

Shirenhosergecko robjealoui sp. nov. and *S. dalegibbonsi sp. nov.* are clearly more like one another than they are to any other species in the genus.

Distribution: Known only from in and around the type locality, but presumably from other suitable habitats in the general region.

Etymology: Named in honour of Dale Gibbons of Maiden Gully, Bendigo, Victoria, Australia, in recognition of many decades of services to herpetology in Australia, in particular with regards to his support of scientists and keepers working with dangerously venomous elapid snakes as well as his services to the conservation of these often killed and mistreated reptiles, as well as often unacknowledged services on countless wildlife field surveys in various parts of Australia, for which he never sought or got any payment. He has also made significant financial contributions to poor and impoverished people in Thailand at great financial cost and hardship to himself.

SHIRENHOSERGECKO JARRADBINGHAMI SP. NOV.

Holotype: A preserved specimen at the Bernice P. Bishop Museum at Honolulu, Hawaii, USA specimen number: BPBM Herp-BPBM 17229, collected from Misima Island, Papua New Guinea, Latitude -10.66 S., Longitude 152.69 E. This facility allows access to its holdings.

Diagnosis: *S. shirenhoserae sp. nov.* is separated from the morphologically similar *S. jarradbinghami sp. nov.* by having a grayish-brown as opposed to dark brownish dorsal colouration. It is the only species likely to be confused with *S. jarradbinghami sp. nov.* *S. shirenhoserae sp. nov.* is also slightly more robust in build than *S. jarradbinghami sp. nov.* and the two can be separated on that basis also.

Shirenhosergecko shirenhoserae sp. nov. is otherwise morphologically similar in most respects to the species *S. orientalis* Brown and Parker, 1977 from Papua New Guinea (as defined by those authors), but is readily separated from that species by extensive webbing on the feet (and same applies for *S. jarradbinghami sp. nov.*).

S. shirenhoserae sp. nov. is readily separated from all other species in the genus *Shirenhosergecko gen. nov.* as defined within this paper by the following suite of characters: 37-43 mm snout-vent length in adults; digits long and slender; moderately

dilated, extensive interdigital webbing; 10-12 entire fourth toe scansors covering the distal 2/3 of the toe; 20-24 enlarged scales in pore series confined to the preanal region only or only a few on the base of the thigh, bearing about 19 preanal pores in males.

Distribution: Known only from the type locality, Misima Island and presumably restricted to Misima Island, but this is by no means certain.

Etymology: Named in honour of Jarrad Bingham of Bacchus Marsh, Victoria, Australia, a councilor at the Moorabool Shire Council also in Victoria, for services to local government and wildlife conservation, in particular that of venomous snakes.

JACKYHOSERGECKO JACKYHOSERAE SP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number: R.30511, collected from Namuana, Kadavu Island, Fiji, Latitude -19.00 S., Longitude 178.25 E. The Australian Museum in Sydney, New South Wales, Australia allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number: R.30512, collected from Namuana, Kadavu Island, Fiji, Latitude -19.00 S., Longitude 178.25 E.

2/ A preserved specimen at the California Academy of Sciences, USA, CAS Herpetology collection, specimen number: 190626, collected from about 3 km. south of Richmond High School at Kadavu Island, Fiji, Latitude -19.09 S., Longitude 178.08 E.

Diagnosis: *Jackyhosergercko jackyhoserae* sp. nov. is similar in most respects to *J. manni* (Schmidt, 1923), a species most commonly known to date as *Lepidodactylus manni*.

While colouration of both species is variable, *J. jackyhoserae* sp. nov. is readily separated from *J. manni* by a general lack of well-defined white peeping in the region of the snout and upper labials in particular. *J. jackyhoserae* sp. nov. is generally a grayish brown, versus a dark or reddish-dark brown in *J. manni*, irrespective of dorsal markings or patterning on the specimens.

Distribution: *J. jackyhoserae* sp. nov. is currently only known from the Island of Kadavu, Fiji. *J. manni* is currently only known from and therefore restricted to Viti Levu (the main Fiji island) and nearby Ovalau.

Etymology: Named in honour of my youngest daughter Jacky Hoser of Park Orchards, Victoria, Australia in recognition of her services to wildlife conservation over nearly 2 decades. See also Hoser (2013) at page 5 for more detail.

BOBBOTTOMCOLOTES BOBBOTTOMI SP. NOV.

Holotype: A preserved male specimen in the American Museum of Natural History, New York City, USA, specimen number: AMNH 185087 collected from the Adelbert Mountains in the Madang District of Papua New Guinea. This facility allows access to its holdings.

Paratype: A preserved female specimen in the American Museum of Natural History, New York City, USA, specimen number: AMNH 185088 collected from the Adelbert Mountains in the Madang District of Papua New Guinea.

Diagnosis: *Bobbottomcolotes bobbottomi* sp. nov. would until now have been defined as *B. magnus* Brown and Parker, 1977 as defined by them in that paper, but is separated from that taxon by its smaller adult size 38-44 mm snout vent, versus 50-70 mm snout vent in *B. magnus*, as well 25-28 femoral / preanal pores in males versus 40-50 noticeably enlarged ones in *B. magnus*. The taxon described in this paper *Bobbottomcolotes potens* sp. nov. is similar in most respects to *B. magnus* which it has been treated as until now, but is most readily separated from that taxon by colouration being grayish tan in dorsal colouration as opposed to dark brown.

B. bobbottomi sp. nov. is separated from the also morphologically similar *B. pumilus* (Boulenger, 1885) and *B. crusmaculosus* sp. nov. by having digits of moderate length versus relatively short and dilated digits in *B. pumilus*.

It is further separated from that species by having about 20% webbing between toes 3 and 4, versus almost 50% webbing between the toes in *B. pumilus* and *B. crusmaculosus* sp. nov.. There are no other described species in the genus

Bobbottomcolotes gen. nov.

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergercko* gen. nov. and *Martinecolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg: and one or other of:

1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crusmaculosus* sp. nov.), or:
2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov., *B. pumilus*).

Distribution: Believed to be confined to the Adelbert Mountains in the Madang District of Papua New Guinea.

Etymology: Named in honour of Robert (Bob) Bottom OAM, one of the foremost investigative journalists in Australian history. He authored numerous best-selling books about government corruption and organized crime in Australia in the 1970's and 1980's and years since then. For more detail, see also the etymology for the genus *Bobbottomcolotes* gen. nov.

BOBBOTTOMCOLOTES POTENS SP. NOV.

Holotype: A preserved specimen at the Museum of Comparative Zoology, Harvard University, USA, specimen number: MCZ Herp R-54246, collected from Ebabaang, Huon Peninsula, Papua New Guinea, Latitude -6.49 S., Longitude 147.46 S. This facility allows access to its holdings.

Paratype: A preserved specimen at the Royal Belgian Institute of Natural Sciences, Brussels, Belgium, specimen number: RBINS Reptilia 423150, collected at Papua New Guinea, Latitude -5.85 S., Longitude 145.92 E.

Diagnosis: Until now the species *Bobbottomcolotes potens* sp. nov. has been treated as an outlier population of *B. magnus* Brown and Parker, 1977 as defined by them in that paper.

While morphologically similar in most respects to *B. magnus* which it has been treated as until now, it is most readily separated from that taxon by colouration being grayish tan in dorsal colouration as opposed to dark brown, as well as a slightly more slender build. Dorsal markings in *B. potens* sp. nov. are relatively indistinct, versus clearly visible, albeit variable in *B. magnus*.

The species *Bobbottomcolotes bobbottomi* sp. nov. would until now have been defined as *B. magnus* Brown and Parker, 1977 as defined by them in that paper, and is separated from that taxon and *B. potens* sp. nov. by its smaller adult size 38-44 mm snout vent, versus 50-70 mm snout vent in *B. magnus* and *B. potens* sp. nov., as well 25-28 femoral / preanal pores in males versus 40-50 noticeably enlarged ones in *B. magnus* and *B. potens* sp. nov..

B. bobbottomi sp. nov. is separated from the also morphologically similar *B. pumilus* (Boulenger, 1885) and *B. crusmaculosus* sp. nov. by having digits of moderate length versus relatively short and dilated digits in *B. pumilus* and *B. crusmaculosus* sp. nov..

It is further separated from that species by having about 20% webbing between toes 3 and 4, versus almost 50% webbing between the toes in *B. pumilus* and *B. crusmaculosus* sp. nov..

There are no other described species in the genus *Bobbottomcolotes* gen. nov..

Geckos in the genus *Bobbottomcolotes* gen. nov. are separated from the other three genera, *Shireenhosergecko* gen. nov., *Jackyhosergercko* gen. nov. and *Martinecolotes* gen. nov. by the following characters: More than 25 enlarged preanal/femoral scales, extending onto distal portions of the thigh; 25 or more preanal/femoral pores in males; fewer than 15 scansors under digit 4 of the hind leg: and one or other of:

1/ Webbing between digits 3 and 4 of the hind legs is more than 1/3 the length of the digit (*B. pumilus*, *B. crusmaculosus* sp. nov.), or:
2/ Webbing between digits 3 and 4 of the hind legs is less than 1/4 the length of the digits; 40 or more enlarged preanal/femoral scales; 10 or more subdigital scansors on digit 1 of hind foot (*B. magnus*, *B. bobbottomi* sp. nov., *B. potens* sp. nov.).

Distribution: *B. potens* sp. nov. is apparently restricted to the Mountains of the Huon Peninsula only.

Etymology: Potens means strong in Latin and reflects the general size and build of this taxon relative to other similar related species.

BOBBOTTOMCOLOTES CRUSMACULOSUS SP. NOV.

Holotype: A preserved specimen at the Louisiana State University Museum of Natural Science. LSUMZ Herps Collection, (USA), specimen number: LSUMZ Herps 97472, collected from Daru Island at the mangroves at the South-east end of the airstrip, Western Province, Papua New Guinea.

The Louisiana State University Museum of Natural Science. LSUMZ Herps Collection allows access to its holdings.

Paratype: A preserved specimen at the Museum of Comparative Zoology, Harvard University, USA, specimen number: MCZ Herp R-137586, collected at Daru Island, Western Province, Papua New Guinea, Latitude -9.08 S., Longitude 143.21 E.

Diagnosis: *Bobbottomcolotes crusmaculosus* sp. nov. has until now been treated as a population of *B. pumilus* (Boulenger, 1885), which it is clearly most closely related to. It is readily separated from *B. pumilus* by the presence of patches of dark brown speckling on the fore and hind limbs as well as patches of dark brown pigment on the anterior upper labials. The dorsal dark and light markings posterior to the pelvis are distinct and clear in *B. crusmaculosus* sp. nov., versus ill defined in *B. pumilus*.

Distribution: Mainland and immediately adjacent islands on the south-west coast of Papua New Guinea in the general vicinity of the type locality.

Etymology: *Crusmaculosus* literally means spotted or speckled legs in Latin, which differentiates this taxon from its most closely related congeneric species.

ALLENGREERCOLOTES ALLENGREERI SP. NOV.

Holotype: A preserved mature male specimen at the Museum of Comparative Zoology (MCZ) at Harvard University, Cambridge, Massachusetts, USA, specimen number: MCZ 135433 collected from Ndrova Island in the Admiralty Islands.

Paratypes: Two preserved mature male specimens at the Museum of Comparative Zoology (MCZ) at Harvard University, Cambridge, Massachusetts, USA, specimen numbers: MCZ 135434 and MCZ 139418 collected from Ndrova Island in the Admiralty Islands.

Diagnosis: *Allengreercolotes allengreeri* sp. nov. is similar in most respects to *A. guppyi* Boulenger, 1884 which it would otherwise key as, using the key in Brown and Parker (1977).

It is however it is separated from that species by its adult snout-vent length of 31-38 mm, versus 45-50 mm in *A. guppyi*, and by having 34-46 femoral / preanal pores in males versus 39-52 in *A. guppyi*.

The femoral / preanal pores in *A. allengreeri* sp. nov. are moderate, versus prominent in *A. guppyi*.

A. guppyi Boulenger, 1884 and *A. pauldarwini* sp. nov. (this paper) are most readily separated from one another by colour as explained in the description following this one, but both otherwise visibly share the same features as for *A. guppyi* as explained above.

Distribution: *A. allengreeri* sp. nov. is known only from the type locality Ndrova Island in the Admiralty Islands, but presumably occurs on adjacent islands.

Etymology: Named in honour of Dr. Allen E. Greer, curator of herpetology for many years at the Australian Museum in Sydney, New South Wales, Australia, (now retired) in recognition of his services to herpetology globally.

ALLENGREERCOLOTES PAULDARWINI SP. NOV.

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number R.93499 collected at Malaupaina, Solomon Islands, Latitude -10.15 S., Longitude 161.58 E. The Australian Museum is a government-owned facility that allows access to its holdings.

Paratype: A preserved specimen at the Museum of Comparative Zoology, Harvard University, USA, specimen number: MCZ Herp R-115559 collected from Malaita, Solomon Islands, Latitude -9 S,

Longitude 161 E.

Diagnosis: *Allengreercolotes pauldarwini* sp. nov. is similar in most respects to *A. guppyi* Boulenger, 1884, but is most easily separated from that taxon by colouration. Both species have about six smallish blackish spots along each flank. In *A. guppyi* there is peppering in a line between the spots and/or the borders of each spot is irregular and is not well defined. In *A. pauldarwini* sp. nov. the spots are well-defined and there is no black pigment joining these spots in the intervening spaces.

In *A. pauldarwini* sp. nov. the dorsal surface is characterized by a well-defined pattern of light yellowish-brownish-grey triangles along the mid-dorsal line, surrounded by relatively unmarked darker grayish brown. By contrast in *A. guppyi* the dorsal markings are ill defined and invariably peppered with black speckling.

The iris of *A. pauldarwini* sp. nov. is reddish, versus brownish to bluish-grey in *A. guppyi*.

A. pauldarwini sp. nov. is depicted in life on plate 2, image F of McCoy 1989. *A. guppyi* in life is depicted in plates 19 and 20 of McCoy (2006). The species *Allengreercolotes allengreeri* sp. nov. is similar in most respects to *A. guppyi* Boulenger, 1884, (and *A. pauldarwini* sp. nov.) which it would otherwise key as, using the key in Brown and Parker (1977).

A. allengreeri sp. nov. is however separated from these species by its adult snout-vent length of 31-38 mm, versus 45-50 mm in *A. guppyi* and *A. allengreeri* sp. nov. and by having 34-46 femoral / preanal pores in males versus 39-52 in *A. guppyi* and *A. allengreeri* sp. nov..

The femoral / preanal pores in *A. allengreeri* sp. nov. are moderate, versus prominent in *A. guppyi* and *A. pauldarwini* sp. nov..

It is worth noting that within the known populations of *A. guppyi* colouration also varies significantly between the islands and the retention of the northwestern populations in the Solomon Islands and Bougainville as a single species *A. guppyi* is based on a lack of molecular evidence separating them and the fact that ice-age sea levels meant that most relevant islands were a single connected landmass, theoretically allowing free movement between them.

Distribution: *Allengreercolotes pauldarwini* sp. nov. occurs in the main eastern islands and nearby smaller islands of the Solomon Islands, including the type locality Malaupaina, Malaita and San Cristobel.

Etymology: Named in honour of Paul Darwin, manager of the Brush Ski Lodge, Mount Hotham, Victoria, for some years preceding 2018, in recognition for his services to the downhill snow skiing industry, including actively diverting young Australians and foreigners away from their mobile phones and computers and actually engaging in outdoor sport, exercise and appreciation of their natural environment.

ALLENGREERCOLOTES PAULWOOLFI SP. NOV.

Holotype: A preserved specimen at the United States National Museum, better known as the Smithsonian, at Washington, DC, United States of America, specimen number: USNM 533293, collected from Temotu Village at Mahele Point, Taumako Island, Duff Islands, Solomon Islands, Latitude -9.88 S., Longitude 167.175 S. This facility allows access to its holdings.

Diagnosis: *A. paulwoolfi* sp. nov. is similar in most respects to *A. vanuatuensis* (Ota, Fisher, Ineich, Case, Radtkey and Zug, 1998), as defined by Ota, Fisher, Ineich, Case, Radtkey and Zug (1998) from which it is separated by having a moderately well-defined row of 4-6 well-spaced dark grey to black spots on the lower flanks.

A. paulwoolfi sp. nov. is further separated from *A. vanuatuensis* by the presence of one or more well defined scattered dark blotches on both fore and hind limbs.

Distribution: Known only from the type locality.

Etymology: Named in honour of Paul Woolf of Walloon, Queensland, Australia, in recognition of many years services to herpetology including as foundation president of the Herpetological Society of Queensland Incorporated.

ADELYNHOSERGECKO ADELYNHOSERAE SP. NOV.

Holotype: A preserved specimen at the South Australian Museum in Adelaide, South Australia, Australia, specimen number: SAMA

Herpetology R64666, collected from New Britain, Papua New Guinea, Latitude -5.61 S., Longitude 151.41 E. The South Australian Museum in Adelaide, South Australia, Australia allows access to its holdings.

Diagnosis: *Adelynhosergecko adelynhoserae sp. nov.* from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae sp. nov.* is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae sp. nov.* instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae sp. nov.* are whitish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergusonae sp. nov.* from Unea Island, is separated from *A. adelynhoserae sp. nov.* by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae sp. nov.*, which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae sp. nov.* are indistinct, versus prominent in *A. judyfergusonae sp. nov.*

Otherwise both species are similar.

The species *A. haydnmcpheiei sp. nov.* from Ambitle Island, is readily separated from both *A. adelynhoserae sp. nov.* and *A. judyfergusonae sp. nov.* by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheiei sp. nov.*

The species *A. matteoae sp. nov.* from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi sp. nov.* from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko gen. nov.* in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae sp. nov.*, *A. judyfergusonae sp. nov.*, *A. haydnmcpheiei sp. nov.* and *A. matteoae sp. nov.* are also readily separated from *A. novaeguineae*, *A. sloppi sp. nov.*, *A. huonensis sp. nov.*, *A. madangensis sp. nov.*, *A. brettbarnetti sp. nov.*, *A. stevebennetti sp. nov.*, *A. lucybennettae sp. nov.* and *A. lachlanmcpheiei sp. nov.* by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti sp. nov.* from Woodlark Island and *A. stevebennetti sp. nov.* from Boiaboaiwaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. The can both be separated from that taxon by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti sp. nov.* is further separated from the other species (*A. brettbarnetti sp. nov.*) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettae sp. nov.* from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and *A. lachlanmcpheiei sp. nov.* from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheiei sp. nov.* is separated from *A. lucybennettae sp. nov.* by the presence of about four well defined and irregular

shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is separated from *A. novaeguineae* and *A. huonensis sp. nov.* and others in the genus by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface, these sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko gen. nov.* are readily separated from geckos in the genera *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi sp. nov.* does exceed 41 mm in snout-vent length.

Distribution: Known only from New Britain in the Bismarck Archipelago of Papua New Guinea.

Etymology: Named in honour of my eldest daughter Adelyn Hoser of Park Orchards, Victoria, Australia in recognition of her services to wildlife conservation over nearly 2 decades.

ADELYNHOSERGECKO SLOPPI SP. NOV.

Holotype: A preserved specimen at the Museum of Natural History, London, UK, specimen number: BMNH 1974.3027 collected from Waigie Island (=Waigeo), north-west New Guinea. This is a facility that allows access to its holdings.

Diagnosis: The species *Adelynhosergecko sloppi sp. nov.* from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko gen. nov.* in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build. Otherwise it would key out as that species according to that in Brown and Parker (1977).

Distribution: Known only from the type locality, but potentially more widespread in North-west New Guinea.

Etymology: Named in honour of the family Great Dane, named Slopp, in recognition of his services in protecting the scientific research facilities of this author for the nearly six years preceding the publication of this paper.

ADELYNHOSERGECKO HUONENSIS SP. NOV.

Holotype: A preserved specimen at the National Museum of Natural History, Smithsonian Institution, Washington, DC, USA, specimen number: USNM Amphibians and Reptiles 119248, collected at Gusika, Morobe Province, Papua New Guinea, Latitude -6.42 S., Longitude 147.83 E. The National Museum of Natural History, Smithsonian Institution allows access to its holdings.

Paratypes: Two preserved specimens at the American Museum of Natural History, New York, USA, specimen numbers: AMNH 66665 and 66667, collected at Gusika, Morobe Province, Papua New Guinea, Latitude -6.42 S., Longitude 147.83 E.

Diagnosis: *Adelynhosergecko huonensis sp. nov.* is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an

indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

The eight species *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettae* sp. nov., and *A. lachlanmcpheeii* sp. nov. are separated from the other species in the genus by having webbing between digits 3 and 4 of the hind leg being less than a quarter of the length of the digits and more than four fifths as well as having 16 or less subdigital scansors on digit four of the hind leg.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi* sp. nov. does exceed 41 mm in snout-vent length.

Distribution: Apparently restricted to the Huon Peninsula, New Guinea.

Etymology: Named in reflection of where the species occurs, being the Huon Peninsula.

ADELYNHOSERGECKO MADANGENSIS SP. NOV.

Holotype: A preserved specimen at the American Museum of Natural History, New York, USA, specimen number: AMNH 100209, collected from Mount Nibo, Sepik District, Papua New Guinea. The American Museum of Natural History allows access to its holdings.

Paratypes: 1/ A preserved specimen at the American Museum of Natural History, New York, USA, specimen number: AMNH 100210, collected from Mount Nibo, Sepik District, Papua New Guinea.

2/ A preserved specimen at the Museum of Vertebrate Zoology, University of California, Berkeley, California, USA, specimen number: MVZ Amphibian and reptile specimens 89674, collected at Wanuma, Adelbert Mountains, Madang Province, Papua New Guinea.

Diagnosis: The newly described species *Adelynhosergecko huonensis* sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described herein. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

The eight species *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettae* sp. nov., and *A. lachlanmcpheeii* sp. nov. are separated from the other species in the genus by having webbing between digits 3 and 4 of the hind leg being less than a quarter of the length of the digits and more than four fifths as well as having 16 or less subdigital scansors on digit four of the hind leg.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi* sp. nov. does exceed 41 mm in snout-vent length.

Distribution: Believed to be limited to the ranges in the north of Madang and immediately west of the Sepik River mouth, wholly within Papua New Guinea.

Etymology: Named in reflection of where the species occurs, being Madang, Papua New Guinea.

ADELYNHOSERGECKO JUDYFERGUSONAE SP. NOV.

Holotype: A preserved specimen at the Royal Belgian Institute of Natural Sciences, Brussels, Belgium, specimen number: RBINS Reptilia 380100 collected at Unea Island (near New Britain) in Papua New Guinea. This facility allows access to its holdings.

Diagnosis: *Adelynhosergecko adelynhoserae* sp. nov. from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae* sp. nov. is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae* sp. nov. instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae* sp. nov. are whitish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergusoniae* sp. nov. from Unea Island, is separated from *A. adelynhoserae* sp. nov. by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae* sp. nov., which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae* sp. nov. are indistinct, versus prominent in *A. judyfergusoniae* sp. nov.

Otherwise both species are similar.

The species *A. haydnmcpheeii* sp. nov. from Ambitle Island, is readily separated from both *A. adelynhoserae* sp. nov. and *A. judyfergusoniae* sp. nov. by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheeii* sp. nov.

The species *A. matteoae* sp. nov. from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi* sp. nov. from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko* gen. nov. in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae* sp. nov., *A. judyfergusoniae* sp. nov., *A. haydnmcpheeii* sp. nov. and *A. matteoae* sp. nov. are also readily separated from *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettae* sp. nov. and *A. lachlanmcpheeii* sp. nov. by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti* sp. nov. from Woodlark Island and *A. stevebennetti* sp. nov. from Boiaboaiwaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. The can both be separated from that taxon by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti* sp. nov. is further separated from the other species (*A. brettbarnetti* sp. nov.) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettae* sp. nov. from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and *A. lachlanmcpheeii* sp. nov. from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheeii* sp. nov. is separated from *A. lucybennettae* sp.

nov. by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko gen. nov.* are readily separated from geckos in the genera *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi sp. nov.* does exceed 41 mm in snout-vent length.

Distribution: Known only from the type locality Unea Island (near New Britain) in Papua New Guinea. **Etymology:** Named in honour of Judy Ferguson of Taggerty, north-eastern Victoria, Australia in recognition of many decades services to herpetology in Australia.

ADELYNHOSERGECKO HAYDNMCPHIEI SP. NOV.

Holotype: A preserved specimen at the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA, specimen number: MCZ Herp R-153102 collected from Waramung Plantation, Ambitle Island, New Ireland Province, Papua New Guinea. This facility allows access to its holdings.

Diagnosis: *Adelynhosergecko adelynhoserae sp. nov.* from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae sp. nov.* is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae sp. nov.* instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae sp. nov.* are whiteish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergusonae sp. nov.* from Unea Island, is separated from *A. adelynhoserae sp. nov.* by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae sp. nov.*, which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae sp. nov.* are indistinct, versus prominent in *A. judyfergusonae sp. nov.*

Otherwise both species are similar.

The species *A. haydnmcpchiei sp. nov.* from Ambitle Island, is readily separated from both *A. adelynhoserae sp. nov.* and *A. judyfergusonae sp. nov.* (the two species it would otherwise be confused with) by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpchiei sp. nov.*

The species *A. matteoae sp. nov.* from the Kei Islands, is similar in

most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi sp. nov.* from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko gen. nov.* in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae sp. nov.*, *A. judyfergusonae sp. nov.*, *A. haydnmcpchiei sp. nov.* and *A. matteoae sp. nov.* are also readily separated from *A. novaeguineae*, *A. sloppi sp. nov.*, *A. huonensis sp. nov.*, *A. madangensis sp. nov.*, *A. brettbarnetti sp. nov.*, *A. stevebennetti sp. nov.*, *A. lucybennettae sp. nov.* and *A. lachlanmcpheeii sp. nov.* by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti sp. nov.* from Woodlark Island and *A. stevebennetti sp. nov.* from Boiaboaiwaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. The can both be separated from that taxon by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti sp. nov.* is further separated from the other species (*A. brettbarnetti sp. nov.*) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettae sp. nov.* from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and and *A. lachlanmcpheeii sp. nov.* from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheeii sp. nov.* is separated from *A. lucybennettae sp. nov.* by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko gen. nov.* are readily separated from geckos in the genera *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores, snout-vent

length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi* sp. nov. does exceed 41 mm in snout-vent length.

Distribution: Only known from the type locality of Ambitle Island, New Ireland Province, Papua New Guinea.

Etymology: Named in honour of Haydn McPhie of Mirboo North, West Gippsland, Victoria, Australia, in recognition of many decades of important contributions to Australian herpetology. Included in this has been in apprehending thieves seeking to steal reptiles from hands on wildlife displays by Snakebusters: Australia's best reptiles. Dressed in plain clothes, he was able to observe and stop thieves after allowing them to leave the display area with reptiles they had stolen.

Significantly, on one occasion he caught out a female thief unsuccessfully attempting to steal a Woma Python (*Aspidites ramsayi* (Macleay, 1882)) from a display at the Traralgon Agricultural Show. The woman happened to be a female employee of the State wildlife department!

ADELYNHOSERGECKO MATTEOAE SP. NOV.

Holotype: A preserved specimen at the Museum Zoologicum Bogoriense, Bogor, Indonesia, specimen number: MZB 14063 collected from the Kei Islands, Indonesia. This facility allows access to its holdings.

Diagnosis: *Adelynhosergecko adelynhoserae* sp. nov. from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae* sp. nov. is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae* sp. nov. instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae* sp. nov. are whiteish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergusonae* sp. nov. from Unea Island, is separated from *A. adelynhoserae* sp. nov. by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae* sp. nov., which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae* sp. nov. are indistinct, versus prominent in *A. judyfergusonae* sp. nov.

Otherwise both species are similar.

The species *A. haydnmcpheiei* sp. nov. from Ambitle Island, is readily separated from both *A. adelynhoserae* sp. nov. and *A. judyfergusonae* sp. nov. by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheiei* sp. nov.

The species *A. matteoae* sp. nov. from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it and others in the genus by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi* sp. nov. from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko* gen. nov. in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae* sp. nov., *A. judyfergusonae* sp. nov., *A. haydnmcpheiei* sp. nov. and *A. matteoae* sp. nov. are also readily separated from *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettae* sp. nov. and *A. lachlanmcpheiei* sp. nov. by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to

1/4 in the other species.

The species *A. brettbarnetti* sp. nov. from Woodlark Island and *A. stevebennetti* sp. nov. from Boiaboawaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. The can both be separated from that taxon by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti* sp. nov. is further separated from the other species (*A. brettbarnetti* sp. nov.) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettae* sp. nov. from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and *A. lachlanmcpheiei* sp. nov. from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheiei* sp. nov. is separated from *A. lucybennettae* sp. nov. by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described within this paper. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described within this paper. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi* sp. nov. does exceed 41 mm in snout-vent length.

Distribution: Only known from the type locality of Kei Islands, located south-west of Irian Jaya, Indonesia.

Etymology: Named in honour of Cathryn Matteo of Hawthorn, Victoria, Australia in recognition to her significant logistical contributions to herpetological research and conservation in Australia over some decades, in particular with regard to information technology (IT), sorting data and similar matters.

ADELYNHOSERGECKO BRETTBARNETTI SP. NOV.

Holotype: A preserved specimen at the Bernice P. Bishop Museum, Honolulu, Hawaii, USA, specimen number: BPBM Herp-BPBM 39879 collected at Gisabwai, Woodlark Island, Papua New Guinea, Latitude -9.08 S., Longitude 152.77 E. This facility allows access to its holdings.

Paratypes: Two preserved specimens at the Bernice P. Bishop Museum, Honolulu, Hawaii, USA, specimen numbers: BPBM Herp-BPBM 39880 and BPBM Herp-BPBM 39881 collected at Gisabwai, Woodlark Island, Papua New Guinea, Latitude -9.08 S., Longitude 152.77 E.

Diagnosis: *Adelynhosergecko adelynhoserae sp. nov.* from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae sp. nov.* is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae sp. nov.* instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae sp. nov.* are whitish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergussonae sp. nov.* from Unea Island, is separated from *A. adelynhoserae sp. nov.* by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae sp. nov.*, which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae sp. nov.* are indistinct, versus prominent in *A. judyfergussonae sp. nov.*

Otherwise both species are similar.

The species *A. haydnmcpheiei sp. nov.* from Ambitle Island, is readily separated from both *A. adelynhoserae sp. nov.* and *A. judyfergussonae sp. nov.* by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheiei sp. nov.*

The species *A. matteoae sp. nov.* from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi sp. nov.* from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko gen. nov.*, *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko gen. nov.* in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae sp. nov.*, *A. judyfergussonae sp. nov.*, *A. haydnmcpheiei sp. nov.* and *A. matteoae sp. nov.* are also readily separated from *A. novaeguineae*, *A. sloppi sp. nov.*, *A. huonensis sp. nov.*, *A. madangensis sp. nov.*, *A. brettbarnetti sp. nov.*, *A. stevebennetti sp. nov.*, *A. lucybennettae sp. nov.* and *A. lachlanmcpheiei sp. nov.* by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti sp. nov.* from Woodlark Island and *A. stevebennetti sp. nov.* from Boiaboaiwaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. They can both be separated from that taxon and others in the genus by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti sp. nov.* is further separated from the other species (*A. brettbarnetti sp. nov.*) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettae sp. nov.* from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and *A. lachlanmcpheiei sp. nov.* from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheiei sp. nov.* is separated from *A. lucybennettae sp. nov.* by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from

that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko gen. nov.* are readily separated from geckos in the genera *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi sp. nov.* does exceed 41 mm in snout-vent length.

Distribution: Only known from the type locality of Woodlark Island, Papua New Guinea.

Etymology: Named in honour of Brett Barnett of Ardeer, Melbourne, Victoria, Australia in recognition of his immense contributions to herpetology over some decades, including contributions to the sustainability of the Victorian Herpetological Society, at times hijacked by dishonest people trying to misuse society funds for their own financial self-gratification.

He has also provided critically important support for the care and maintenance of captive reptiles at facilities across Australia, including scientific research institutions, private and public zoos and private hobbyists.

ADELYNHOSERGECKO STEVEBENNETTI SP. NOV.

Holotype: A preserved specimen at the Bernice P. Bishop Museum, Honolulu, Hawaii, USA, specimen number: BPBM Herp-BPBM 15843 collected at Boiaboaiwaga Island, Milne Bay Province, Papua New Guinea, Latitude -10.21 S., Longitude 150.90 E. This facility allows access to its holdings.

Paratypes: Four preserved specimens at the Bernice P. Bishop Museum, Honolulu, Hawaii, USA, specimen number: BPBM Herp-BPBM 15844-15847 also collected at Boiaboaiwaga Island, Milne Bay Province, Papua New Guinea, Latitude -10.21 S., Longitude 150.90 E.

Diagnosis: *Adelynhosergecko adelynhoserae sp. nov.* from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae sp. nov.* is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae sp. nov.* instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae sp. nov.* are whitish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergussonae sp. nov.* from Unea Island, is separated from *A. adelynhoserae sp. nov.* by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae sp. nov.*, which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae sp. nov.* are indistinct, versus prominent in *A. judyfergussonae sp. nov.*

Otherwise both species are similar.

The species *A. haydnmcpheiei* sp. nov. from Ambitle Island, is readily separated from both *A. matteoae* sp. nov. and *A. judyfergussonae* sp. nov. by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheiei* sp. nov..

The species *A. matteoae* sp. nov. from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi* sp. nov. from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko* gen. nov. in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae* sp. nov., *A. judyfergussonae* sp. nov., *A. haydnmcpheiei* sp. nov. and *A. matteoae* sp. nov. are also readily separated from *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettiae* sp. nov. and *A. lachlanmcpheei* sp. nov. by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti* sp. nov. from Woodlark Island and *A. stevebennetti* sp. nov. from Boiaboawaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. They can both be separated from that taxon and others in the genus by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti* sp. nov. is further separated from the other species (*A. brettbarnetti* sp. nov.) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettiae* sp. nov. from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and *A. lachlanmcpheei* sp. nov. from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheei* sp. nov. is separated from *A. lucybennettiae* sp. nov. by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described within this paper. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described within this paper. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an

indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi* sp. nov. does exceed 41 mm in snout-vent length.

Distribution: Only known from the type locality of Boiaboawaga Island, Milne Bay Province, Papua New Guinea, but probably also occurs on the immediately adjacent larger islands and/or nearby New Guinea mainland.

Etymology: Named in honour of Steve Bennett of Narre Warren, Melbourne, Victoria, Australia in recognition of his immense contributions to herpetology and aviculture over some decades, including logistical support for the wildlife education business Snakebusters: Australia's best reptiles.

ADELYNHOSERGECKO LUCYBENNETTAE SP. NOV.

Holotype: A preserved specimen at the Louisiana State University Museum of Natural Science, Baton Rouge, USA, LSUMZ Herps Collection, specimen number: LSUMZ 95849, collected from Utai Village, 2 km south of the airfield, Sandaun Province, Papua New Guinea, Latitude -3.40 S., Longitude 141.58 E. This facility allows access to its holdings.

Diagnosis: *Adelynhosergecko adelynhoserae* sp. nov. from New Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae* sp. nov. is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae* sp. nov. instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae* sp. nov. are whiteish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergussonae* sp. nov. from Unea Island, is separated from *A. adelynhoserae* sp. nov. by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae* sp. nov., which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae* sp. nov. are indistinct, versus prominent in *A. judyfergussonae* sp. nov..

Otherwise both species are similar.

The species *A. haydnmcpheiei* sp. nov. from Ambitle Island, is readily separated from both *A. adelynhoserae* sp. nov. and *A. judyfergussonae* sp. nov. by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheiei* sp. nov..

The species *A. matteoae* sp. nov. from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi* sp. nov. from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko* gen. nov. in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae* sp. nov., *A. judyfergussonae* sp. nov., *A. haydnmcpheiei* sp. nov. and *A. matteoae* sp. nov. are also readily separated from *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettiae* sp. nov. and *A.*

lachlanmcpheeii sp. nov. by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti* sp. nov. from Woodlark Island and *A. stevebennetti* sp. nov. from Boiaboaiwaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. They can both be separated from that taxon by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti* sp. nov. is further separated from the other species (*A. brettbarnetti* sp. nov.) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettiae* sp. nov. from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and and *A. lachlanmcpheeii* sp. nov. from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheeii* sp. nov. is separated from *A. lucybennettiae* sp. nov. by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described within this paper. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis* sp. nov. as described within this paper. *A. huonensis* sp. nov. has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis* sp. nov. by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko* gen. nov. are readily separated from geckos in the genera *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi* sp. nov. does exceed 41 mm in snout-vent length.

Distribution: Only known from the type locality and immediate surrounds of the vicinity of Utai Village, 2 km south of the airfield, in Sandaun Province, Papua New Guinea

Etymology: Named in honour of Lucy Bennett of Narre Warren, Melbourne, Victoria, Australia in recognition of her immense contributions to herpetology over some decades, including logistical support for the wildlife education business Snakebusters: Australia's best reptiles.

ADELYNHOSERGECKO LACHLANMCPHEEI SP. NOV.

Holotype: A preserved specimen at the Louisiana State University Museum of Natural Science, Baton Rouge, USA, LSUHMZ Herps Collection, specimen number: LSUHMZ 97474, collected from SIL guest house grounds and vicinity, Kreer Heights, Wewak, Papua New Guinea, Latitude -3.59 S., Longitude 143.64 E. This facility allows access to its holdings.

Diagnosis: *Adelynhosergecko adelynhoserae* sp. nov. from New

Britain, is similar in most respects to the species *A. novaeguineae* (Brown and Parker, 1977) and would be identified as this taxon using the criteria given in that paper. *A. adelynhoserae* sp. nov. is however readily separated from *A. novaeguineae* by the general absence of reddish-brown or red flecks and markings on the dorsal surface and sides. *A. adelynhoserae* sp. nov. instead has 4 to 6 scattered yellow dots on each of the lower flanks above where the grayish upper body turns to the lighter undersurface. The well-defined dorsal cross-bands on the tail of *A. adelynhoserae* sp. nov. are whitish and grayish in colour versus tan and reddish-brown in *A. novaeguineae*.

The species *A. judyfergusonae* sp. nov. from Unea Island, is separated from *A. adelynhoserae* sp. nov. by the relative lack of black peppering in the lighter bands as compared to that seen in *A. adelynhoserae* sp. nov., which is readily noticeable. The limited number of blackish spots on the dorsum and flanks of *A. adelynhoserae* sp. nov. are indistinct, versus prominent in *A. judyfergusonae* sp. nov.

Otherwise both species are similar.

The species *A. haydnmcpheii* sp. nov. from Ambitle Island, is readily separated from both *A. adelynhoserae* sp. nov. and *A. judyfergusonae* sp. nov. by an absence of yellow mottling on the back of the jaw and sides of neck. Striping behind the eye is also noticeable in *A. haydnmcpheii* sp. nov.

The species *A. matteoae* sp. nov. from the Kei Islands, is similar in most respects to *A. novaeguineae* (Brown and Parker, 1977), but is separated from it by a diffuse dull beige indistinctly marked colouration with scattered yellowish flecks on the dorsum.

The species *Adelynhosergecko sloppi* sp. nov. from Waigeo Island, Irian Jaya, Indonesia, is separated from all other geckos in the genera *Adelynhosergecko* gen. nov., *Allengreercolotes* gen. nov., *Borneocolotes* gen. nov. and *Rosssadliercolotes* gen. nov. by having fewer than 25 enlarged preanal/femoral pores and an adult snout-vent length in excess of 42 mm and robust build. It is morphologically similar in most respects to species within the genus *Adelynhosergecko* gen. nov. in particular *Adelynhosergecko novaeguineae* (Brown and Parker, 1977), but differs from this taxon by its larger adult size (in excess of 42 mm snout-vent, versus under 41 mm) and more robust build.

All of *adelynhoserae* sp. nov., *A. judyfergusonae* sp. nov., *A. haydnmcpheii* sp. nov. and *A. matteoae* sp. nov. are also readily separated from *A. novaeguineae*, *A. sloppi* sp. nov., *A. huonensis* sp. nov., *A. madangensis* sp. nov., *A. brettbarnetti* sp. nov., *A. stevebennetti* sp. nov., *A. lucybennettiae* sp. nov. and *A. lachlanmcpheeii* sp. nov. by having no webbing or less than 1/5 webbing between digits 3 and 4 of the hind leg, versus from 1/5 to 1/4 in the other species.

The species *A. brettbarnetti* sp. nov. from Woodlark Island and *A. stevebennetti* sp. nov. from Boiaboaiwaga Island, both in south-east Papua New Guinea have until now been identified as *A. novaeguineae* (Brown and Parker, 1977) and are similar to it. They can both be separated from that taxon by marbling on the nape and anterior dorsum as well as tail bands that have the darker segments darker posteriorly and fading anteriorly. *A. stevebennetti* sp. nov. is further separated from the other species (*A. brettbarnetti* sp. nov.) by scattered dark flecks on the whitish surface of the lower flanks.

The species *A. lucybennettiae* sp. nov. from the vicinity of Utai Village, Sandaun Province, in northern Papua New Guinea and and *A. lachlanmcpheeii* sp. nov. from the vicinity of Weewak in East Sepik Province, Papua New Guinea are similar in most respects to *A. novaeguineae* (Brown and Parker, 1977) and until now would have been identified as that taxon, but can be separated from it by longer and narrower digits (long and narrow versus moderate). *A. lachlanmcpheeii* sp. nov. is separated from *A. lucybennettiae* sp. nov. by the presence of about four well defined and irregular shaped dorsal crossbands of dark and light grey, the dark bands becoming darker on the lower flanks.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-

brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Adelynhosergecko huonensis sp. nov. is similar in most respects to *A. novaeguineae* Brown and Parker (1977), but is separated from that species by having a grey dorsal colouration versus reddish-brown in both *A. novaeguineae* and *A. madangensis sp. nov.* as described within this paper. *A. huonensis sp. nov.* has vague as opposed to moderately distinct dorsal markings as seen in the other two species.

A. madangensis sp. nov. is further separated from *A. novaeguineae* and *A. huonensis sp. nov.* by the presence of an indistinct dorsal pattern with distinctly jagged edges on the upper surface sometimes consisting of bands or markings indicative of this.

Geckos in the genus *Adelynhosergecko gen. nov.* are readily separated from geckos in the genera *Allengreercolotes gen. nov.*, *Borneocolotes gen. nov.* and *Rosssadliercolotes gen. nov.* by having fewer than 25 enlarged preanal/femoral pores, snout-vent length in adults of under 41 mm and of moderate build.

Exceptional to this in terms of size, *Adelynhosergecko sloppi sp. nov.* does exceed 41 mm in snout-vent length.

Distribution: Only known from the type locality of the vicinity of Wewak, Papua New Guinea. **Etymology:** Named in honour of Lachlan McPhee of Frankston, Victoria, Australia in recognition of his significant contributions to the welfare of underprivileged and disabled people in Melbourne, Victoria, Australia over many years.

SCELOTRETUS (HAROLDCOGGERCOLOTES) HAROLDCOGERI SP. NOV.

Holotype: A preserved specimen in the Australian Museum in Sydney, New South Wales, Australia, specimen number: R.42095, collected at Santa Ana Island, Solomon Islands, Latitude -10.83 S., Longitude 162.46 E. This government-owned facility allows access to its holdings.

Paratype: A preserved specimen in the Australian Museum in Sydney, New South Wales, Australia, specimen number: R.127285, collected at Makira Island, San Cristobal Island, Solomon Islands, Latitude -10.83 S., Longitude 162.46 E.

Diagnosis: The species *Gekko vittatus* Houuttuyn, 1782, herein placed in the genus *Scelotretus* Fitzinger, 1843 subgenus *Scelotretus* conforms broadly with the so called *G. vittatus* phenotype 1 as broadly defined by Rösler *et al.* (2012) and as described in Boulenger (1885) at pages 185-186. The subspecies described as "*Var. bivittatus*" on pages 186-187 of Boulenger (1885) describes a composite of species and the name *bivittatus* as originally applied by Duméril and Bibron in 1836 applies either to typical *S. vittatus* or to a north-west New Guinea specimen of a different species-level taxon (Rösler *et al.* 2012) and is therefore not applicable or available for the three newly named species in this subgenus as formally described in this paper. A modified diagnosis of the species *S. vittatus* is as follows: *S. vittatus* is separated from the others in the species complex (subgenus) by a colouration including a distinct light vertebral stripe, several millimetres wide and bordered with dark brown, bifurcating in the neck region and usually reaching the posterior margin of the eyes. The stripe may be interrupted or shortened, but even when faded is discernable. The vertebral stripe slightly widens more or less saddle-like in the anterior caudal region. The tail is annulated with sharply defined light and dark rings, the dark rings are usually twice as broad as the light ones. Juveniles are similar to adults, but with more intensive caudal colouration. Roundish to oval pointed tubercles present only within the white rami of the vertebral band, all remaining nuchal tubercles are blunt and slightly convex.

The species described as *Gekko remotus* Rösler, Ineich, Wilms

and Böhme, 2012, also placed in the subgenus of *Scelotretus* Fitzinger, 1843, namely *Scelotretus* is separated from other species complex members (the subgenus) by a pattern consisting of an irregularly flecked pattern on the head, body and limbs. Sometimes a light vertebral stripe densely interspersed with darker flecks is discernible. Two dark parallel paravertebral sacral stripes framing a lighter sacral are characteristic. Tail above has short irregular dark stripes and flecks, below monochromatic, whitish, medially with narrow, dark streaks. Subadults with all characters of the adults. All nuchal tubercles round to oval, conical, pointed and irregularly arranged.

The species *S. haroldcoggeri sp. nov.* with a centre of distribution being the eastern Solomon Islands, is morphologically similar in most respects to *S. remotus*, including in colouration and size, shape and configuration of nuchal tubercles. It is separated from that species however by the presence of large irregular light greenish blotches on the dorsal surface of the body, a head that is darker than the body (versus lighter in *S. remotus*) and scattered large light green spots on the snout, versus none in *S. remotus*.

The species *S. daranini sp. nov.* known only from the Kei Islands in the Moluccas, Indonesia conforms with the so called *S. vittatus* phenotype 3 as broadly defined by Rösler *et al.* (2012).

This species is similar in most respects to nominate *S. vittatus*, but is readily separated from it by having large nuchal tubercles (versus medium) and in *S. daranini sp. nov.* they are distinctly conical shaped and pointed.

The species *S. jenandersonae sp. nov.* known only from Nissan Atoll, Green Islands, Papua New Guinea, more-or-less conforms with the so called *S. vittatus* phenotype 4 as broadly defined by Rösler *et al.* (2012). This species is superficially similar to *S. haroldcoggeri sp. nov.* and was mistakenly identified as this taxon by Rösler *et al.* (2012), who included both as one phenotype in their description of their phenotype 4.

However *S. jenandersonae sp. nov.*, including as depicted by Rösler *et al.* (2012) differs from *S. haroldcoggeri sp. nov.* (as depicted by McCoy (2006) at plate 15) by having a brownish dorsum with numerous grayish black flecks, versus grayish-brown with irregular green spots and not the peppered grayish black flecks.

At the rear of the body and the base of the tail in *S. jenandersonae sp. nov.* is an obvious dark blackish mid-vertebral stripe formed by a concentration of dark flecks. This is not seen in *S. haroldcoggeri sp. nov.*

The limbs and tail of *S. jenandersonae sp. nov.* are clearly peppered with black flecks. This is not the case in *S. haroldcoggeri sp. nov.* or for that matter any other species in the subgenus. The closest similarity to the flecks on the limbs and tail is dark brown marbling on the legs of *S. daranini sp. nov.*

Distribution: *S. haroldcoggeri sp. nov.* is restricted to the Eastern Solomon Islands and the Vanuatu Islands.

Etymology: Named in honour of Dr. Harold G. Cogger, former deputy director and curator of herpetology at the Australian Museum in Sydney, New South Wales, Australia in recognition of a lifetime's high achievement in herpetology.

SCELOTRETUS (HAROLDCOGGERCOLOTES) DARANINI SP. NOV.

Holotype: A preserved male specimen in the Zoologisches Museum, Berlin, now Museum für Naturkunde, Berlin, Germany, specimen number: ZMB 48737 collected from the Kei islands, Moluccas, Indonesia. This facility allows access to its holdings.

Paratype: A preserved male specimen in the Zoologisches Museum, Berlin, now Museum für Naturkunde, Berlin, Germany, specimen number: ZMB 48738 collected from the Kei islands, Moluccas, Indonesia.

Diagnosis: The species *Gekko vittatus* Houuttuyn, 1782, herein placed in the genus *Scelotretus* Fitzinger, 1843 subgenus *Scelotretus* conforms broadly with the so called *G. vittatus* phenotype 1 as broadly defined by Rösler *et al.* (2012) and as described in Boulenger (1885) at pages 185-186.

The subspecies described as "*Var. bivittatus*" on pages 186-187 of

Boulenger (1885) describes a composite of species and the name *bivittatus* as originally applied by Duméril and Bibron in 1836 applies either to typical *S. vittatus* or to a north-west New Guinea specimen of a different species-level taxon (Rösler *et al.* 2012) and is therefore not applicable or available for the three newly named species in this subgenus as formally described in this paper.

A modified diagnosis of the species *S. vittatus* is as follows:

S. vittatus is separated from the others in the species complex (subgenus) by a colouration including a distinct light vertebral stripe, several millimetres wide and bordered with dark brown, bifurcating in the neck region and usually reaching the posterior margin of the eyes. The stripe may be interrupted or shortened, but even when faded is discernible. The vertebral stripe slightly widens more or less saddle-like in the anterior caudal region. The tail is annulated with sharply defined light and dark rings, the dark rings are usually twice as broad as the light ones. Juveniles are similar to adults, but with more intensive caudal colouration. Roundish to oval pointed tubercles present only within the white rami of the vertebral band, all remaining nuchal tubercles are blunt and slightly convex.

The species described as *Gekko remotus* Rösler, Ineich, Wilms and Böhme, 2012, also placed in the subgenus of *Scelotretus* Fitzinger, 1843, namely *Scelotretus* is separated from other species complex members (the subgenus) by a pattern consisting of an irregularly flecked pattern on the head, body and limbs. Sometimes a light vertebral stripe densely interspersed with darker flecks is discernible. Two dark parallel paravertebral sacral stripes framing a lighter sacral are characteristic. Tail above has short irregular dark stripes and flecks, below monochromatic, whitish, medially with narrow, dark streaks. Subadults with all characters of the adults. All nuchal tubercles round to oval, conical, pointed and irregularly arranged.

The species *S. haroldcoggeri sp. nov.* with a centre of distribution being the eastern Solomon Islands, is morphologically similar in most respects to *S. remotus*, including in colouration and size, shape and configuration of nuchal tubercles. It is separated from that species however by the presence of large irregular light greenish blotches on the dorsal surface of the body, a head that is darker than the body (versus lighter in *S. remotus*) and scattered large light green spots on the snout, versus none in *S. remotus*.

The species *S. daranini sp. nov.* known only from the Kei Islands in the Moluccas, Indonesia conforms with the so called *S. vittatus* phenotype 3 as broadly defined by Rösler *et al.* (2012).

This species is similar in most respects to nominate *S. vittatus*, but is readily separated from it by having large nuchal tubercles (versus medium) and in *S. daranini sp. nov.* they are distinctly conical shaped and pointed.

The species *S. jenandersonae sp. nov.* known only from Nissan Atoll, Green Islands, Papua New Guinea, more-or-less conforms with the so called *S. vittatus* phenotype 4 as broadly defined by Rösler *et al.* (2012). This species is superficially similar to *S. haroldcoggeri sp. nov.* and was mistakenly identified as this taxon by Rösler *et al.* (2012), who included both as one phenotype in their description of their phenotype 4.

However *S. jenandersonae sp. nov.*, including as depicted by Rösler *et al.* (2012) differs from *S. haroldcoggeri sp. nov.* (as depicted by McCoy (2006) at plate 15) by having a brownish dorsum with numerous grayish black flecks, versus grayish-brown with irregular green spots and not the peppered grayish black flecks.

At the rear of the body and the base of the tail in *S. jenandersonae sp. nov.* is an obvious dark blackish mid-vertebral stripe formed by a concentration of dark flecks. This is not seen in *S. haroldcoggeri sp. nov.*

The limbs and tail of *S. jenandersonae sp. nov.* are clearly peppered with black flecks. This is not the case in *S. haroldcoggeri sp. nov.* or for that matter any other species in the subgenus. The closest similarity to the flecks on the limbs and tail is dark brown marbling on the legs of *S. daranini sp. nov.*

Distribution: *S. daranini sp. nov.* is restricted to the the Kei islands, Moluccas, Indonesia.

Etymology: Named in honour of Dara Nin, of Ringwood, Melbourne, Victoria, Australia in recognition of his contributions to herpetology in Australia, in particular through his work with Snakebusters, Australia's best reptiles shows, educational displays and reptile parties. See Hoser (2014) for details.

SCELOTRETUS (HAROLDCOGGERCOLOTES) JENANDERSONAE SP. NOV.

Holotype: A preserved male specimen at the Senckenbergmuseum, Frankfurt am Main, now Forschungsinstitut Senckenberg, Frankfurt, Germany, specimen number: SMF 9157, collected from Nissan atoll, Green Islands, Papua New Guinea. This facility allows access to its holdings.

Paratypes: Two preserved male specimens at the Senckenbergmuseum, Frankfurt am Main, now Forschungsinstitut Senckenberg, Frankfurt, Germany, specimen numbers: SMF 9158 and SMF 9159 collected from Nissan atoll, Green Islands, Papua New Guinea.

Diagnosis: The species *Gekko vittatus* Houuttuyn, 1782, herein placed in the genus *Scelotretus* Fitzinger, 1843 subgenus *Scelotretus* conforms broadly with the so called *G. vittatus* phenotype 1 as broadly defined by Rösler *et al.* (2012) and as described in Boulenger (1885) at pages 185-186. The subspecies described as "*Var. bivittatus*" on pages 186-187 of Boulenger (1885) describes a composite of species and the name *bivittatus* as originally applied by Duméril and Bibron in 1836 applies either to typical *S. vittatus* or to a north-west New Guinea specimen of a different species-level taxon (Rösler *et al.* 2012) and is therefore not applicable or available for the three newly named species in this subgenus as formally described in this paper. A modified diagnosis of the species *S. vittatus* is as follows:

S. vittatus is separated from the others in the species complex (subgenus) by a colouration including a distinct light vertebral stripe, several millimetres wide and bordered with dark brown, bifurcating in the neck region and usually reaching the posterior margin of the eyes. The stripe may be interrupted or shortened, but even when faded is discernible. The vertebral stripe slightly widens more or less saddle-like in the anterior caudal region. The tail is annulated with sharply defined light and dark rings, the dark rings are usually twice as broad as the light ones. Juveniles are similar to adults, but with more intensive caudal colouration. Roundish to oval pointed tubercles present only within the white rami of the vertebral band, all remaining nuchal tubercles are blunt and slightly convex.

The species described as *Gekko remotus* Rösler, Ineich, Wilms and Böhme, 2012, also placed in the subgenus of *Scelotretus* Fitzinger, 1843, namely *Scelotretus* is separated from other species complex members (the subgenus) by a pattern consisting of an irregularly flecked pattern on the head, body and limbs. Sometimes a light vertebral stripe densely interspersed with darker flecks is discernible. Two dark parallel paravertebral sacral stripes framing a lighter sacral are characteristic. Tail above has short irregular dark stripes and flecks, below monochromatic, whitish, medially with narrow, dark streaks. Subadults with all characters of the adults. All nuchal tubercles round to oval, conical, pointed and irregularly arranged.

The species *S. haroldcoggeri sp. nov.* with a centre of distribution being the eastern Solomon Islands, is morphologically similar in most respects to *S. remotus*, including in colouration and size, shape and configuration of nuchal tubercles. It is separated from that species however by the presence of large irregular light greenish blotches on the dorsal surface of the body, a head that is darker than the body (versus lighter in *S. remotus*) and scattered large light green spots on the snout, versus none in *S. remotus*.

The species *S. daranini sp. nov.* known only from the Kei Islands in the Moluccas, Indonesia conforms with the so called *S. vittatus* phenotype 3 as broadly defined by Rösler *et al.* (2012).

This species is similar in most respects to nominate *S. vittatus*, but is readily separated from it by having large nuchal tubercles (versus medium) and in *S. daranini sp. nov.* they are distinctly conical shaped and pointed.

The species *S. jenandersonae sp. nov.* known only from Nissan

Atoll, Green Islands, Papua New Guinea, more-or-less conforms with the so called *S. vittatus* phenotype 4 as broadly defined by Rösler *et al.* (2012). This species is superficially similar to *S. haroldcoggeri* *sp. nov.* and was mistakenly identified as this taxon by Rösler *et al.* (2012), who included both as one phenotype in their description of their phenotype 4.

However *S. jenandersonae* *sp. nov.*, including as depicted by Rösler *et al.* (2012) differs from *S. haroldcoggeri* *sp. nov.* (as depicted by McCoy (2006) at plate 15) by having a brownish dorsum with numerous grayish black flecks, versus grayish-brown with irregular green spots and not the peppered grayish black flecks.

At the rear of the body and the base of the tail in *S. jenandersonae* *sp. nov.* is an obvious dark blackish mid-vertebral stripe formed by a concentration of dark flecks. This is not seen in *S. haroldcoggeri* *sp. nov.*

The limbs and tail of *S. jenandersonae* *sp. nov.* are clearly peppered with black flecks. This is not the case in *S. haroldcoggeri* *sp. nov.* or for that matter any other species in the subgenus. The closest similarity to the flecks on the limbs and tail is dark brown marbling on the legs of *S. daranini* *sp. nov.*

Distribution: *S. jenandersonae* *sp. nov.* is only known from the Nissan atoll, Green Islands, Papua New Guinea.

Etymology: Named in honour of Jen Anderson, of Ringwood, Melbourne, Victoria, Australia in recognition of her contributions to herpetology in Australia, in particular through her work with Snakebusters, Australia's best reptiles shows, educational displays and reptile parties. Also see Hoser (2014) for relevant details.

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CONFLICT OF INTEREST

There are no conflicts of interest in terms of this paper.

