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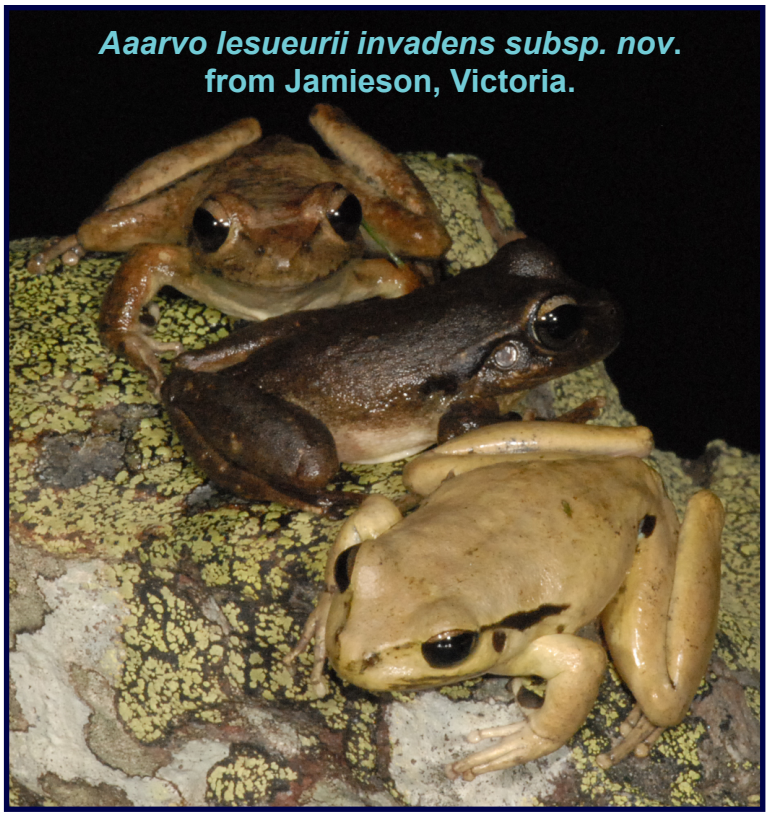
Contents

***Aaarvo lesueurii invadens subsp. nov.* from Jamieson, Victoria.**



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Four new species of Brush-tailed Possums (Phalangeridae) from Northern Australia.

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RAYMOND T. HOSER
LSID urn:lsid:zoobank.org:author:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
***Phone*: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au**
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ABSTRACT

The Common Brush-tailed Possum *Trichosurus vulpecula* is recognised by most publishing zoologists as a widespread species occupying forested and semi-forested parts of Australia and Tasmania as well as being feral in Aotearoa (AKA New Zealand).

Various forms have been described and either synonymized or recognized as subspecies and by some as full species.

Molecular studies, including those of Carmelet-Rescan *et al.* (2022) and Middleton *et al.* (2025) have indicated species-level divergences of several regional populations, being defined herein as more than 1 million years divergent from nearest relatives.

While names are available for most of these variants, three divergent populations are not formally named.

These are those from Barrow Island and Broome, Western Australia, the population from the Mitchell Plateau in the north Kimberley District of Western Australia and a divergent population from the Mackay/Eungella District of Eastern Queensland.

Each are formally named herein as full species.

A fourth divergent population from near Borroloola in the Gulf of Carpentaria District, Northern Territory is also formally named as a species.

The other forms formally recognized herein as full species are: *Trichosurus vulpecula* (Kerr, 1792) of south-east Australia (including Tasmania), most of eastern Australia and extending through the centre of the continent to the Pilbara district of Western Australia, *T. arnhemensis* (Collett, 1897) of the top end of the Northern Territory and much of the Kimberley District in Western Australia, except for the north-west, *T. eburacensis* (Lönnberg, 1916) of upper Cape York, Queensland, *T. johnstonii* (Ramsay, 1888) of the Atherton Tableland, extending south to the Burdekin River and *T. hypoleucus* (Wagner, 1855) of south-west Western Australia.

Putative *T. fuliginosus* (Ogilby, 1831) of Tasmania is not recognized as distinct from *T. vulpecula*, even at the subspecies level.

Trichosurus vulpecula mesurus Thomas, 1926 from Inkerman, Queensland and *Trichosurus vulpecula ruficollis* Schwarz, 1909 of the Murchison District of Western Australia are both of the nominate taxon *Trichosurus vulpecula.*

The associated species *T. caninus* (Ogilby, 1892) of the ranges of south-east Queensland and coastal New South Wales and *T. cunninghami* (Lindenmayer, Dubach and Viggers, 2002) of southern coastal and ranges of New South Wales and nearby north-east Victoria are also both recognized as separate and distinct species.

The many other synonym names as listed in Iredale and Troughton, 1934 are all referrable to previously named taxa listed above.

While *Trichosurus* populations are stable in many parts of Australia, species are at risk in some areas due to fox or cat predation and other factors.

Geographically confined possum taxa, including the four formally named herein are at significantly greater risk of decline or extinction and their prompt recognition is urged so as to enable proper species management plans as soon as possible.

Keywords: Taxonomy; nomenclature; Australia; possum; brush-tailed; *Trichosurus*; *vulpecula*; *arnhemensis*; *hypoleucus*; *eburacensis*; *johnstonii*; *caninus*; *cunninghami*; *fuliginosus*; new species; *mowlabluffmassacre*; *forrestrivermassacre*; *abnerrangemassacre*; *mountmanduranamassacre*.

INTRODUCTION

The Common Brush-tailed Possum *Trichosurus vulpecula* as recognised by most publishing zoologists is an iconic species.

It is a large possum species, also occupying a wide zone across forested and semi-forested parts of Australia and Tasmania as well as being feral in Aotearoa (AKA New Zealand).

It is therefore well-known to most Australians and many visitors as well.

Brush-tailed Possums are found in the centres of the largest Australian cites, where they do well on the various native and non-native fruits that are available throughout the year.

They also adapt to human presence and are regularly fed by people, allowing inner urban populations to both survive and often thrive.

Various forms have been described and either synonymized or recognized as subspecies and by some taxonomists as full species.

Molecular studies, including those of Carmelet-Rescan *et al.* (2022) and Middleton *et al.* (2025) have indicated species-level divergences of several regional populations, being defined herein as more than 1 million years divergent from nearest relatives.

While names are available for most of these variants, which is probably why no new forms have been named in the recent past, three obviously divergent populations are not yet formally named.

This could well have negative conservation implications for the relevant taxa as explained in Hoser (2019a, 2019b).

These until now unnamed taxa are those from Barrow Island and Broome, Western Australia, the population from Mitchell Plateau in the north Kimberley District of Western Australia and a divergent population from the Mackay/Eungella District of Eastern Queensland.

That they are unnamed taxa is shown in the phylogenies published by Carmelet-Rescan *et al.* (2022) and Middleton *et al.* (2025).

As the three putative taxa are morphologically diagnosable, each are formally named herein as full species.

These are *Trichosurus mowlabluffmassacre sp. nov.* from Broome and Barrow Island, *T. forrestrivermassacre sp. nov.* from the Mitchell Plateau area in the north-west Kimberley District of Western Australia and *T. mountmanduranamassacre sp. nov.*.from around Mackay / Eungella in eastern Queensland.

A fourth divergent population from the hilly areas near Borroloola on the south of the Gulf of Carpentaria in the Northern Territory is also formally named as *T. abnerrangemassacre sp. nov.*.

The other forms formally recognized herein as full species are: *Trichosurus vulpecula* (Kerr, 1792), with a type locality of Sydney, New South Wales, Australia, of south-east Australia (including Tasmania), most of eastern Australia and extending through the centre of the continent to the Pilbara district of Western Australia, *T. arnhemensis* (Collett, 1897), with a type locality of Daly River, Northern Territory, Australia of the top end of the Northern Territory and much of the Kimberley District in Western Australia, except for the north-west, *T. eburacensis* (Lönnberg, 1916), with a type locality of Olen Creek, Cape York, being a taxon from upper Cape York, Queensland, Australia, and *T. johnstonii* (Ramsay, 1888), with a type locality of Bellenden Ker Range (near Cairns) and generally of the Atherton Tableland, extending south to the Burdekin River and *T. hypoleucus* (Wagner, 1855), with a type locality of south-west Australia and generally of south-west Western Australia.

The two putative taxa, *T. fuliginosus* (Ogilby, 1831) of Tasmania, and putative *T. ruficollis* (Schwarz, 1909) of the Murchison District, Western Australia are not recognized as distinct from *T. vulpecula*, even at the subspecies level.

Trichosurus vulpecula mesurus Thomas, 1926 from Inkerman, Queensland is also of the nominate taxon *Trichosurus vulpecula.*

The associated species *T. caninus* (Ogilby, 1892) of the ranges of south-east Queensland and coastal New South Wales and *T. cunninghami* (Lindenmayer, Dubach and Viggers, 2002) of southern coastal and ranges of New South Wales and nearby north-east Victoria are also both recognized as separate and distinct species.

The many other synonym names as listed in Iredale and Troughton (1934) not listed herein, due to their being ignored over recent years are all referrable to the previously named taxa listed above.

While *Trichosurus* populations are stable in many parts of Australia, species are at risk in some areas due to fox or cat predation and other factors.

Geographically confined possum taxa, including the three formally named herein are at significantly greater risk of decline or extinction and their prompt recognition is urged so as to enable proper species management plans as soon as possible.

MATERIALS AND METHODS

Molecular studies of Carmelet-Rescan *et al.* (2022) and Middleton *et al.* (2025) both flagged the three unnamed brush-tailed possum taxa subject of this paper, being that from the Broome District, Western Australia, Australia, the taxon from the Mitchell Falls area of the north-west Kimberley District, Western Australia and that from the Mackay/Eungella District of mid-east Queensland, Australia.

Specimens of these three putative taxa and the other five herein recognized species of “Common Brush-tailed Possums” and the two herein recognized species of “Mountain Brush-tailed Possums” as listed in the introduction were inspected with the purpose of identifying quantifiable consistent differences between the relevant species.

Relevant past publications on the same taxa were also reviewed to aid in the process of teasing out the three newly identified species.

Because all three species were shown to have diverged from nearest relatives at or more than 1 MYA, they have at all relevant times been identified as unnamed species rather than subspecies or other kind of classification level.

A fourth divergent population from around Borroloola, in the Gulf of Carpentaria area of the Northern Territory, previously assigned to one or other of *T. vulpecula* (either as species or subspecies) or *T. arnhemensis* (either as species or subspecies), while most similar to the latter taxon with a type locality of Daly River, Northern Territory, was sufficiently divergent from the main population to warrant taxonomic recognition.

As it appears to be geographically disjunct and evolving separately, it has also been formally named herein as a new species being *T. abnerrangemassacre sp. nov.*.

Publications relevant to the taxonomic and nomenclatural decisions to name the relevant species included Abbott (2012), Baynes and Jones (1993), Beck (2008), Bradley *et al*. (1987), Carmelet-Rescan *et al.* (2022), Collett (1897), Davies *et al*. (2018), Finlayson (1963), Foulkes (2001), ICZN (2012), Iredale and Troughton (1934), Jackson and Groves (2015), Kerle (1985), Kerle *et al*. (1991), Lesson (1828), Le Souef (1916), Lindenmayer *et al*. (2022), Lönnberg (1916), Meyer (1793), Middleton *et al.* (2025), Ogilby (1831, 1835), Osborne and Christidis (2022), Pattabiraman *et al.* (2021), Perry *et al.* (2015), Ramsay (1888), Reilly *et al.* (2010), Ride (1970), Ride *et al*. (1999), Russell *et al*. (2013), Schwarz (1909), Short and Turner (1994), Start *et al*. (2007, 2012), Stokeld *et al.* (2018), Thomas (1888, 1926), Upham *et al.* (2019), Viggers and Lindenmayer (2022), Wagner (1855), Waterhouse (1841), Woinarski (2004), Woinarski *et al.* (2010, 2011a, 2011b, 2012), Yokoyama *et al*. (2001) and sources cited therein.

RESULTS

As already laid out, four obviously divergent species were identified and named in this paper.

These are:

T. mowlabluffmassacre sp. nov. of the Broome area in Western Australia.

T. forrestrivermassacre sp. nov. of the Mitchell Plateau region of the Kimberley District of Western Australia.

T. abnerrangemassacre sp. nov. of the hilly area in the south of the Gulf of Carpentaria, Northern Territory.

T. mountmanduranamassacre sp. nov. of the Mackay area in mid-eastern Queensland, Australia.

All are described herein as new species in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended (ICZN 2012).

Unless otherwise stated, the descriptions relate to adult male specimens of generally good health and condition.

Spellings of the new scientific names are intentional and deliberate and should not be changed.

In all cases the names chosen are part of the “truth-telling” process of the British invasion and genocide in Aboriginal Australia from the 1700’s and 1800’s.

The three new names are reflective of massacres of Aboriginals that occurred near to where each species occurs.
These names follow on from the naming of the Australian Blind Snake species *Sloppytyphlops flyingfoammassacre* Hoser, 2025 in Hoser (2025b) at pages 76-79.

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

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

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 19 May 2025, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

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

Some material within descriptions may be repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) and the 2012 amendments (ICZN 2012). The "version of record" is the printed version and not pdf version.

Both are identical in all materially relevant ways except for the fact that the images in the printed version may be in black and white, as opposed to colour as seen in the pdf version.

The people who assisted with provision of photos and other materials used within this paper or for research by me are also thanked for their assistances.

CONSERVATION OF THE NEWLY NAMED POSSUM SPECIES

The relevant comments in Hoser (2019a-b, 2020, 2024, 2025a-2025b) and sources cited therein apply to these species.

The use of provocative and interesting etymologies is deliberate and designed to further public interest in the relevant species, which will aid conservation outcomes and/or to highlight other matters of public importance that may otherwise be overlooked, including the genocide of Aboriginal Australians at the hands of the Imperial British Forces that invaded in the 1700's and 1800's.

TRICHOSURUS MOWLABLUFFMASSACRE SP. NOV.

LSIDurn:lsid:zoobank.org:act:5D1820D2-57DB-4FD3-83C9-1410D007FD4A

Holotype: A preserved adult female specimen (skin and skeleton) at the Western Australian Museum (WAM), Perth, Western Australia, Australia, specimen number M67031 collected from the vicinity of Broome, Western Australia, Latitude -17.913611 S., Longitude 122.248056 E.

This government-owned facility allows access to its holdings.

Paratypes: Three preserved specimens at the Western Australian Museum (WAM), Perth, Western Australia, Australia, being specimen numbers M67032 (adult specimen skin and skeleton), M67033 (juvenile male, preserved in spirit) and M67035 (juvenile female, preserved in spirit) all collected from the vicinity of Broome, Western Australia, Latitude -17.913611 S., Longitude 122.248056 E.

Diagnosis: *Trichosurus mowlabluffmassacre sp. nov.* of the Broome area in Western Australia has until now been treated as a population of either *Trichosurus vulpecula* (Kerr, 1792), with a type locality of Sydney, New South Wales, Australia, being a species of south-east Australia (including Tasmania), most of eastern Australia and extending through the centre of the continent to the Pilbara district of Western Australia, or alternatively *Trichosurus arnhemensis* (Collett, 1897), with a type locality of Daly River, Northern Territory, Australia being of the top end of the Northern Territory and much of the Kimberley District in Western Australia, except for the north-west.

T. mowlabluffmassacre sp. nov. is in fact not of either species and been separated from *T. hypoleucus* (Wagner, 1855), with a type locality of south-west Australia and generally of south-west Western Australia, the nearest related form for a period believed to exceed 1 MYA.

T. mowlabluffmassacre sp. nov. is most readily separated from both *T. hypoleucus* and *T. arnhemensis* by the presence of well defined dark greyish black on the cheeks, versus not so in the other two species.

The preceding, combined with fur that is more-or-less lighter on top of the body rather than on the sides or of similar intensity top and bottom, being generally of a lightish grey colour on top of the dorsum, whitish venter below (except for active scent gland areas in males), a greyish-black tail, that goes from grey to blackish at the anterior end, but not in a sudden way, the tail itself being shorter and thinner than seen in all other species within the genus *Trichosurus* Lesson, 1828, reddish-brown on the upper surfaces of the lower limbs in males, and a relatively smaller, thinner more gracile build, with a slightly shorter snout, separates this species from all others within the genus *Trichosurus* Lesson, 1828.

Species in the genus *Trichosurus* are unique among the marsupials, in that they have shifted the hypaxial muscles from the epipubic to the pelvis, much like in placental mammals, meaning that their breathing cycle is more similar to the latter than to that of other non-eutherian mammals (Reilly *et al.* 2010).

Trichosurus mowlabluffmassacre sp. nov. from the Broome area is depicted in life online at:

https://www.inaturalist.org/observations/270600690

and

https://www.inaturalist.org/observations/188954633

and

https://www.inaturalist.org/observations/135883027

Distribution: *T. mowlabluffmassacre sp. nov.* is known only from within a 20 km radius of the Broome area in Western Australia and may well be confined by biogeographic barriers and competing species proximal on all sides, including the Great Sandy Desert to the South and Kimberley District to the north.

The population appears to be doing well in Broome, where they can be seen active in built up areas most nights if one looks. Outside of the urban area, numbers appear to be sparse.
The comments of Hoser (2019a-b) in particular apply with respect of the conservation of this taxon.

Etymology: The Mowla Bluff massacre, for which this species has its etymology, was a pre-planned extermination of native Australian Aboriginals of the Warrwa tribe of people in 1916.

British invaders sought to take as their own the Mowla Bluff area for cattle grazing and "needed" to exterminate the indigenous people at nearby Geegully Creek.

They had been living there for thousands of years.

The Aboriginals were simply rounded up at gunpoint and when all that could be found were captured, they were killed by firing squad.

The Mowla Bluff cattle station continues to the present day (2025).

In 2001, the Western Australian Police Commissioner Barry Matthews denied that the massacre occurred because there were no survivors.

More details at:

https://monumentaustralia.org.au/themes/conflict/indigenous/display/60844-mowla-bluff-massacre

and

https://web.archive.org/web/20030726024102/http://www.abc.net.au/worldtoday/s205699.htm

TRICHOSURUS FORRESTRIVERMASSACRE SP. NOV.

LSIDurn:lsid:zoobank.org:act:249E2BDB-36E9-44DC-A02D-77707E33E6A8

Holotype: A preserved adult male specimen in formalin at the Western Australian Museum (WAM), Perth, Western Australia, Australia, specimen number M22026 collected from Mitchell Plateau, Western Australia, Australia, Latitude -14.8 S., Longitude 125.8 E.

This government-owned facility allows access to its holdings.

Paratypes: Two preserved specimens at the Western Australian Museum (WAM), Perth, Western Australia, Australia, being specimen numbers M15348 (adult male) and M22089

(subadult male) both collected from Mitchell Plateau, Western Australia, Australia, Latitude -14.8 S., Longitude 125.8 E.

Diagnosis: Until now *Trichosurus forrestrivermassacre sp. nov.* of the Mitchell Plateau region of the Kimberley District of Western Australia has been treated as a divergent population of *T. arnhemensis* (Collett, 1897), with a type locality of Daly River,

Northern Territory, Australia being a taxon of the top end of the Northern Territory and much of the Kimberley District in Western Australia, except for the north-west area around the Mitchell River plateau.

T. forrestrivermassacre sp. nov. is readily separated from *T. arnhemensis* by having (in adult females) obvious reddish-brown on the inner and outer edges of the ears, dark brown around the snout, lighter brown markings around the cheeks, obviously brownish fur on the upper surfaces of the distal limbs, reddish-brown on the rump, versus beige around the cheeks and neck, greyish fur on the upper surfaces of the distal limbs and only a slight brown on the rump in *T. arnhemensis.*

T. arnhemensis and *T. forrestrivermassacre sp. nov.* are separated from other species in the genus *Trichosurus* Lesson, 1828 by being greyish all over on top, with little if any variation in colour of the fur on the dorsum, a white or whitish underbelly, with less hair than other species and pink skin, smaller adult size and a relatively thin tail that has sparse hair on it and is not at all brushy at the end like in the other species. The ears are long and oval shaped.

The morphologically similar species *T. abnerrangemassacre sp. nov.* is separated from *T. arnhemensis* and *T. forrestrivermassacre sp. nov.* by having a tail that is slightly brushy at the end, and ears that are slightly elongate and rectangular rather than oval in shape and have little if any black or grey pigment inside, versus quite a lot in the other two.

Like *T. arnhemensis* and *T. forrestrivermassacre sp. nov.* it is separated from other species in the genus *Trichosurus* Lesson, 1828 by being greyish all over on top, with little if any variation in colour of the fur on the dorsum, a white or whitish underbelly, with less hair than other species and pink skin, smaller adult size and a relatively thin tail.

Species in the genus *Trichosurus* are unique among the marsupials, in that they have shifted the hypaxial muscles from the epipubic to the pelvis, much like in placental mammals, meaning that their breathing cycle is more similar to the latter than to that of other non-eutherian mammals (Reilly *et al.* 2010).

Distribution: *Trichosurus forrestrivermassacre sp. nov.* is a taxon apparently confined to the Mitchell Plateau region of the Kimberley District of Western Australia.

Etymology: The Forrest River massacre (or Oombulgurri massacre) in the north Kimberley of Western Australia is from where the etymology of this species comes from.

It was a massacre of indigenous Aboriginal Australians people by a group of law enforcement personnel and civilians in June 1926, in the wake of the killing of an invading British land thief, Frederick Hay in the north Kimberley area of Western Australia.

Hay had raped an Aboriginal woman named Angaloo and then been killed by her husband named Lumbia.

West Australian Police constables Graham St Jack and Denis Regan led a gang of 13 police who then killed 16 Aboriginal men, women and children.

In 2011, 10 survivors of the Oombulgurri people scratching for survival in the nearby settlement of Forrest River were again driven out of their settlement by Western Australian Police under threat of being shot.

Further details at:

https://www.theguardian.com/australia-news/2019/mar/08/a-very-tragic-history-how-the-trauma-of-a-1926-massacre-echoes-through-the-years

and

https://aiatsis.gov.au/sites/default/files/research_pub/white-christ-sample.pdf

TRICHOSURUS ABNERRANGEMASSACRE SP. NOV.

LSIDurn:lsid:zoobank.org:act:FAC06B8A-8C04-41F9-A501-0CCBFDB60A51

Holotype: A preserved specimen at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen number C4495 collected from Macarthur River, Borroloola, Northern Territory, Australia, Latitude -16.07 S., Longitude 136.3 E.

This government-owned facility allows access to its holdings.

Diagnosis: *Trichosurus abnerrangemassacre sp. nov*. is a taxon apparently confined to the hilly areas immediately south of the Gulf of Carpentaria in the Northern Territory, generally within 100 km of the type locality.

Specimens from the islands in the Gulf of Carpentaria, far east of the Northern Territory and Selwyn Range district of far northwest Queensland may also be referrable to this species, but this is by no means certain.

T. abnerrangemassacre sp. nov. from the hilly area in the south of the Gulf of Carpentaria, Northern Territory is morphologically similar in most respects to *T. arnhemensis* and *T. forrestrivermassacre sp. nov.*. It is separated from those two species by having a tail that is slightly brushy at the end, and ears that are slightly more elongate and rectangular rather than oval in shape and have little if any black or grey pigment inside, versus quite a lot in the other two species.

The three species *T. abnerrangemassacre sp. nov.*, *T. arnhemensis* and *T. forrestrivermassacre sp. nov.*. are separated from other species in the genus *Trichosurus* Lesson, 1828 by being greyish all over on top, with little if any variation in colour of the fur on the dorsum, a white or whitish underbelly, with less hair than other species and pink skin, smaller adult size and a relatively thin tail.

Species in the genus *Trichosurus* are unique among the marsupials, in that they have shifted the hypaxial muscles from the epipubic to the pelvis, much like in placental mammals, meaning that their breathing cycle is more similar to the latter than to that of other non-eutherian mammals (Reilly *et al.* 2010).

Distribution: *Trichosurus abnerrangemassacre sp. nov*. is a taxon apparently confined to the hilly areas immediately south of the Gulf of Carpentaria in the Northern Territory, generally within 100 km of the type locality.

Specimens from the islands in the Gulf of Carpentaria, far east of the Northern Territory and Selwyn Range district of far northwest Queensland may also be referrable to this species, but this is by no means certain.

Etymology: Ted Lenehan, was a British invader who assumed ownership of an area now known as the McArthur River Station for the purpose of grazing stock.

He was “hunting blacks” in March 1886 when he was speared by one of his victims.

His body was dismembered in a practice performed by the Ngarnji tribe “*for particularly violent men, to prevent their spirit from continuing to perform evil deeds*”.

After Lenehan’s death, Sir John Cockburn, Minister for the Northern Territory in the Downer Government in South Australia, ordered Constable William Curtis and five other police based at the Roper River to deal with the blacks.

In May 1886, this group met with the McArthur River Station manager, Tom Lynott, and 15 stockmen, including the notorious Tommy Campbell who then used captured Aboriginals to take them to their peoples.

One of the massacres that followed occurred on top of the Abner Range, a hundred kilometres from where Lenehan had been killed, giving the etymology for this species.

After picking up the fresh tracks of about 70 or 80 fleeing Aboriginals, the party of 22 galloped on horseback after them. The blacks were travelling so fast that some of the old ladies couldn’t keep up and were left behind.

At least 25 of the native Aboriginal women were exterminated by the gang of 22.

More details at:

https://c21ch.newcastle.edu.au/colonialmassacres/detail.php?r=705

and

https://web.archive.org/web/20150914015222/https://www.themonthly.com.au/issue/2009/november/1330478364/tony-roberts/brutal-truth

TRICHOSURUS MOUNTMANDURANAMASSACRE SP. NOV.

LSIDurn:lsid:zoobank.org:act:73746DDD-CA29-4951-B106-868E4AFCD037

Holotype: A preserved specimen (skull and skeleton) at the Queensland Museum, Brisbane, Queensland, Australia, specimen number JM22088 collected from near Victoria Park, Mackay, Queensland, Australia, Latitude -21.147222 S., Longitude 149.195278 E.

This government-owned facility allows access to its holdings.

Paratypes: Three preserved specimens at the Queensland

Museum, Brisbane, Queensland, Australia, being specimen numbers J10068 (juvenile male, skin and skull), J10067 (female, skin and skull) and J10069 (male, skin and skull), all collected from the Broken River, Eungella Range, Queensland, Australia, Latitude -21.166667 S., Longitude 148.5 E.

Diagnosis: Until now, *Trichosurus mountmanduranamassacre sp. nov*. of the Mackay / Eungella area in mid-eastern Queensland, Australia has been treated as a population of *T. johnstonii* (Ramsay, 1888), with a type locality of Bellenden Ker Range (near Cairns) and generally of the Atherton Tableland, extending south to the Burdekin River.

T. mountmanduranamassacre sp. nov. is readily separated from *T. johnstonii* by the fact that the Coppery sheen on the hair of the dorsum is lighter and yellowish in colour, versus more strongly russet in *T. johnstonii,* the upper surfaces of the distal parts of the limbs are slightly yellowish-brown, versus strongly coppery brown in *T. johnstonii* and the black bar-type markings from the snout to the eye tend to break up anterior to the eye, versus runs into the eye in *T. johnstonii*.

The similar and closely related species *T. eburacensis* (Lönnberg, 1916), with a type locality of Olen Creek, Cape York, being a taxon from upper Cape York, Queensland, Australia is separated from the preceding two species by having yellowish-grey fur underneath, versus whitish yellow in *T. mountmanduranamassacre sp. nov*. or orangeish white in *T. johnstonii*.

In common with *T. johnstonii* the species *T. eburacensis* has a greater amount of black around the snout, both above and below the pink nose patch.

The three species *T. mountmanduranamassacre sp. nov*., *T. johnstonii* and *T. eburacensis* are separated from all other species within the genus *Trichosurus* Lesson, 1828 by having a longer, thicker and bulkier tail than seen in the other species as well as significantly larger molars in the adult males. In order by size, the tails are largest and with thickest hairs at the distal end in *T. mountmanduranamassacre sp. nov*., followed by *T. johnstonii* and then *T. eburacensis*.

Species in the genus *Trichosurus* are unique among the marsupials, in that they have shifted the hypaxial muscles from the epipubic to the pelvis, much like in placental mammals, meaning that their breathing cycle is more similar to the latter than to that of other non-eutherian mammals (Reilly *et al.* 2010).

T. mountmanduranamassacre sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/8405537

from Mackay, Queensland, Australia, photographed by “trcabroad”, and

https://www.inaturalist.org/observations/268699315

from Mackay, Queensland, Australia, photographed by “thenakedenviro”.

T. eburacensis is depicted in life online at:

https://www.inaturalist.org/observations/262929584

from Coen, Queensland, Australia, photographed by Josh Lennon.

T. johnstonii is depicted in life online at:

https://www.inaturalist.org/observations/264749601

and

https://www.inaturalist.org/observations/206224070

both from Mareeba, Queensland, Australia, photographed by “alicemareeba”, and

https://www.inaturalist.org/observations/267279438

from Tolga, Queensland, Australia, photographed by C. C. White, and

https://www.inaturalist.org/observations/143710653

from Lake Eacham, Queensland, Australia, photographed by “lylabee23”.

Distribution: *Trichosurus mountmanduranamassacre sp. nov*. is only known with certainty from the Mackay / Eungella area in mid-eastern Queensland, Australia, but all brush-tailed possums from Bowen in the North and St. Lawrence in the south along the wetter coastal strip of Queensland are tentatively referred to this species. That is area of roughly 300 km in length and an average of about 50 km width, giving an area of about 15,000 square km of range, although obviously a lot of this area is effectively uninhabitable for the taxon as it consists of intensively farmed sugar cane fields.

Etymology: The Leap at Mount Mandurana, North Queensland (near Mackay) is the general area of a massacre of at least 50 native Australian Aboriginals of the Yuwibara people by invading British colonists acting on the instigation of the British Monarch.

The genocide occurred sometime between 10 Apr 1867 and 30 Apr 1867 and forms the etymology for this species.

Remaining, surviving Yuwibara people are generally without property ownership of any kind and as of 2025, most still live a miserable existence avoiding prowling Queensland Police who cruise the local roads seeking Yuwibara people to bash and rob of any remaining possessions.

More details at:

https://c21ch.newcastle.edu.au/colonialmassacres/detail.php?r=1014

and

https://www.news.com.au/national/queensland/news/tourism-fail-i-took-the-leap-sign-installed-on-site-where-woman-leapt-to-her-death/news-story/8dd0255b53d124ad9b1068e934abef75

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CONFLICT OF INTEREST

None.

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Xerotyphlops Hedges *et al.* 2014 is a junior synonym of *Lenhosertyphlops* Hoser, 2012 and 12 new species in the genus *Lenhosertyphlops* from Türkiye and the Levant.

LSIDURN:LSID:ZOOBANK.ORG:PUB:7D0C08AB-483B-4C8A-B540-EB75CB820ED5

RAYMOND T. HOSER
LSID urn:lsid:zoobank.org:author:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
***Phone*: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au**
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ABSTRACT

In a major monograph being a review of the extant Scolecophidians, Hoser in 2012 formally named numerous genera and species of Blindsnake.

This included *Lenhosertyphlops* Hoser, 2012 for the *Anguis lumbricalis* Daudin, 1803 species group AKA the *Typhlops vermicularis* Merrem, 1820 species group, being the well-known the Eurasian Blindsnake at page 28.

In 2014, Hedges *et al*. (2014) followed the advice of the Wolfgang Wuster / Adam Britton gang of hard-core criminals, sex offenders and thieves via Kaiser *et al*. (2013) to unlawfully create an objective junior synonym *Xerotypholops* Hedges *et al.* 2014 in anticipation of the International Commission of Zoological Nomenclature (ICZN) formally erasing all Hoser works from the scientific record (Kaiser et al. 2013, Rhodin *et al*. 2015). That application of Rhodin *et al*. (2015) was REJECTED by the ICZN, on 30 April 2021 (ICZN 2021) making *Lenhosertyphlops* Hoser, 2012 the only correct and available name for the genus.

Wolfgang Wuster / Adam Britton gang member Adam Britton has recently been jailed till at least 2028 for stealing people's pet dogs and anally raping them. His citation of Kaiser *et al*. (2013) as justification for his crimes was not accepted by the Supreme Court of the Northern Territory.

This paper serves to underline these facts in wake of the continued use of the invalid name *Xerotypholops* and ten other illegally coined Blindsnake genus names, with the active encouragement of the Wuster / Britton gang, including on reptile databases they despotically control including that managed by Peter Uetz at: https://reptile-database.reptarium.cz/

When Hoser published his major Blindsnake paper in 2012 it was well-known that putative *Lenhosertyphlops vermicularis* (Merrem, 1820), including putative *Typhlops syriacus* Jan, 1864 consisted of a number of allopatric species, separated across well-known and established biogeographical barriers, since confirmed by Kornilios *et al.* (2011, 2012 and 2020) and Akman and Gocmen (2019). Yet as of 2025, no one had shown any inclination to formally name the relevant unnamed lineages, except for Torki (2017) who made a botched attempt of naming one unnamed lineage (however, his name is treated as valid under the ICZN rules).

The purpose of this paper is therefore also to formally name 12 hitherto unnamed species and one subspecies in the complex, so that each can be managed and conserved by relevant government agencies, non-government organisations (NGO's) and others.

The species *Lenhosertyphlops etheridgei* (Wallach, 2002) is herein placed in a new genus *Quazilenhosertyphlops gen. nov...*The remainder of *Lenhosertyphlops* is divided into two subgenera. Due to the Australian Blindsnake genus *Aa* Hoser, 2025 being a homonym (and therefore not an available name), the species placed into the genus *Aa* Hoser, 2025 are assigned to a newly named genus *Notanaa gen. nov...*

Keywords: Taxonomy; nomenclature; Blindsnake; *Lenhosertyphlops*; *Xerotyphlops*; *aa*; taxonomic vandalism; *vermicularis*; *lumbricalis*; *luristanicus*; *etheridgei*; *socotranus*; *syriacus*; *persicus*; *wilsoni*; new genus: *Notanaa*; *Quazilenhosertyphlops*; new subgenus; *Paralenhosertyphlops*; new species; *netanyahui*; *menachembegini*; *husseinbintalali*; *misfitmindss*; *lenhoseri*; *notaxerotyphlops*; *isalenhosertyphlops*; *isntxerotyphlops*; *yeslenhosertyphlops*; *anotherlenhosertyphlops*; *agoodlenhosertyphlops*; *correctnomenclature*; new subspecies; *ok.*

INTRODUCTION

In a major monograph being review of the extant Scolecophidians Hoser (2012d) formally named numerous genera and species of Blindsnake as part of a planet wide revision.

Hoser (2013a, 2025) continued this process for Australia, including a continent-wide review of species, resulting in 81 new species in the two papers combined, more than doubling the number of recognized species.

Most had been flagged in earlier molecular studies.

Among the dozens of new genera named in Hoser (2012d) included *Lenhosertyphlops* Hoser, 2012 for the *Anguis lumbricalis* Daudin, 1803 AKA the *Typhlops vermicularis* Merrem, 1820 species group, being the well-known the Eurasian Blindsnake at page 28.

In 2014, Hedges *et al*. (2014) followed the advice of the Wolfgang Wuster / Adam Britton gang of hard-core criminals and thieves via Kaiser *et al*. (2013) to break rules, regulations and ethics as they please.

They did this to breach copyright laws, including the Australian Copyright Act 1968, Section 195 (Moral Rights) and the *International Code of Zoological Nomenclature* (Ride *et al*. 1999) to unlawfully create an objective junior synonym name *Xerotyphlops* Hedges *et al.* 2014 in anticipation of the International Commission of Zoological Nomenclature (ICZN) formally erasing all Hoser works from the scientific record (Kaiser et al. 2013, Rhodin *et al*. 2015).

That application of Rhodin *et al*. (2015) was REJECTED by the ICZN, on 30 April 2021 (ICZN 2021) making *Lenhosertyphlops* Hoser, 2012 the only correct and available name for the genus.

This paper serves to underline this fact in wake of the continued forced use of the invalid name *Xerotyphlops* with the active encouragement of the Wuster / Britton gang, including on reptile databases they despotically control and censor including that managed by Peter Uetz at:
https://reptile-database.reptarium.cz/

Key Wolfgang Wuster / Adam Britton gang member Adam Britton has recently been jailed till at least 2028 for stealing people's pet dogs and anally raping them, before posting the depraved videos online for commercial gain and satisfaction.

For details see at:
https://www.abc.net.au/news/2024-08-08/adam-britton-sentenced-bestiality-animal-cruelty/104194702
Britton was ultimately charged for doing these acts dozens of times (Fitzgerald 2024) after falling out with a business partner Graeme Webb but had been doing these bestiality acts with police-protection for decades as had other members of the Wolfgang Wuster / Adam Britton gang.

Britton's attempted citation of Kaiser *et al*. (2013) as justification for his crimes was not accepted by the Supreme Court of the Northern Territory, so before the full trial he pled guilty to some of his crimes and he was convicted of multiple (dozens) of criminal offences.

When Hoser (2012d) was published it was well-known (to me and any other relevant herpetologists at least) that putative *Lenhosertyphlops vermicularis* (Merrem, 1820), including putative *Typhlops syriacus* Jan, 1864 consisted of a number of allopatric species, separated across well-known and established biogeographical barriers.

This was confirmed by the molecular data of Kornilios *et al.* (2011, 2012 and 2020) and yet as of 2025, no one had shown any inclination to formally name the relevant unnamed lineages.

The purpose of this paper is therefore also to formally name the hitherto unnamed species in the complex, so that each can be managed and conserved by relevant government agencies, non-government organisations (NGO's), as well as concerned members of the public, if legal and safety conditions allow this.

Hoser (2014) placed the species *Lenhosertyphlops socotranus* (Boulenger, 1889) into the monotypic genus *Korniliostyphlops* Hoser, 2014 based on a divergence estimated at 19.6 MYA from *Lenhosertyphlops*.

The species *Lenhosertyphlops etheridgei* (Wallach, 2002) is herein placed in a new genus *Quazilenhosertyphlops gen. nov.* due to significant divergence from other species in *Lenhosertyphlops* as defined in Hoser (2012d).

The species *Lenhosertyphlops etheridgei* (Wallach, 2002) is so morphologically and geographically disjunct from putative *Lenhosertyphlops vermicularis* (Merrem, 1820), including putative *Typhlops syriacus* Jan, 1864 that it is not tenable to have it remain in the genus *Lenhosertyphlops.*

Hence an added role of this paper is to erect a new genus for the taxon.

The remainder of *Lenhosertyphlops* is divided into two distinct groups and these are herein placed in newly identified subgenera.

Due to the Blindsnake genus *Aa* Hoser, 2025 being a homonym (and therefore not an available name), the species placed into the genus *Aa* Hoser, 2025 by Hoser (2025b) are herein assigned to a newly named genus.

MATERIALS AND METHODS

In terms of materials and methods, these are as for Hoser (2025b) but instead applied to all populations of putative *L. vermicularis* (Merrem, 1820), including synonym names applied to various populations of the putative the species including *L. syriacus* (Jan, 1883), *L. persicus* (Blanford, 1874), *L. wilsoni* (Wall, 1908) and *L. luristanicus* (Torki, 2017).

Available specimens of the relevant putative genus were inspected from all parts of their known distributions. They were checked for morphological divergences and/or obvious biogeographical barriers separating the populations, including those flagged in papers such as those listed above and below.

The identified distributional breaks and barriers were (for the first time ever) cross matched against known distributions of potentially competing and/or predatory species as part of the process to confirm that the barriers seen were real and not merely modern (Holocene) artefacts or only apparent on the basis of non-collection in the relevant areas, but rather that the barriers were real zones of absence for the relevant blindsnakes.

Distributions were also mapped against rock and soil types to see if these also affected the relevant taxa.

Specimens inspected included dead and live specimens as well as images with good locality data including photo sharing sites online like "Inaturalist", "Twitter" (AKA "X"), "Flickr", "Facebook" and "Instagram".

Molecular studies involving species within *Lenhosertyphlops* Hoser, 2012 *sensu lato* and other similarly distributed reptiles and frogs from across south Europe and the Middle East were also reviewed to flag likely speciation points for wider-ranging putative taxa.

A sweep of the published literature and museum databases, photo sharing sites and the like was done to properly ascertain relevant distributions of all known populations of putative *Lenhosertyphlops* species.

References relevant to the taxonomic and nomenclatural decisions herein included Afroosheh *et al.* (2013), Afsar *et al.* (2013, 2016), Akman and Gocmen (2019), Amr *et al*. (1997), Bar *et al*. (2021), Blanford (1874), Boettger (1880, 1898), Boulenger (1893), Broadley and Wallach (2007), Buttle (1988), Daudin (1803), Disi *et al*. (2001), Duméril and Bibron (1844), Fitzinger (1843), Franzen (2000), Franzen and Wallach (2002), Geniez (2018), Gray (1845), Grillitsch *et al.* (1999), Gruber (2009), Gul *et al.* (2015), Hoofien (1958), Hoser (1989, 2012, 2013a-b, 2019a-b, 2020a-c, 2022, 2023a-c, 2024a-b, 2025a-b), ICZN (2012, 2021), Ilani and Shalmon (1984), in den Bosch and Ineich (1994), Iordansky (1997), Jablonski and Balej (2015), Jablonski *et al.* (2024), Jan (1864), Kharabadze (1999), Kornilios (2014, 2017), Kornilios *et al.* (2011, 2012, 2020), Manteuffel (1993), Méhely (1894), Merrem (1820), Mertens and Müller (1928),

Mienis (1982), Paysant (1999), Perry (1985), Pulev *et al.* 2018), Pryon and Wallach (2014), Radovanovic (1960), Rajabizadeh (2018), Richter (1955), Rogner (1995), Schleich (1979), Shaban and Hamzé (2018), Strachinis and Wilson (2014), Torki (2017), Wall (1908), Wallach (1995, 2002), Wallach and Gemel (2018), Wallach and Ineich (1996), Wallach *et al*. (2007), Wutschert (1984), Yadgarov (1971) and sources cited therein.

RESULTS

The various clades identified by the relevant authors in the papers of Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020) are self-evidently of different species, but see the further comments below.

It appears to be obvious that based on the genetic evidence of Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020), combined with the biogeographic history of the east Mediterranean that the widespread lineage of nominate *L. vermicularis* (Merrem, 1820) evolved in the region of east Türkiye and then spread from there both east and west, effectively cutting off many of the other lineages in the process in zones of suboptimal habitat.

The invasion of Greece for example was in the recent geological past (last few MYA) as evidenced by the absence from the bulk of the Cyclades Islands, a group relatively recently separated from the mainland parts of Greece.

More archaic Greek herpetofauna, including viperid species are found and isolated on numerous islands in the Cyclades.

Fossil Blindsnakes from other parts of Europe west of the extant range of *L. vermicularis* (Merrem, 1820) are therefore presumably of extinct lineages and not part of a continuum with modern *L. vermicularis* (Merrem, 1820).

For the first time ever, I can report a direct association between all species of *Lenhosertyphlops* Hoser, 2012 *sensu lato* for limestone, chalk and other similar rock types and soils as their substrate of choice.

This correlation is so stark that distributions of all taxa in the genus *Lenhosertyphlops* can be accurately mapped against distributions of areas of limestone, chalk and other similar rock types and soils. That is, they are not found for example in areas of basalt, granite and other obviously different rock and soil types.

The wide-ranging lineage of the type form of *L. vermicularis* while having a very strong preference for limestone, chalk and other similar rock types and soils is the only one in the genus that will inhabit areas of other substrate, which explains why it has been able to spread across the general distribution of the genus and including areas in which limestone, chalk and other similar rock types and soils are not the dominant substrate.

In the southern Levant, extending north to Türkiye, Blindsnakes of the genus *Trioanotyphlops* Hoser, 2012 effectively replace the wide-ranging lineage of *L. vermicularis* separating out populations effectively stapled to areas of limestone, chalk and other similar rock types and soils.

Those five species are a divergent group and placed in a separate subgenus, namely *Paralenhosertyphlops subgen. nov.*.

Matching available names to the clades identified by Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020) only resulted in three of the various identified clades actually being already named in terms of available species names.

These were as follows:

1/ The type form is *L. vermicularis* (Merrem, 1820), with a type locality of "Archipelago, Asia" (Merrem, 1820) restricted to "*Griechische Inseln [= Greek islands]*" by Mertens and Müller (1928). It occurs from Afghanistan in central Asia, across various countries in this region to south-west Asia, through Iran, Azerbaijan, Armenia, Georgia, Iraq, Türkiye and the Mediterranean coast to include Greece and nearby parts of Albania, extending north to Croatia as well as south Bulgaria.

2/ *L. syriacus* (Jan, 1883), with a type locality of near Beirut was valid and already named, although two associated populations of related species from Jordan and Israel were unnamed.

The phylogenetic results of Kornilios (2017) and Kornilios *et al*. (2012, 2020) actually implied five potential species, not the three identified by Kornilios (2017) and Kornilios *et al*. (2020).

The most relevant biogeographical barrier in the area to distribution of putative *L. syriacus* (Jan, 1883) is the Jordan River Valley.

No specimens are recorded from there. However, this barrier failed to explain the significant divergences of populations between Beiruit, north Israel and central/southern Israel as inferred by the results of Kornilios *et al*. (2020).

I note Kornilios *et al*. (2020) alleged these populations probably comprised two species in total, although the molecular evidence implied three.

These localities are all similar in that they are hilly and rocky (mainly limestones) and all are interrupted by low-lying relatively rock-free zones.

However, that putative *L. syriacus* are somehow stopped by the low-lying areas alone defied reason, as clearly at some stage the proto-species had been able to cross these areas.

Furthermore, in terms of distances, we are only talking 10 or less km between populations by straight line measurements in some cases.

I did a search of all available collection and photo records of putative *L. syriacus* (including under alternative names), including for example "vert net", "inaturalist" and "flickr" and after excluding doubtful location records, ascertained the distribution of putative *L. syriacus* to occupy five main areas, with three west of the Jordan River Valley and two to the east.

These were as follows:

A/ The mountains immediately west of Beiruit, being the inferred exact collection location of the type for *L. syriacus.*

B/ Separated by the Litani River south of here, is the population occupying the so-called Lebanon Mountains in the region of the Lebanon and Israel border region, generally north of the plains of Esdraelon.

C/ South of the plains of Esdraelon, principally in the Jerusalem / Judean Hills and also the low hills in near coastal areas south to Gaza is the third population.

Based on my assessment of the molecular results of Kornilios *et al*. (2020), these are believed to have diverged from one another at least 1.3 MYA.

However, in the absence of yet more compelling evidence, I can see exactly why Kornilios *et al*. (2020) did not rush to name these populations as new species.

D/ In Jordan, east of the Jordan River Valley, was another clade Kornilios *et al*. (2020) also identified as their third potential species in the *L. syriacus* complex.

E/ Further east of the above population, in southern Syria, another divergent population was found, which Kornilios *et al*. (2020) lumped in with the Jordan species but in Kornilios *et al*. (2012) found had diverged 1.2 MYA.

Due to the proximity of locations, this isolation cannot be by distance, but is rather an artifact of allopatric speciation across a well-defined (originally) low-lying rock free zone.

The Jordan and Syrian locations, in common with the Israeli ones were all in elevated and rocky areas. All five locations of limestone rocks and soils were separated by areas that were naturally rock free and of different soils.

I do note however that in recent centuries of massive human population explosions, buildings and wars, bombed building rubble and solid human created waste in the form of concrete slabs and the like litters the entire landscape of Syria, making it a vastly different landscape to what was originally there.

The intervening zones were also subject to semi-regular inundation by floods, which based on my investigations did not have any naturally occurring populations of putative *L. syriacus.*

I then repeated the same distributional exercise with the morphologically similar species *Trioanotyphlops simoni* (Boettger,

1879), being the type species for the genus *Trioanotyphlops* Hoser, 2022 and a known inhabitant of low-lying and swampy areas.

Significantly and with only minor exceptions at the peripheries, this species and putative *L. syriacus* were mutually exclusive.

This inferred that since putative *L. syriacus* occupied the relevant areas, *Trioanotyphlops* has invaded from stock derived from north Africa and cut off the relevant populations for sufficient time to allopatrically speciate.

Even if I am incorrect in assuming that competing *T. simoni* is the causative factor for the isolation of populations of putative *L. syriacus*, the well-defined isolation of the five populations in an area of intensive herpetological fieldwork cannot be denied.

Therefore, because specimens in each population can be easily separated from one another, and are species-level divergent, I have absolutely no hesitation at all in formally naming the four unnamed populations as four new species herein.

3/ *L. luristanicus* (Torki, 2017) with a type locality of Badavar region, Nourabad, Lorestan Province, western Zagros Mountains, western Iran is also a valid named taxon of a region in north-west Iran, again where limestones and the like dominate.

It should be noted that *L. persicus* (Blanford, 1874) and *L. wilsoni* (Wall, 1908) both from further south in Iran correspond with populations of the type form of *L. vermicularis* (Merrem, 1820), based on the phylogenetic results of Kornilios *et al*. (2020) and are therefore relegated to the synonymy of that taxon.

The other eight unnamed clades identified by Kornilios (2017) and Kornilios *et al*. (2012, 2020) of putative *L. vermicularis* that also corresponded to populations more than 1.5 MYA divergent from nearest relatives are also named herein as new species, giving a total of 12 newly named species in this paper (out of 15 in the genus).

These clades are generally proximal to the north-east Mediterranean region, generally proximal to the southern border of Türkiye and north Syria, each taxon being of relatively narrow distribution and as a cohort were more similar to *L. vermicularis* than *L. syriacus* and the other four associated Middle East species.

They remain in the nominate genus of *Lenhosertyphlops* Hoser, 2012, while the five associated with *L. syriacus* (including *L. syriacus*) are placed in the divergent and newly named subgenus *Paralenhosertyphlops subgen. nov.*.

As all 15 species are diagnosable from one another, the twelve unnamed clades are each formally named herein as new species.

One species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012 has a divergent population and it is also named herein as a new subspecies.

The likely causes of separation and isolation of the relevant species clades is discussed in some length in Kornilios (2017) and Kornilios *et al*. (2012) and is not repeated in detail here.

While climatic oscillations may have had some role to play (as asserted by Kornilios *et al*. (2012) as the main driver for speciation), those authors did not consider the effects of competing species, which quite evidently appear to have kept populations apart across barriers that would otherwise be physiologically easy to cross.

I believe the latter to be more likely a stronger driver of speciation in otherwise land-connected populations not separated by obvious sea barriers, as opposed to climate changes.

I know that use of the words “climate change” and “global warming” gain scientists kudos when they invoke it as causative of things in papers, but the reality is that *Lenhosertyphlops* are relatively tough and adaptable in their microhabitats, moving to different temperature zones depending on climate, season and the like.

Given species occupy significant elevation gradients and all this implies that a general oscillation in annual mean temperature of plus or minus 6-8 degrees Celsius over some thousands of years, will not impede or affect the main distributions of the relevant taxa, especially noting their centres of evolution have been in upland areas, not lowland areas and ice-age refugia are going to be lower elevation in any event.

The molecular results do not by my analysis imply any actual extinctions caused by climate oscillations at all in the current and extant distribution of *Lenhosertyphops*, with the possible exception of the recently invaded far north-west of the distribution (north of Greece).

Kornilios *et al*. (2012) and in later papers, failed to investigate the relevance of substrate in the form of rocks or soils derived from them in terms of allopatric speciation and my own inquiries imply this to be a major factor and more so than climate oscillations.

The issue of rock or soil type, being a driver of speciation, including in areas of shifting sand dunes or flood plains is significant in Australia and facilitated speciation in numerous Australian reptile taxa in the Pliocene, as detailed in a number of my papers published in 2022 to 2025, including for example Hoser (2020b, 2022, 2023a-c, 2025a-b).

In terms of those species clades associated with putative *L. vermicularis* it is self-evident that the spread of the widespread clade from east to west able to occupy a range of rock and soil types, caused the populations from (on average) relatively elevated areas of limestone, chalk and other similar rock types and soils to become isolated and in time allopatrically speciate from one another.

There was obviously reproductive separation of the widespread clade of *L. vermicularis* and the other clades at the relevant times they contacted one another and that speciation ongoing occurred, as they would not have been allopatric beyond this time at the peripheries of their ranges.

These clades I refer to are the relevant clades identified in the papers of Kornilios (2017) and Kornilios *et al*. (2012, 2020).

This speciation was in effect enforced by the inability of specimens in these populations to be able to breed with those of the expanding widespread clade that occupied intervening zones (in the same way that *Trioanotyphlops simoni* (Boettger, 1879), prevented separated populations of putative *L. syriacus* from ongoing gene flow). Most of the newly named taxa herein have an estimated divergence in the order of 2-5 MYA from nearest relatives (Kornilios 2017).

The *L. syriacus* complex of species (being five identified herein) has also been variously estimated at about 10 MYA or more divergent from the nominate *L. vermicularis* clade and so is formally named herein as a new subgenus, being *Paralenhosertyphlops subgen. nov.*.

This is in addition to the placement of the species *Lenhosertyphlops etheridgei* (Wallach, 2002) into a new monotypic genus *Quazilenhosertyphlops gen. nov.*.

GENUS *AA* HOSER, 2025 IS A JUNIOR HOMONYM

As already mentioned, the species *Typhlops broomi* Boulenger, 1898 was assigned by Hoser (2025) to a newly erected genus *Aa* Hoser, 2025, along with two newly described species and two more (making a total of 5).

However, overlooked was the fact that the name *Aa* Hoser, 2025 cannot be used, as it is pre-occupied by the subgenus *Philonesia (Aa)* Baker, 1940, of gastropods from Hawaii with type species *P. (Aa) waiheensis*.

The relevant reference is:

Baker, H. B. 1940. Zonitid snails from Pacific Islands. Part 2. 2. Hawaiian genera of Microcystinae. *Bernice P. Bishop Museum Bulletin* 165:105-201, at pp. 107-108 and 145-148, also online at: http://hbs.bishopmuseum.org/pubs-online/pdf/bull165.pdf.

Therefore the five relevant species are herein assigned to a genus newly erected in this paper being *Notanaa gen. nov.*.

This genus description precedes the other new names descriptions in this paper.

Keith Edkins, a UK-based invertebrate taxonomist alerted me to the homonym issue and I thank him for this.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

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

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

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (Ride *et al.* 1999 and ICZN 2012).

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 2 April 2025, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

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

This includes the descriptions of the snakes not including pre-sloughing snakes, which are often significantly different to the usual colouration for the specimen or species, being usually more whitish or dull.

Note that there is ordinarily some sexual dimorphism between adults of species within the relevant taxa and changes in colour often from young to adult.

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

In the unlikely event any "first reviser" seeks to merge two or more newly named taxa into one, then the name to be retained is that which is first by page priority as listed in the abstract keywords.

Some material within descriptions may be repeated to ensure each fully complies with the *International Code of Zoological Nomenclature* (Ride *et al*. 1999) and the 2012 amendments (ICZN 2012).

The "version of record" is the printed version and not pdf version. Both are identical in all materially relevant ways except for the fact that the images in the printed version may be in black and white, as opposed to colour as seen in the pdf version.

The people who assisted with provision of photos and other materials used within this paper or for research by me are also thanked for their assistances, for which they sought nothing in return.

The new genus level descriptions mentioned already, appear before the relevant species descriptions.

The use of provocative and interesting etymologies is deliberate and designed to further public interest in the relevant species, which will aid conservation outcomes and/or to highlight other matters of public importance that may otherwise be overlooked, including the scourge of taxonomic vandalism.

CONSERVATION OF BLIND SNAKES IN WEST ASIA AND SOUTH-EAST EUROPE

In terms of governments in the relevant areas and even so-called herpetologists, there is almost zero concern for the conservation of the Blind Snakes generally.

Quite a few of the species may be endangered due to alterations in supplies of food sources, such as ants in the competition between them and introduced species, the latter of which there are dozens of species.

However, due to the cryptic nature of most Blind Snake species, it is likely that severe declines in numbers will almost certainly be overlooked by herpetologists and governments alike.

In terms of those formally named before now, collectively herpetologists know very little about individual species including such basic facts as what they eat, how long they live for, number of offspring and effects of competing species or food sources on distributions and range expansion constraints.

There are no published baseline figures on preferred habitats.

All we have is general distribution information, from which habitats and preferences can be inferred.

There is no baseline data on what is "normal" for any of the relevant species of Blind Snakes referred to in this paper.

Some newly named species herein have been given unusual and "different" names for the express purpose of encouraging others to take a more active interest in these species and their long-term study and conservation, the latter (conservation) of which is only possible with the action of the former (study).

I make no apologies for choosing scientific names that may at times be deemed humorous, shock, or even offend those who actively look for any excuse to be offended as seems fashionable in some places in year 2025.

However, as no reasonable person could possibly be offended by any of the names I have proposed herein or elsewhere, none of the names breach Recommendation 25 (C) of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

The relevant comments in Hoser (1989, 1991, 1993, 1998a, 2007, 2019a-b, 2024) and sources cited therein apply to the conservation of the species formally named within this paper even though most facts and comments in the cited papers mainly refer to the Australian situation.

THE NEGATIVE IMPACTS OF TAXONOMIC VANDALISM ON THE CONSERVATION OF BLIND SNAKES AND OTHER REPTILES

Human overpopulation and all its associated consequences are without doubt the greatest long-term threat to the relevant species as outlined in Hoser (1989, 1991, 1993 and 1996). Delays in recognition of these species could jeopardise the long-term survival of the taxa as outlined by Hoser (2019a, 2019b) and sources cited therein.

Therefore attempts by taxonomic vandals, paedophiles, serial rapists, animal abusers and wildlife traffickers like the members of the Adam Britton and Wolfgang Wüster gang via Kaiser (2012a, 2012b, 2013, 2014a, 2014b) and Kaiser *et al.* (2013) (as frequently amended and embellished, e.g. Rhodin *et al.* 2015, Naish 2013, as regularly altered and amended, Thiele *et al.* 2020, Hammer and Thiele 2021, Wüster *et al*. 2021, Foley and Rutter 2020) to unlawfully suppress the recognition of these taxa on the basis they have a personal dislike for the person who formally named it/them should be resisted (e.g. Ceriaco *et al*. 2023, Cogger 2014, Dubois *et al*. 2019, Hoser 2001a, Mosyakin 2022 and Wellington 2015).

Claims by the Adam Britton / Wolfgang Wüster gang against this paper and the descriptions herein will no doubt be no different to those the gang have made previously, including for instance against Wells and Wellington (1984, 1985), (see for example Shine 1987, Shea 1987, Shea and Sadlier 1999), all of which were discredited long ago as outlined by Ceraico *et al*. (2023), Cogger (2014), Cotton (2014), Dubois *et al*. (2019), Hawkeswood (2021), Hołyński (1994, 2020), Hoser, (2001, 2007, 2009a, 2012a-c, 2013b, 2015a-f, 2019a-b, 2020a-b, 2021a-b, 2023, 2024a-b), ICZN (1991, 2001, 2021), Jiménez-Mejías *et al*. (2024), Kok (2023), Mosyakin (2022), Pethigayoda (2023), Wellington (2015), Winkler (2024), Zheng and Gold (2020) and sources cited therein.

Attempts to engage in acts of scientific fraud to try to rename any of these newly named taxa should be exposed and dealt with appropriately, as was done with David Williams, when in 2001 he attempted to rename and/or claim name authority for the species *Pailsus rossignolii* Hoser, 2000 (See Hoser 2000a).

He did this in the first instance in 2001, by altering versions of his

online "paper" (as seen in Williams and Starkey 1999a, 1999b and 1999c), all of which were different and changed versions of a single paper originally published in the first form in 1999, claiming (without any evidence) to refute the existence of the species *Pailsus pailsei* Hoser, 1998 (see Hoser 1998b and Hoser 2001 for details).

Claims by Shea and Sadlier (1999) and similar elsewhere by the Wüster gang to the effect that earlier published names are unavailable for zoological nomenclature are patently false and the making of these false claims is seriously counter to wildlife conservation (Hoser, 2007, Ceriaco *et al*. 2023, Cogger 2014, Cotton 2014, and so on).

NOTANAA GEN. NO.

LSIDurn:lsid:zoobank.org:act:4BD4D3A3-65EE-423B-B25E-0B5E3F874FB5

Type species: *Aa aa* Hoser, 2025.

Diagnosis: The genus *Notanaa gen. nov.* are separated from all other Australian Blind Snakes by the following suite of characters: Pink, purple, light brown, brown, blackish above, becoming vaguely whitish or yellowish white below. The flanks are coloured same as the dorsum and there is no obvious demarcation between the dorsal colour and the venter as one moves to the very underneath of the snake.

The dark dorsal colour forms into obvious or semi-distinct longitudinal streaks formed by dark patches on the anterior part of each dorsal scale (in contrast to the related genus *Slopptyphlops* Hoser, 2013 where such longitudinal streaks are not seen in adults). The snout is entirely rounded from above and in profile, ranging from being somewhat blunt to slightly angular. The nasal cleft which may or may not be visible from above (if it is, then only just), joins the preocular, continuing in front of the nostril and often dividing the nasal. The rostral is oval in the genus *Notanaa gen. nov.* versus relatively narrow and constricted from above in the genus *Slopptyphlops* Hoser, 2013, being longer than broad. 20 midbody scale rows. Body diameter 30-70 times in its length. Average adult maximum length is 25 cm and doesn't exceed 35 cm.

Distribution: Restricted to the very top end of the Northern Territory and north parts of Cape York, Queensland, in far north Australia.

Etymology: Late at night in 2019 when I asked Paul Woolf, the president of the Herpetological Society of Queensland Incorporated, what the genus name for these snakes should be called he simply went "aa", and hence the first proposed genus name as done in the paper of Hoser (2025).

However, overlooked was the fact that the name *Aa* Hoser, 2025 cannot be used, as it is pre-occupied by the subgenus *Philonesia (Aa)* Baker, 1940, of gastropods from Hawaii with type species *P. (Aa) waiheensis*.

The relevant reference is: Baker, H. B. 1940. Zonitid snails from Pacific Islands. Part 2. 2. Hawaiian genera of Microcystinae. *Bernice P. Bishop Museum Bulletin* 165:105-201, at pp. 107-108 and 145-148, also online at: http://hbs.bishopmuseum.org/pubs-online/pdf/bull165.pdf. Therefore the five relevant species are herein assigned to this genus newly named in this paper being *Notanaa gen. nov.*.

This genus name is a direct take of the literal English words "not an *aa*" in reflection of what they are.

This genus name is a noun in apposition.

Keith Edkins, a UK-based taxonomist alerted me to the homonym issue and I thank him for this.

Content: *Notanaa aa* (Hoser, 2025) (type species), *N. aaaaagh* (Hoser, 2025), *N. broomi* (Boulenger, 1898), *N. chamodracaena* (Ingram and Covacevich, 1993), *N. tovelli* (Loveridge, 1945).

QUAZILENHOSERTYPHLOPS GEN. NOV.

LSIDurn:lsid:zoobank.org:act:B87E3438-05D7-4445-B5BC-FDBF48D710A0

Type species: *Typhlops etheridgei* Wallach, 2002.

Diagnosis: *Quazilenhosertyphlops gen. nov*. is monotypic for the species originally described as "*Typhlops etheridgei* Wallach, 2002".

Blindsnakes within this genus can be separated from all other Blindsnakes by the following unique combination of characters:

T-III supralabial imbrication pattern (SIP), 24 midbody scale rows, 424 middorsal scales, rounded snout without papillae, a typical head shield arrangement as opposed to circular, the infranasal suture contacts the preocular, prefrontal twice; frontal less than 0.5 prefrontal, posterior border of preocular with dorsal concavity, superior nasal suture visible dorsally, total length/midbody diameter ratio 55, tail length to total length 1.1%, tail length to midtail width 1.0 and rostral width/head width 0.41 (derived largely from Wallach 2002).

Wallach (2002) specifically details which of these preceding features separate this species and genus from other Eurasian and African Blind Snakes in genera as defined by him in his paper of 2002.

Quazilenhosertyphlops gen. nov. is separable from *Rhinotyphlops* Fitzinger, 1843 by the T-III SIP (vs. T-0 or T-II), from *Acutotyphlops* Wallach, 1995 by the 24 midbody scale rows (vs. 26-36) and rounded snout (vs. pointed snout), from *Cyclotyphlops* in Den Bosch and Ineich, 1994 by its typical head shields (vs. circular arrangement), and from *Xenotyphlops* Wallach and Ineich, 1996 by the T-III SIP (vs. T-0) and papillaless rounded snout (vs. pointed snout with papillae). *Quazilenhosertyphlops gen. nov*. shares the T-III SIP with genera *Ramphotyphlops* and other Australian and Asian Blindsnake genera including *Anilios* Gray, 1845 (*sensu lato*, *sensu* Wilson and Swan 2021 as divided by Hoser 2025b) and *Maxhoserus* Hoser, 2012 by the combination of the infranasal suture contacting the second supralabial and 24 midbody scale rows.

Quazilenhosertyphlops gen. nov. is separated from the morphologically similar *Lenhosertyphlops* Hoser, 2012 by the following combination of characters (*Lenhosertyphlops* characters in brackets): The number of middorsal scales 424 (302-413), prefrontal twice as broad as deep (as broad as deep), frontal less than 0.5 prefrontal (1.0), posterior border of preocular with dorsal concavity (border straight), superior nasal suture visible dorsally (not visible), total length/midbody diameter ratio 55 (34-52), tail length/total length 1.1% (1.8-2.5%), tail length/midtail width 1.0 (1.3-1.5), and rostral width/head width 0.41 (0.30-0.38) (modified from Wallach 2002).

Korniliostyphlops Hoser, 2014 species (only one species extant in that genus) are separated from both *Quazilenhosertyphlops gen. nov.* and *Lenhosertyphlops* Hoser, 2012 species by having a whiteish striped dorsal colouration, less flattened snout, more distinct eyes and a preocular that is much broader than the ocular (versus one that is about the same width).

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Distribution: *Quazilenhosertyphlops gen. nov*. is only known from the type locality of the single specimen known, being Amsâga of western Mauritania, West Africa, Latitude 21° N., Longitude -13° W.

Etymology: The name *Quazilenhosertyphlops gen. nov*. comes from the fact that this genus resembles *Lenhosertyphlops* Hoser, 2012.

The genus name is a noun in apposition.

Content: *Quazilenhosertyphlops etheridgei* (Wallach, 2002).

PARALENHOSERTYPHLOPS SUBGEN. NOV.

LSIDurn:lsid:zoobank.org:act:3D6530DF-1CB6-4BF3-8FEC-4B79E5E402AD

Type species: *Lenhosertyphlops (Paralenhosertyphlops) netanyahui sp. nov.*

Diagnosis: The five species within the genus *Paralenhosertyphlops subgen. nov*. are separated from those in the nominate genus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish-purple on top, (in mature adults) and also with relatively well-defined dark edges on the posterior of each dorsal scale.

Lenhosertyphlops Hoser, 2012 species are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Distribution and relevant comment: *Paralenhosertyphlops subgen. nov*. species occur in the region including Lebanon, Jordan, nearby parts of Syria, most of Israel and with an element of doubt, potentially nearby parts of Egypt, including the Sinai Peninsula.

No specimens have been collected on the Sinai Peninsula in the past 100 years and the old records of Duméril and Bibron (1844) may refer to the general area, and not necessarily the Peninsula as recognised today.

Wallach (2002) noted:

"*One of the specimens from the base of Mt. Sinai, southern Sinai Peninsula, reported by Duméril and Bibron(1844), is in the Leiden Museum (RMNH3719).*"

However, my reading of the original work of Duméril and Bibron said "*au pied du Sinaï*," which translated as "*at the foot of Sinai*".

This may have referred to the foot of the desert, rather than the mountain or even the part of Isreal that borders the Sinai, as in the Negev Desert.

There could easily be specimens of putative *Paralenhosertyphlops* in the lower Sinai, where the mountains are large and microclimate allows for these species to survive.

However, mitigating against this concept to some extent is the main rock type there, being granitic. My own inquiries of the entire distribution of most *Lenhosertyphlops* including *Paralenhosertyphlops* has been that they are almost always effectively stapled to substrates that are limestone based or similar, at least in the case from Greece, through southern Türkiye, Syria, Lebanon, Israel, Jordan and north-west Iran.

I note for example that no *Lenhosertyphlops* are found in areas of basaltic rocks to the north of Türkiye well away from the Mediterranean coasts.

With a fairly flat, straight line of sandy substrate of apparently unsuitable habitat, sitting across the northern Sinai running broadly between lower Gaza and the lower Jordan Valley, there is firm biogeographical barrier preventing any movement between populations in Judea/Samaria and the adjacent upper Negev to those of the lower Sinai Peninsula, if they are extant.

To the west the Mediterranean is an obvious barrier as is the Jordan Valley to the east.

This would mean any *Lenhosertyphlops* species occupying the south Sinai area (including Mount Sinai) would be of a different species to those five recognised herein within *Paralenhosertyphlops subgen. nov*..

In other words, a serious attempt should be made to find any populations of *Lenhosertyphlops* on the lower Sinai Peninsula, including the Mount Sinai area and they should (if extant) be formally named and brought into the modern sciences as a valid and separate species as a matter of urgency.

Etymology: *Paralenhosertyphlops subgen. nov*. is named in reflection of the fact that relevant species occur in a distributional sense adjacent to those species within *Lenhosertyphlops* Hoser, 2012 and are also very similar in form to those within the nominate genus *Lenhosertyphlops* Hoser, 2012.

The subgenus name is a noun in apposition.

Content: *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species (this paper), *L.* (*Paralenhosertyphlops*) *husseinbintalali sp. nov*. (this paper), *L.* (*Paralenhosertyphlops*) *menachembegini sp. nov*. (this paper), *L.* (*Paralenhosertyphlops*) *misfitmindss sp. nov*. (this paper), *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

LENHOSERTYPHLOPS* (*PARALENHOSERTYPHLOPS*) *NETANYAHUI SP. NOV.

LSIDurn:lsid:zoobank.org:act:6E7A7E56-88F7-480B-9EC6-3C04043B545D

Holotype: A specimen at the Steinhardt Museum of Natural History, Tel Aviv University, Israel, specimen number TAU-R 16214 collected from Upper Galilee, Israel.

This facility allows access to its holdings.

Paratype: A preserved specimen at the Herpetology Department, Vertebrate Zoology Division, Yale Peabody Museum, New Haven, Connecticut, USA, specimen number YPM HERR 000611 collected from Ein Naaman, Vay of Haifa, Israel, Latitude 32.8333 S., Longitude 35.0833 E.

Diagnosis: Until now, putative *Lenhosertyphlops vermicularis* (Merrem, 1820) has been treated by virtually all publishing herpetologists as a wide-ranging taxon distributed from Greece in the West, east through the Middle East and to drier parts of west Asia, as far east as Afghanistan and south to include southern Israel and potentially the Sinai in Egypt.

Following phylogenetic studies by Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020), the specimens from 1/ Lebanon, 2/ north Israel, 3/ central and south Israel potentially including the Sinai (Egypt), 4/ north-west Jordan and 5/ south-central Syria have been collectively lumped within the putative species *L. syriacus* (Jan, 1883), with a type locality of near Beirut, Lebanon, (previously being a part of a greater Syria).

Based on the molecular results of Kornilios (2017) and Kornilios *et al*. (2012, 2020) indicating a minimum divergence between each of the preceding five populations of 1.2 MYA, separation of each geographically proximal population by relatively rock free

lowland areas subject to occasional inundation and inhabited by significant numbers of the usually allopatric competing species *Trioanotyphlops simoni* (Boettger, 1879), being the type species for the genus *Trioanotyphlops* Hoser, 2022 itself a well-known inhabitant of low-lying and swampy areas, the five morphologically divergent populations are herein treated as full species, with four formally described for the first time in this paper.

These five species also form the entirety of the subgenus *Paralenhosertyphlops subgen. nov*. and are separated from the nominate subgenus of *Lenhosertyphlops* Hoser, 2012 as follows:

As a rule, the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012. *Paralenhosertyphlops subgen. nov*. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and also with relatively well-defined dark edges on the posterior of each dorsal scale.

The five species in the subgenus *Paralenhosertyphlops subgen. nov*. are:

1/ *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. a species from the Upper Galilee and elevated near coastal areas in north Israel, generally north of the Plain of Esdraelon, extending through the hilly region on the Israel and Lebanon border to the Litani River basin in southern Lebanon as defined by Shaban and Hamzé (2018) and only occurring west of the Jordan River basin.

2/ *L. menachembegini sp. nov.* being found west of the Jordan River Valley and south of the Plain of Esdraelon, through the Jerusalem and Jordan Hills including Judea and Samaria to the Negev Desert and potentially elevated parts of the Sinai (Egypt).

3/ *L. syriacus* (Jan, 1883), is from the area generally north and west of the Litani River basin (i.e. the Mount Lebanon Ranges, west of the Bekaa Valley), but wholly within Lebanon.

4/ *L. husseinbintalali sp. nov.* is a taxon from north-west Jordan, found generally east of the Jordan River Valley and west of the arid zone occupying most of the country of Jordan, extending north through the Golan Heights (currently controlled by Israel) into Lebanon, east of the Litani River basin (Bekaa Valley) along the ranges to Baddouaa, Lebanon in the north, making it essentially a taxon of the Anti-Lebanon mountains.

5/ *L. misfitmindss sp. nov.* (not named with any Middle east connotation) is a taxon from south-central Syria in an area of low to medium sized rocky hills and mounts, just east of As-Suwayda in the region of Jabal Ad Duruz, all of which are east of a low-lying zone of red soils (running more-or-less from Daraa in the south, north to Damascus).

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

L. netanyahui sp. nov. has an eye spot in the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is sharply triangular in shape above the eye spot and below (as in wide at base and pointed upper edge), thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a curved pointed edge intruding into the top of the rostral.

L. menachembegini sp. nov. is a distinctively darker brown dorsally than *L. netanyahui sp. nov*. It has an eye spot slightly posterior of the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is crescent shaped above the eye spot and also narrows significantly below the eye. There are thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a bluntly pointed flattish triangular edge intruding into the top of the rostral.

L. syriacus has snout and neck that is medium brown on top. The rest of the dorsum is a different shade of brownish purple on top and purplish on the sides. Distal part of body and tail are blackish on the upper surface.

L. husseinbintalali sp. nov. has whitish scales on the scales of the snout, which are either moderately thickly dark etched or alternatively with dark spotting along the scale edges on otherwise semi-distinct whitish etching lines. Body scales are faintly etched lighter. Eye spot sits posterior in the ocular scale, usually touching or entering the rear suture. The ocular scale itself is more-or-less circular with the upper and lower edges forming smallish points or small triangular points.

Anterior edge of the prefrontal is effectively flat and only touches a small part of the upper edge of the rostral which is more-or-less horseshoe shaped at the top and relatively wide and straight sided below. Prefrontal and frontal are of the same size.

On the flanks the demarcation between darker dorsum and lighter venter is not well defined but is characterised by scattered irregular intrusions of light centred scales in patches along the mid and upper flank. These whitish scale centres occupy virtually the entire visible scale that they appear on, except for the darker outer edges.

L. misfitmindss sp. nov. is similar in most respects to *L. husseinbintalali sp. nov.* as detailed above but separated from that species by having light scales on the anterior part of the upper snout, in turn thickly etched cream, eye spot only slightly posterior of centre in the ocular scale, a rostral that barely touches the pre-frontal and obvious whitish patches of scales scattered along the mid and upper flank.

Numerous photos of the first four of the preceding species can be found in life at: www.inaturalist.org.

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

https://www.inaturalist.org/observations/164496844

and

https://www.inaturalist.org/observations/221678511

Lenhosertyphlops Hoser, 2012 species are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Distribution: *L. netanyahui sp. nov*. is a species from the Upper Galilee and elevated near coastal areas in north Israel, generally north of the Plain of Esdraelon, extending through the hilly region

on the Israel and Lebanon border to the Litani River basin in southern Lebanon as defined by Shaban and Hamzé (2018) and only occurring west of the Jordan River basin.

Etymology: *L. netanyahui sp. nov*. is named in honour of Benjamin Netanyahu.

Born 21 October 1949, he is as of 2025 an Israeli politician who has served as the Prime Minister (PM) of Israel since 2022, having previously held the office from 1996 to 1999 and from 2009 to 2021. Netanyahu is the longest-serving prime minister in Israel's history, having served a total of over 17 years.

On October 7, 2023, Hamas and several other Palestinian terrorist organisations launched coordinated armed incursions from the Gaza Strip into the Gaza envelope of southern Israel.

The attacks, which coincided with the Jewish religious holiday Simchat Torah, initiated the ongoing Gaza war (continuing as of April 2025).

In total, 1,195 people were killed, being 736 Israeli civilians, including 36 children, 79 foreign nationals, and 379 members of the security forces.

364 civilians were killed and many more wounded while attending the Nova music festival.

About 250 Israeli civilians and soldiers were taken as hostages to the Gaza Strip, alive or dead, and including 30 children, with the stated goal to force Israel to exchange them for imprisoned Palestinians.

Dozens of cases of rape and sexual assault occurred.

Benjamin Netanyahu has been blamed for the security lapse that allowed this massacre to occur and as of 2025, roughly 70% of Israeli citizens did not want him to remain as State leader for this or other reasons.

As PM, he also has to maintain a coalition consisting of hard-line Zionists and so-called moderates and because of this dichotomy in a time of extended war and suffering, it is inevitable that most people will not be satisfied with whatever outcome he tries to deliver.

While Netanyahu is not a perfect human being and there is plenty of press coverage to this effect, I do not find it appropriate for him to be "victim blamed" for the terrorist actions of others.

It is not Netanyahu who massacred 1,195 innocent people and took about 250 more as hostages for the purpose of extorting others.

Blaming Netanyahu for this is scandalous and the false narrative against him in this regard needs to be re-written.

In Australia Jews are also "victim blamed" by police and other government officials when brazen and unlawful terrorist attacks are mounted against them.

I have suffered this "victim blaming" myself as a result of a violent attack against me from a gang led by a Muslim Terrorist at Ascot Vale, Melbourne, Australia on 11 March 2023.

Not only was the terrorist and his cohort not charged with multiple assaults, but an attempt was made by corrupt Victorian Police to have me charged with "make false complaint" (it failed), even though there were multiple CCTV and other cameras that filmed the attacks in their entirety and the offenders were well-known to police.

The names of the attackers have been suppressed by court orders on application from the Victorian Police.

Suppression orders are used to hide truth and prevent it being reported in Australia.

They are issued by the police and the cocaine addicted judiciary in Australia on a daily basis. The most minor of breaches or perceived breaches of a suppression order can land one in jail indefinitely.

To his credit, in December 2024 Netanyahu publicly called out the Australian Labor government in 2024 for their ongoing support of antisemitism and terrorist attacks against Jews in this country.

This followed as firebomb attack on the Adass Synagogue in Melbourne.

As with the attack against me, there was lots of CCTV camera footage and the police knew exactly who was responsible as in the three offenders, including by way of tracking the escape vehicle, being a blue VW Golf Car as it drove through Melbourne through the Government's extensive and elaborate network of CCTV Cameras across the city.

This camera network is used effectively to spy on and monitor the population here for the purposes of quelling any dissent and targeting enemies of the State such as corruption whistleblowers.

The Victoria Police explicitly chose not to arrest or charge the Adass Synagogue fire bombers and as of April 2025, no one has been arrested for the attack.

Significantly the Victoria Police even effectively greenlighted further crimes by the same individuals over the following weeks and again no one was arrested or charged.

For more details see:

https://www.abc.net.au/news/2024-12-07/israel-benjamin-netanyahu-links-adass-synagogue-arson-to-un-vote/104697376

and

https://au.news.yahoo.com/fresh-clue-solving-synagogue-firebombing-043951139.html

LENHOSERTYPHLOPS* (*PARALENHOSERTYPHLOPS*) *MENACHEMBEGINI SP. NOV.

LSIDurn:lsid:zoobank.org:act:47FE2C46-4917-4505-9BD7-3EEDA130CA98

Holotype: A specimen at the Steinhardt Museum of Natural History, Tel Aviv University, Israel, specimen number TAU-R 16698 collected from Shomeron Malkishua, Israel, Latitude: 32.261199 N., Longitude: 35.242891 E.

This facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Museum of Vertebrate Zoology, University of California, Berkeley, California, USA, Herp Collection, specimen number MVZ:Herp:47156 collected from Jerusalem, Israel, Latitude 31.77917 N., Longitude 35.22222 E., 2/ A preserved specimen at the Staatliches Museum für Naturkunde, Stuttgart, Germany, specimen number SMNS Herpetologie 2509 collected from Jerusalem, Israel, Latitude 31.77917 N., Longitude 35.22222 E., 3/ Three preserved specimens at the Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA, herps collection specimen numbers 90787, 90790 and 90792 all collected from Kibbutz Netzer Serweni Mienis, Israel, Latitude 31.9228 N., Longitude 34.8212 E.

Diagnosis: Until now (2025), putative *Lenhosertyphlops vermicularis* (Merrem, 1820) has been treated by virtually all publishing herpetologists as a wide-ranging taxon distributed from Greece in the West, east through the Middle East and to drier parts of west Asia, as far east as Afghanistan and south to include southern Israel and potentially the Sinai in Egypt.

Following phylogenetic studies by Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020), the specimens from 1/ Lebanon, 2/ north Israel, 3/ central and south Israel including potentially the Sinai (Egypt), 4/ north-west Jordan and 5/ south-central Syria have been collectively lumped within the putative species *L. syriacus* (Jan, 1883), with a type locality of near Beirut, Lebanon, (previously being a part of a greater Syria).

Based on the molecular results of Kornilios (2017) and Kornilios *et al*. (2012, 2020) indicating a minimum divergence between all the preceding five populations of 1.2 MYA, separation of each geographically proximal population by relatively rock free lowland areas subject to occasional inundation and inhabited by significant numbers of the usually allopatric competing species *Trioanotyphlops simoni* (Boettger, 1879), being the type species for the genus *Trioanotyphlops* Hoser, 2022 itself a well-known inhabitant of low-lying and swampy areas, the five morphologically divergent populations are herein treated as full species, with four formally described for the first time in this paper.

These five species also form the entirety of the subgenus *Paralenhosertyphlops subgen. nov*. and are separated from the nominate subgenus of *Lenhosertyphlops* Hoser, 2012 as follows:

As a rule, the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012. *Paralenhosertyphlops subgen. nov*. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and also with relatively well-defined dark edges on the posterior of each dorsal scale.

The five species in the subgenus *Paralenhosertyphlops subgen. nov*. are:

1/ *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. a species from the Upper Galilee and elevated near coastal areas in north Israel, generally north of the Plain of Esdraelon, extending through the hilly region on the Israel and Lebanon border to the Litani River basin in southern Lebanon as defined by Shaban and Hamzé (2018) and only occurring west of the Jordan River basin.

2/ *L. menachembegini sp. nov.* being found west of the Jordan River Valley and south of the Plain of Esdraelon, through the Jerusalem and Jordan Hills including Judea and Samaria to the Negev Desert and potentially to parts of the Sinai (Egypt) but see earlier comments in the subgenus description for distribution.

3/ *L. syriacus* (Jan, 1883), from the area generally north and west of the Litani River basin (i.e. the Mount Lebanon Ranges, west of the Bekaa Valley), but wholly within Lebanon.

4/ *L. husseinbintalali sp. nov.* is a taxon from north-west Jordan, found generally east of the Jordan River Valley and west of the arid zone occupying most of the country of Jordan, extending north through the Golan Heights (currently controlled by Israel) into Lebanon, east of the Litani River basin (Bekaa Valley) along the ranges to Baddouaa, Lebanon in the north, making it essentially a taxon of the Anti-Lebanon mountains.

5/ *L. misfitmindss sp. nov.* (not named with any Middle east connotation) is a taxon from south-central Syria in an area of low to medium sized rocky hills and mounts, just east of As-Suwayda in the region of Jabal Ad Duruz, all of which are east of a low-lying zone of red soils (running more-or-less from Daraa in the south, north to Damascus).

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

L. netanyahui sp. nov. has an eye spot in the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is sharply triangular in shape above the eye spot and below (as in wide at base and pointed upper edge), thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a curved pointed edge intruding into the top of the rostral.

L. menachembegini sp. nov. is a distinctively darker brown dorsally than *L. netanyahui sp. nov*. It has an eye spot slightly posterior of the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is crescent shaped above the eye spot and also narrows significantly below the eye. There are thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a bluntly pointed flattish triangular edge intruding into the top of the rostral.

L. syriacus has snout and neck that is medium brown on top. The rest of the dorsum is a different shade of brownish purple on top and purplish rather than brownish on the upper parts of the flanks. Distal part of body and tail are blackish on the upper surface.

L. husseinbintalali sp. nov. has whitish scales on the scales of the snout, which are either moderately thickly dark etched or alternatively with dark spotting along the scale edges on otherwise semi-distinct whitish etching lines. Body scales are faintly etched lighter. Eye spot sits posterior in the ocular scale, usually touching or entering the rear suture. The ocular scale itself is more-or-less circular with the upper and lower edges forming smallish points or small triangular points.

Anterior edge of the prefrontal is effectively flat and only touches a small part of the upper edge of the rostral which is more-or-less horseshoe shaped at the very top and relatively wide and straight sided below. Prefrontal and frontal are of the same size.

On the flanks the demarcation between darker dorsum and lighter venter is not well defined but is characterised by scattered irregular intrusions of light centred scales in patches along the mid and upper flank. These whitish scale centres occupy virtually the entire visible scale that they appear on, except for the darker outer edges.

L. misfitmindss sp. nov. is similar in most respects to *L. husseinbintalali sp. nov.* as detailed above but separated from that species by having light scales on the anterior part of the upper snout, in turn thickly etched cream, eye spot only slightly posterior of centre in the ocular scale, a rostral that barely touches the pre-frontal and obvious whitish patches of scales scattered along the mid and upper flank.

Numerous photos of the first four of the preceding species can be found in life at: www.inaturalist.org.

L. menachembegini sp. nov. is depicted in life online at:
https://www.flickr.com/photos/100123353@N08/52064768895/
and
https://www.inaturalist.org/observations/111014515
and
https://www.inaturalist.org/observations/206422819

Lenhosertyphlops Hoser, 2012 species are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Distribution: *L. menachembegini sp. nov.* is a taxon found west of the Jordan River Valley and south of the Plain of Esdraelon, through the Jerusalem and Jordan Hills including Judea and Samaria to the Negev Desert and potentially to parts of the Sinai (Egypt) but see earlier comments in the subgenus description for distribution. It also occurs in the undulating country between the Jordan Valley hills and the coastal strip.

Etymology: *L. menachembegini sp. nov.* is named in honour of Menachem Begin (16 August 1913 to 9 March 1992). Before the creation of the state of Israel, he was the leader of the Zionist militant group Irgun, the Revisionist breakaway from the larger Jewish paramilitary organization Haganah.

Begin was described by the British government as the "*leader of the notorious terrorist organisation*".

After a long political career in the newly formed State of Israel, he became the Sixth Prime Minister of Israel. His term went from 21 June 1977 to 10 October 1983.

Begin's most significant achievement as Prime Minister was the signing of a peace treaty with Egypt in 1979, for which he and Egyptian leader Anwar Sadat shared the Nobel Peace Prize.

That agreement remains in force as of 2025 and countless human lives have been saved as a result.

LENHOSERTYPHLOPS* (*PARALENHOSERTYPHLOPS*) *HUSSEINBINTALALI SP. NOV.

LSIDurn:lsid:zoobank.org:act:A1306774-40BF-4F6B-A014-A9C439D6289B

Holotype: A specimen at the Natural History Museum of Crete, Greece, specimen number 80.3.21.6 collected from Ajloun, Jordan, Latitude 32.3326 N., Longitude 35.7517 E.

This facility allows access to its holdings.

Paratype: A specimen at the Natural History Museum of Crete, Greece, specimen number 80.3.21.7 collected from Zai Park, Jordan, Latitude 32.6060 N., Longitude 35.4300 E.

Diagnosis: Until now (2025), putative *Lenhosertyphlops vermicularis* (Merrem, 1820) has been treated by virtually all publishing herpetologists as a wide-ranging taxon distributed from Greece in the West, east through the Middle East and to drier parts of west Asia, as far east as Afghanistan and south to include southern Israel and potentially the Sinai in Egypt.

Following phylogenetic studies by Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020), the specimens from 1/ Lebanon, 2/ north Israel, 3/ central and south Israel including potentially the Sinai (Egypt), 4/ north-west Jordan and 5/ south-central Syria have been collectively lumped within the putative species *L. syriacus* (Jan, 1883), with a type locality of near Beirut, Lebanon, (previously being a part of a greater Syria).

Based on the molecular results of Kornilios (2017) and Kornilios *et al*. (2012, 2020) indicating a minimum divergence between all the preceding five populations of 1.2 MYA, separation of each geographically proximal population by relatively rock free lowland areas subject to occasional inundation and inhabited by significant numbers of the usually allopatric competing species *Trioanotyphlops simoni* (Boettger, 1879), being the type species for the genus *Trioanotyphlops* Hoser, 2022 itself a well-known inhabitant of low-lying and swampy areas, the five morphologically divergent populations are herein treated as full species, with four formally described for the first time in this paper.

These five species also form the entirety of the subgenus *Paralenhosertyphlops subgen. nov*. and are separated from the nominate subgenus of *Lenhosertyphlops* Hoser, 2012 as follows:

As a rule, the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012. *Paralenhosertyphlops subgen. nov*. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and also with relatively well-defined dark edges on the posterior of each dorsal scale.

The five species in the subgenus *Paralenhosertyphlops subgen. nov*. are:

1/ *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. a species from the Upper Galilee and elevated near coastal areas in north Israel, generally north of the Plain of Esdraelon, extending through the hilly region on the Israel and Lebanon border to the Litani River basin in southern Lebanon as defined by Shaban and Hamzé (2018) and only occurring west of the Jordan River basin.

2/ *L. menachembegini sp. nov.* being found west of the Jordan River Valley and south of the Plain of Esdraelon, through the Jerusalem and Jordan Hills including Judea and Samaria to the Negev Desert and potentially to parts of the Sinai (Egypt) but see earlier comments in the subgenus description for distribution.

3/ *L. syriacus* (Jan, 1883), from the area generally north and west of the Litani River basin (i.e. the Mount Lebanon Ranges, west of the Bekaa Valley), but wholly within Lebanon.

4/ *L. husseinbintalali sp. nov.* is a taxon from north-west Jordan, found generally east of the Jordan River Valley and west of the arid zone occupying most of the country of Jordan, extending north through the Golan Heights (currently controlled by Israel) into Lebanon, east of the Litani River basin (Bekaa Valley) along the ranges to Baddouaa, Lebanon in the north, making it essentially a taxon of the Anti-Lebanon mountains.

5/ *L. misfitmindss sp. nov.* (not named with any Middle east connotation) is a taxon from south-central Syria in an area of low to medium sized rocky hills and mounts, just east of As-Suwayda in the region of Jabal Ad Duruz, all of which are east of a low-lying zone of red soils (running more-or-less from Daraa in the south, north to Damascus).

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

L. netanyahui sp. nov. has an eye spot in the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is sharply triangular in shape above the eye spot and below (as in wide at base and pointed upper edge), thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a curved pointed edge intruding into the top of the rostral.

L. menachembegini sp. nov. is a distinctively darker brown dorsally than *L. netanyahui sp. nov*. It has an eye spot slightly posterior of the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is crescent shaped above the eye spot and also narrows significantly below the eye. There are thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a bluntly pointed flattish triangular edge intruding into the top of the rostral.

L. syriacus has snout and neck that is medium brown on top. The rest of the dorsum is a different shade of brownish purple on top and purplish rather than brownish on the upper parts of the flanks. Distal part of body and tail are blackish on the upper surface.

L. husseinbintalali sp. nov. has whitish scales on the scales of the snout, which are either moderately thickly dark etched or alternatively with dark spotting along the scale edges on otherwise semi-distinct whitish etching lines. Body scales are faintly etched lighter. Eye spot sits posterior in the ocular scale, usually touching or entering the rear suture. The ocular scale itself is more-or-less circular with the upper and lower edges forming smallish points or small triangular points.

Anterior edge of the prefrontal is effectively flat and only touches a small part of the upper edge of the rostral which is more-or-less horseshoe shaped at the very top and relatively wide and straight sided below. Prefrontal and frontal are of the same size.

On the flanks the demarcation between darker dorsum and lighter venter is not well defined but is characterised by scattered irregular intrusions of light centred scales in patches along the mid and upper flank. These whitish scale centres occupy virtually the entire visible scale that they appear on, except for the darker outer edges.

L. misfitmindss sp. nov. is similar in most respects to *L. husseinbintalali sp. nov.* as detailed above but separated from that species by having light scales on the anterior part of the

upper snout, in turn thickly etched cream, eye spot only slightly posterior of centre in the ocular scale, a rostral that barely touches the pre-frontal and obvious whitish patches of scales scattered along the mid and upper flank.

Numerous photos of the first four of the preceding species can be found in life at: www.inaturalist.org.

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

https://www.inaturalist.org/observations/21636410

and

https://www.inaturalist.org/observations/5243227

Lenhosertyphlops Hoser, 2012 species are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Distribution: *L. husseinbintalali sp. nov.* is a taxon from north-west Jordan, found generally east of the Jordan River Valley and west of the arid zone occupying most of the country of Jordan, extending north through the Golan Heights (currently controlled by Israel) into Lebanon, east of the Litani River basin (Bekaa Valley) along the ranges to Baddouaa, Lebanon in the north, making it essentially a taxon of the Anti-Lebanon mountains.

Etymology: *L. husseinbintalali sp. nov.* is named in honour of Hussein bin Talal (14 November 1935 to 7 February 1999), better known as King Hussein of Jordan.

As a member of the Hashemite dynasty, the royal family of Jordan since 1921, Hussein was allegedly a 40th-generation direct descendant of the Islamic prophet Muhammad.

He was enthroned at the age of 17 on 2 May 1953. Hussein was married four separate times and fathered eleven children.

He declared Marshall Law in 1956 and was regarded as a dictator from that date on.

He quelled numerous uprisings and there were numerous attempts on his life before he ultimately died of cancer at age 63.

One of his most notable achievements was when after losing three wars against Israel in 1994 he became the second Arab head of state to sign a peace treaty with Israel.

LENHOSERTYPHLOPS* (*PARALENHOSERTYPHLOPS*) *MISFITMINDSS SP. NOV.

LSIDurn:lsid:zoobank.org:act:C4292D25-7B80-4348-AA8C-88A39E38F92C

Holotype: A specimen at the National Museum, Prague, Czech Republic, specimen number NMP6V 70460-1 collected from 4 km east of Sweida (AKA As Suwayda), Syria, Latitude 32.7129 N., Longitude 36.5663 E.

This facility allows access to its holdings.

Paratypes: Two specimens at the National Museum, Prague, Czech Republic, specimen numbers NMP6V 70460-2 and NMP6V 70460-3 both collected from 4 km east of Sweida (AKA As Suwayda), Syria, Latitude 32.7129 N., Longitude 36.5663 E.

Diagnosis: Until now (2025), putative *Lenhosertyphlops vermicularis* (Merrem, 1820) has been treated by virtually all publishing herpetologists as a wide-ranging taxon distributed from Greece in the West, east through the Middle East and to drier parts of west Asia, as far east as Afghanistan and south to include southern Israel and potentially the Sinai in Egypt.

Following phylogenetic studies by Kornilios (2017) and Kornilios *et al*. (2011, 2012, 2020), the specimens from 1/ Lebanon, 2/ north Israel, 3/ central and south Israel including potentially the Sinai (Egypt), 4/ north-west Jordan and 5/ south-central Syria have been collectively lumped within the putative species *L. syriacus* (Jan, 1883), with a type locality of near Beirut, Lebanon, (previously being a part of a greater Syria).

Based on the molecular results of Kornilios (2017) and Kornilios *et al*. (2012, 2020) indicating a minimum divergence between all the preceding five populations of 1.2 MYA, separation of each geographically proximal population by relatively rock free lowland areas subject to occasional inundation and inhabited by significant numbers of the usually allopatric competing species *Trioanotyphlops simoni* (Boettger, 1879), being the type species for the genus *Trioanotyphlops* Hoser, 2022 itself a well-known inhabitant of low-lying and swampy areas, the five morphologically divergent populations are herein treated as full species, with four formally described for the first time in this paper.

These five species also form the entirety of the subgenus *Paralenhosertyphlops subgen. nov*. and are separated from the nominate subgenus of *Lenhosertyphlops* Hoser, 2012 as follows:

As a rule, the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012. *Paralenhosertyphlops subgen. nov*. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and also with relatively well-defined dark edges on the posterior of each dorsal scale.

The five species in the subgenus *Paralenhosertyphlops subgen. nov*. are:

1/ *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. a species from the Upper Galilee and elevated near coastal areas in north Israel, generally north of the Plain of Esdraelon, extending through the hilly region on the Israel and Lebanon border to the Litani River basin in southern Lebanon as defined by Shaban and Hamzé (2018) and only occurring west of the Jordan River basin.

2/ *L. menachembegini sp. nov.* being found west of the Jordan River Valley and south of the Plain of Esdraelon, through the Jerusalem and Jordan Hills including Judea and Samaria to the Negev Desert and potentially to parts of the Sinai (Egypt) but see earlier comments in the subgenus description for distribution.

3/ *L. syriacus* (Jan, 1883), from the area generally north and west of the Litani River basin (i.e. the Mount Lebanon Ranges, west of the Bekaa Valley), but wholly within Lebanon.

4/ *L. husseinbintalali sp. nov.* is a taxon from north-west Jordan, found generally east of the Jordan River Valley and west of the arid zone occupying most of the country of Jordan, extending

north through the Golan Heights (currently controlled by Israel) into Lebanon, east of the Litani River basin (Bekaa Valley) along the ranges to Baddouaa, Lebanon in the north, making it essentially a taxon of the Anti-Lebanon mountains.

5/ *L. misfitmindss sp. nov.* (not named with any Middle east connotation) is a taxon from south-central Syria in an area of low to medium sized rocky hills and mounts, just east of As-Suwayda in the region of Jabal Ad Duruz, all of which are east of a low-lying zone of red soils (running more-or-less from Daraa in the south, north to Damascus).

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

L. netanyahui sp. nov. has an eye spot in the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is sharply triangular in shape above the eye spot and below (as in wide at base and pointed upper edge), thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a curved pointed edge intruding into the top of the rostral.

L. menachembegini sp. nov. is a distinctively darker brown dorsally than *L. netanyahui sp. nov*. It has an eye spot slightly posterior of the centre of the ocular scale (when looked at from front to back) and slightly higher than centre; the ocular scale itself is crescent shaped above the eye spot and also narrows significantly below the eye. There are thick lighter lines etching the upper scales of the snout, tail is similar colour on top to the rest of the dorsal colour. The prefrontal is a fraction smaller than the frontal. The anterior edge of the prefrontal forms a bluntly pointed flattish triangular edge intruding into the top of the rostral.

L. syriacus has snout and neck that is medium brown on top. The rest of the dorsum is a different shade of brownish purple on top and purplish rather than brownish on the upper parts of the flanks. Distal part of body and tail are blackish on the upper surface.

L. husseinbintalali sp. nov. has whitish scales on the scales of the snout, which are either moderately thickly dark etched or alternatively with dark spotting along the scale edges on otherwise semi-distinct whitish etching lines. Body scales are faintly etched lighter. Eye spot sits posterior in the ocular scale, usually touching or entering the rear suture. The ocular scale itself is more-or-less circular with the upper and lower edges forming smallish points or small triangular points.

Anterior edge of the prefrontal is effectively flat and only touches a small part of the upper edge of the rostral which is more-or-less horseshoe shaped at the very top and relatively wide and straight sided below. Prefrontal and frontal are of the same size.

On the flanks the demarcation between darker dorsum and lighter venter is not well defined but is characterised by scattered irregular intrusions of light centred scales in patches along the mid and upper flank. These whitish scale centres occupy virtually the entire visible scale that they appear on, except for the darker outer edges.

L. misfitmindss sp. nov. is similar in most respects to *L. husseinbintalali sp. nov.* as detailed above but separated from that species by having light scales on the anterior part of the upper snout, in turn thickly etched cream, eye spot only slightly posterior of centre in the ocular scale, a rostral that barely touches the pre-frontal and obvious whitish patches of scales scattered along the mid and upper flank.

Numerous photos of the first four of the preceding species can be found in life at: www.inaturalist.org.

Lenhosertyphlops Hoser, 2012 species are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Distribution: *L. misfitmindss sp. nov.* is a taxon from south-central Syria in an area of low to medium sized rocky hills and mounts, just east of As-Suwayda in the region of Jabal Ad Duruz, all of which are east of a low-lying zone of red soils (running more-or-less from Daraa in the south, north to Damascus).

Etymology: *L. misfitmindss sp. nov.* is named in honour of a group of Melbourne, Victoria, Australia comics known as “Misfit Mindss”, who have a huge cult following in Australia, including in the local Islamic and Jewish communities for services to the Australian entertainment industry.

Details at:

https://www.youtube.com/@misfitmindss

and

https://x.com/misfitmindss

and

https://www.instagram.com/misfitmindss

The name should not be amended to add the suffix “orum” as usually is the case when names are Latinized. The exact spelling of this species name should be retained as is.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *LENHOSERI SP. NOV.

LSIDurn:lsid:zoobank.org:act:66AE3775-FA09-43A0-87C0-DD7EBBFE0499

Holotype: A preserved specimen at the Natural History Museum of Crete, Greece, specimen number NHMC 80.3.21.20 collected from Greko Cape, Cyprus, Latitude 34.9609 N., Longitude 34.0836 E.

This facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the Natural History Museum of Crete, Greece, being specimen number NHMC 80.3.21.12 collected from Kyvernitis Beach, Cyprus, Latitude 34.7304 N., Longitude 32.5208 E., and specimen number NHMC 80.3.21.21 collected from Lefkara, Cyprus, Latitude 34.8674 N., Longitude 33.3053 E.

2/ A preserved specimen at the National Museum, Prague, Czech Republic, specimen number NMP6V 72541 collected from Gecitköy, Cyprus, Latitude 35.3375 N., Longitude 33.0685 E.

3/ A preserved specimen at the Department of Zoology, Comenius University in Bratislava, Slovakia, specimen number CUB 8986 collected from Paphos, Cyprus, Latitude 34.7754 N., Longitude 32.4218 E.

Diagnosis: Until now, *Lenhosertyphlops* (*Lenhosertyphlops*)

lenhoseri sp. nov. restricted to the island of Cyprus in the Mediterranean has been treated as an insular population of *Lenhosertyphlops* (*Lenhosertyphlops*) *vermicularis* (Merrem, 1820).

The molecular phylogenies of Kornilios (2017) and Kornilios *et al.* (2012, 2020) confirm that it is a different species that diverged from nearest other relatives in the *L. vermicularis* species complex 3.9-6.3 MYA (see Fig. 1 in Kornilios 2017).

The detailed morphological analysis of Akman and Gocmen (2019) confirmed readily identifiable means to separate the Cyprus taxon from all other species in the genus *Lenhosertyphlops* Hoser, 2012, which has a type species of *Typhlops vermicularis* Merrem, 1820.

L. lenhoseri sp. nov. is readily separated from all other species within *Lenhosertyphlops* Hoser, 2012 of the nominate subgenus by having 10-13 mid-tail scales (MTS), these being the longitudinal rows around the mid-tail, versus 17-22 in all other species and 18-22 dorsocaudals (DC), this being the number of vertebral scales along the tail, versus 10-15 in all other species.

Akman and Gocmen (2019) detail other trend differences between the relevant species.

The five species of the subgenus *Paralenhosertyphlops subgen. nov*. are separated from those in the nominate subgenus of *Lenhosertyphlops* Hoser, 2012 (including *L. lenhoseri sp. nov.*) as follows:

As a rule, the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012. *Paralenhosertyphlops subgen. nov*. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and also with relatively well-defined dark edges on the posterior of each dorsal scale.

Lenhosertyphlops Hoser, 2012 species are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

L. lenhoseri sp. nov. is depicted in life in Akman and Gocmen (2019) on page 14 at Fig. 7, in image "f" and online at: https://www.flickr.com/photos/99613800@N02/53673626939 the photo taken of a specimen from Paphos Archeological Site, Paphos, Cyprus by Chris Kirby-Lambert (along with four other images of the same specimen posted on the same domain) as well as numerous images on www.inaturalist.org including at: https://www.inaturalist.org/observations/277047330

and

https://www.inaturalist.org/observations/278139720

Relevant comment: Akman and Gocmen (2019) summarized their work stating:

"*There were significant differences between Xerotyphlops vermicularis populations from Anatolia and Cyprus, regarding their pholidotic characters, metric measurements, and geometric morphometrics. Therefore, it is suggested that the Cyprian populations could properly be named as a different taxon*."

This request by these authors has been satisfied herein.

I note that the use of the word "*Xerotyphlops*" was contrary to the International Copyright Law, including for example the Australian Copyright Act 1968 (Section 195, Moral Rights), and the *International Code of Zoological Nomenclature* (Ride *et al*. 1999).

The *International Code of Zoological Nomenclature* states the following:

"Article 23. Principle of Priority

23.1. Statement of the Principle of Priority

The valid name of a taxon is the oldest available name applied to it"

Xerotyphlops Hedges *et al.* 2014 is an illegally coined objective junior synonym of *Lenhosertyphlops* Hoser, 2012.

They have the same type species!

Xerotyphlops is therefore not available for zoological nomenclature and should never be used as correct. It can only be placed on a synonyms list as an unavailable name.

The International Commission of Zoological Nomenclature (ICZN) issued a ruling in favour of *Lenhosertyphlops* Hoser, 2012 against *Xerotyphlops* Hedges *et al.* 2014 on 30 April 2021 (ICZN 2021).

Distribution: *Lenhosertyphlops lenhoseri sp. nov.* is confined to the island of Cyprus.

Etymology: As for the genus *Lenhosertyphlops* Hoser, 2012 (see Hoser 2012).

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *NOTAXEROTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:E09726FA-A5ED-4732-BA3F-16A98B3F06F2

Holotype: A specimen at the Zoology Department, Ege University, Türkiye specimen number ZDEU D3/2009-1 collected from Tersane Cove, Kekova, Kaş, Antalya, Türkiye, Latitude 36.1833 N., Longitude 29.8000 E.

This facility allows access to its holdings.

Paratype: A specimen at the Zoology Department, Ege University, Türkiye specimen number ZDEU D2/2009-1 collected from Kale, Kaş, Antalya, Türkiye, Latitude 36.267502 N., Longitude 29.415030 E.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al.* (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species in the nominate subgenus are as follows:

Lenhosertyphlops vermicularis (Merrem, 1820) is a wide-ranging taxon, occurring at the easternmost and westernmost extremities of the range for the genus, both near the Adriatic Sea and east to west Asia, in the vicinity of Afghanistan. It occurs in locations across this distribution, but usually outside where each of the following nine species occur. Those are all in effect confined to specific uplifted biogeographical regions of sedimentary rocks, limestones and the like generally along the southern margins of where the African and Eurasian continental plates have collided.

The other nine taxa are separated from one another by areas of usually flattish lowland, generally not preferred by this genus and/or areas inhabited by *L. vermicularis*.

The other nine taxa are as follows:

L. luristanicus (Torki, 2017) is a taxon from north-west Iran, extending into nearby northeast Türkiye, most of Azerbaijan, and southern Georgia.

L. lenhoseri sp. nov. is confined to the island of Cyprus.

L. notaxerotyphlops sp. nov. occurs generally near the south coast in West Türkiye in association with the West Bati Toroslar and for the subspecies *L. notaxerotyphlops ok subsp. nov*. in the region of Pamphylia to the east.

L. isalenhosertyphlops sp. nov. occurs in the Cilicia region of Türkiye in association with the immediately adjoining Toros Daglari.

L. isntxerotyphlops sp. nov. occurs in association with the Amanos Daglari in southern central Türkiye.

L. yeslenhosertyphlops sp. nov. occurs in association with the Gaziantep Platosu and associated nearby elevated areas.

L. anotherlenhosertyphlops sp. nov. is apparently confined to the vicinity of the An-Nusayriyan Mountains near the west coast of Syria.

L. agoodlenhosertyphlops sp. nov. is apparently confined to the Mardin Platosu, south of the Tigris River.

L. correctnomenclature sp. nov. occurs in the hilly country immediately north of the Tigris Basin in the Siirt District of Siirt Province in Türkiye.

The other nine species are readily separated from one another by the following combinations of characteristics:

L. lenhoseri sp. nov. is readily separated from all other species within *Lenhosertyphlops* Hoser, 2012 of the nominate subgenus by having 10-13 mid-tail scales (MTS), these being the longitudinal rows around the mid-tail, versus 17-22 in all other species and 18-22 dorsocaudals (DC), this being the number of vertebral scales along the tail, versus 10-15 in all other species.

L. lenhoseri sp. nov. is depicted in life in Akman and Gocmen (2019) on page 14 at Fig. 7, in image "f" and online at:
https://www.flickr.com/photos/99613800@N02/53673626939
and
https://www.inaturalist.org/observations/277047330
and
https://www.inaturalist.org/observations/278139720

L. vermicularis is distinguished by the combination of pinkish-brown dorsum, eye spot slightly over halfway up the ocular scale and posterior in it, touching the rear suture line. Snout is lighter than back of head and rostral scale has thick creamish suture line etchings that get thicker (or wider) as one moves up the head away from the snout. The prefrontal/frontal arrangement is of two scales of identical size and then a much wider one behind that.

The anterior one enters the rostral with a flattish, blunt edged triangular edge. Belly is pinkish white and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined. That is the line (without edge) runs across the scales and is not jagged edged by way of one scale row darker and another not. Tail region sometimes, but not always has a slight darker or brownish tinge on the upper surface, but otherwise (excluding the upper snout area), the snake much the same colour from head to tail on top and similarly for the lighter ventral surface.

The base of the nasal scale is narrower than the preocular, but it is wider at the top at the triangular-shaped edge.

L. vermicularis is depicted in life online at:
https://www.flickr.com/photos/aleksandar_simovic/26353039423/
and
https://www.flickr.com/photos/110394983@N04/33696754524/
and
https://www.flickr.com/photos/mikepingleton/52465613977/
and
https://www.flickr.com/photos/95482238@N02/44956955931/

L. notaxerotyphlops sp. nov. is distinguished by the combination of pinkish dorsum, eye spot is slightly higher than centre in the ocular scale and slightly anterior of centre. Top of snout is yellowish in colour; suture line etchings of rostral scale are light brownish and thicker towards the snout rather than further from it. The prefrontal/frontal arrangement is of two scales of identical size and then a barely wider one behind that.

The anterior one enters the rostral with a flattish edge.

Belly is whitish and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined.

Tail region sometimes, but not always has a slight darker or brownish tinge on the upper surface, but otherwise (excluding the upper snout area), the snake much the same colour from head to tail on top and similarly for the lighter ventral surface.

Nasal is triangular with concave sides and the preocular has convex sides, but the nasal scale is larger and higher overall.

L. notaxerotyphlops sp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/62110327
and
https://www.inaturalist.org/observations/116594044
and
https://www.inaturalist.org/observations/272507522

L. notaxerotyphlops ok subsp. nov. is similar in most respects to nominate *L. notaxerotyphlops sp. nov*. as described above but is separated from that taxon by having a top of snout that is brown in colour, suture line etchings of rostral scale are thick, cream in colour and even along the suture lines (same top and bottom). On the dorsum, the last fifth of the snake's length is a different shade of colour with an obvious brown tinge.

L. notaxerotyphlops ok subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/156549602
and
https://www.inaturalist.org/observations/206226870

L. isalenhosertyphlops sp. nov. is separated from the preceding species by having a dorsum that is a deeper purplish colour and this extends down the flanks to well onto the ventral surface, which in turn is barely lighter than the dorsum.

The scales of the upper surface of the anterior of the snout are barely lighter than those of the body itself, but with a slight yellowish tinge. The etchings of these scales are barely noticeable and in the form of slightly darker thin and indistinct etching.

The preocular is much wider than the nasal, which is relatively

thin and more-or-less rectangular in shape.

Eye spot is above centre in the ocular scale and a fraction posterior to centre. There is also a slight darkening of the line of the upper edge separating darker dorsum from lighter whitish-pink venter.

Prefrontal does not enter the rostral at all, which has a uniform curved edge at the top.

Prefrontal and two scales immediately behind are of identical size and shape.

L. isalenhosertyphlops sp. nov. is depicted in life in Akman and Gocmen (2019), on page 14 at Fig 7, image "a" and online at:

https://www.inaturalist.org/observations/112023319

and

https://www.inaturalist.org/observations/112023319

L. isntxerotyphlops sp. nov. is a pinkish brown on top, with an obviously chocolate brown terminal end of the tail. The slightly darker posterior edges of scales seen in other species in the complex are not seen in this species giving it a particularly uniform appearance. Scales on the anterior of the snout are light brown, with scattered dark brown spot-type markings along the suture lines.

Nasal and preocular are a pair of identically shaped thin topped triangles. Eye spot is slightly below centre and slightly posterior in the ocular scale.

The line between darker top and whitish venter on the flank is poorly defined.

The scales on the back of the head (only) do have obvious dark etching at the posterior edges.

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

https://www.inaturalist.org/observations/146485649

L. yeslenhosertyphlops sp. nov. is pinkish on top all over, including the tip of the snout, which is still pinkish in colour but a fraction lighter in colour. Sutures of anterior head scales are thin and pink. End of tail is medium chocolate brown. Eye spot is roughly at centre of ocular scale in terms of top and bottom and slightly posterior of centre.

Change from darker top to lighter venter is gradual and venter is pinkish white in colour.

L. yeslenhosertyphlops sp. nov. is depicted in life in Akman and Gocmen (2019), on page 14 at Fig 7 image "b".

L. anotherlenhosertyphlops sp. nov. is the lightest coloured species in the nominate subgenus *Lenhosertyphlops* being pinkish beige in colour on top and whitish below. The scales of the upper surfaces of the snout are whitish with an even moderately thick darker etching. Rostral is particularly wide. Body on top is similar colour along the entire length, including the tail. Eye spot is effectively centred in the ocular scale, save for being a fraction anterior of the centre.

L. agoodlenhosertyphlops sp. nov. is separated from the other species by the combination of a pinkish-purple dorsum, eye spot slightly over halfway up the ocular scale and posterior in it but not touching the rear suture line. Snout is lighter than back of head, being beige and the rostral scale has thick creamish suture line etchings that are uneven as one moves up the head away from the snout (they widen upwards). The prefrontal/frontal arrangement is of two scales of identical size and then a moderately wider one behind that.

The anterior one enters the rostral with a flattish, blunt curved rather than triangular edge, and then only just. Belly is pinkish white and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined. That is the line (without edge) runs across the scales and is not jagged edged by way of one scale row darker and another not. Tail region is the same colour as the rest of the upper body or slightly darker.

The base of the nasal scale is narrower than the preocular, but it is wider at the top at the bluntly triangular-shaped edge, but notably it curves up in a curved back c-shaped manner.

L. correctnomenclature sp. nov. is separated from the other species by the combination of a dark pinkish-brown dorsum, eye spot slightly over halfway up the ocular scale and posterior in it but not touching the rear suture line. Snout is lighter than back of head and rostral scale has thick creamish suture line etchings that are even as one moves up the head away from the snout. The prefrontal/frontal arrangement is of two scales of identical size and then a much wider one behind that.

The anterior one enters the rostral with a flattish, blunt edged triangular edge. Belly is pinkish white and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined. That is the line (without edge) runs across the scales and is not jagged edged by way of one scale row darker and another not. Tail region is the same colour as the rest of the upper body.

The base of the nasal scale is narrower than the preocular, but it is wider at the top at the sharply triangular-shaped edge, but notably it curves up in a curved back c-shaped manner.

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

https://www.inaturalist.org/observations/117441710

L. luristanicus (Torki, 2017), type locality, Badavar region, Nourabad, Lorestan Province, western Zagros Mountains, western Iran, was defined by (Torki, 2017) as different to *L. vermicularis* based on hemipenal morphology. The description of Torki (2017) was in error, although that does not mean the two taxa do not have hemipenal differences. It is just that he did not identify them.

While the description of Torki (2017) failed to provide a proper diagnosis for his putative species, under the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999), his name is an "available" one.

As the holotype specimen he named is of one of the identified species clades of Kornilios (2017) and Kornilios *et al*. (2012, 2020) in their phylogenies, *L. luristanicus* (Torki, 2017) is herein treated as a valid species.

L. luristanicus is separated from all the preceding species in the nominate subgenus of *Lenhosertyphlops* by the following combination of characters: Overall colour on top is a relatively dark purplish brown on top. The very tip of the snout is yellowish or beige, but otherwise the head and neck on top are the same colour as the body. Etching of anterior scales on the snout is whitish and uneven, but not necessarily thicker at either top or bottom and absent in many specimens. The scales of the dorsum are darker in the centre (most of them) and light etched posteriorly. The tip of the tail on top is slightly darker than the rest of the body colour.

Eye spot sits slightly above centre and slightly posterior in the ocular shield. Prefrontal is much smaller than the frontal, which is nearly double the size.

The prefrontal has a curved outwards rather than triangular edge going into the rostral. Rostral is moderately wide. Nasal is big, wide and squarish rectangular in shape, being higher than wide, but not as much as in the other species in the subgenus. The pre-ocular is much smaller and sharply triangular at the top, but with a square edge at the very top (at the apex, or where the apex would otherwise be).

L. luristanicus (Torki, 2017) is depicted in life in Akman and Gocmen (2019), on page 14 at Fig 7 image "c", and dead in Torki (2017) and in life online at:

https://www.inaturalist.org/observations/260166607

and

https://www.inaturalist.org/observations/212226102

and

https://www.inaturalist.org/observations/260598467

and

https://www.inaturalist.org/observations/216334183

It is important that a species carries a correct ICZN name, not so much who actually named it.

Deliberately overwriting a name because the original description

was defective is both dishonest and illegal under both Copyright laws (e.g. The Australian Copyright Act at Section 195 (Moral Rights) and the *International Code of Zoological Nomenclature*) and I will not be a part any such unlawful and ethically repugnant action.

Likewise in terms of the illegal act of failing to cite or recognise an earlier work when illegally renaming a taxon.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Likewise, the genus name *Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior (subjective) synonym for *Maxhoserus* Hoser, 2012 and therefore should not be used as a correct name either due to the fact that the type species for both putative genera are closely related (about 6 MYA divergent).

Blair S. Hedges is a grant scamming fraudster, and a prominent member of the Wolfgang Wuster / Adam Britton gang of hard-core criminals (see Hoser 2024 for details).

Other blindsnake genera have been illegally renamed in acts of taxonomic vandalism by the same cohort of criminals. See Hoser (2024b) for a full listing of acts of taxonomic vandalism to that date, which includes over 100 illegally coined junior synonym names that the gang are posting globally are correct.

They are dishonest and know this is not the case.

Distribution: *L. notaxerotyphlops sp. nov*. occurs generally near the south coast in West Türkiye in association with the West Bati Toroslar and for the subspecies *L. notaxerotyphlops ok subsp. nov*. in the region of Pamphylia to the east.

Etymology: The new species name for this taxon *L. notaxerotyphlops sp. nov*. is a direct take of the English words "*Not a Xerotyphlops*" which accurately describes the state of this species.

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *NOTAXEROTYPHLOPS OK SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:4BBD450D-89FA-493B-96A5-7D5E74052025

Holotype: A specimen at the Zoology Department, Ege University, Türkiye specimen number ZDEU 13A collected from Between Gündoğmuş and Akseki, Antalya, Türkiye, Latitude 37.0460 N., Longitude 31.7904 E.

This facility allows access to its holdings.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species are in the nominate subgenus including *Lenhosertyphlops notaxerotyphlops sp. nov.* and the subspecies *L. notaxerotyphlops ok sp. nov.*

L. notaxerotyphlops sp. nov. occurs generally near the south coast in West Türkiye in association with the West Bati Toroslar and for the subspecies *L. notaxerotyphlops ok subsp. nov*. in the region of Pamphylia to the east.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. notaxerotyphlops sp. nov. is separated from all other species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

A strongly pinkish dorsum, eye spot is slightly higher than centre in the ocular scale and slightly anterior of centre. Top of snout is yellowish in colour; suture line etchings of rostral scale are light brownish and thicker towards the snout rather than further from it. The prefrontal/frontal arrangement is of two scales of identical size and then a barely wider one behind that.

The anterior one enters the rostral with a flattish edge.

Belly is whitish and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined.

Tail region sometimes, but not always has a slight darker or brownish tinge on the upper surface, but otherwise (excluding the upper snout area), the snake much the same colour from head to tail on top and similarly for the lighter ventral surface.

Nasal is triangular with concave sides and the preocular has convex sides, but the nasal scale is larger and higher overall.

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

https://www.inaturalist.org/observations/62110327

and

https://www.inaturalist.org/observations/116594044

and

https://www.inaturalist.org/observations/272507522

L. notaxerotyphlops ok subsp. nov. is similar in most respects to nominate *L. notaxerotyphlops sp. nov*. as described above but is separated from that taxon and all others in the genus by having a top of snout that is brown in colour, suture line etchings of rostral scale are thick, cream in colour and even along the suture lines (same top and bottom). On the dorsum, the last fifth of the snake's length is a different shade of colour with an obvious brown tinge. Otherwise this species description is as for the

nominate subspecies *L. notaxerotyphlops sp. nov*.

L. notaxerotyphlops ok subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/156549602
and
https://www.inaturalist.org/observations/206226870

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*..

Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

Distribution: *L. notaxerotyphlops sp. nov*. occurs generally near the south coast in West Türkiye in association with the West Bati Toroslar and for the subspecies *L. notaxerotyphlops ok subsp. nov*. in the region of Pamphylia to the east.

Etymology: The new subspecies name for this taxon *L. notaxerotyphlops ok subsp. nov*. is a direct take of the English words "*Not a Xerotyphlops ok*" which accurately describes the state of this species. The word "ok", pronounced "okay" confirms this obvious fact.

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition and the subspecies name is an interjection.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *ISALENHOSERTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:290B2F9A-79E3-4A92-AD22-6DA851531B46

Holotype: A specimen at the California Academy of Sciences, San Francisco, California, USA specimen number CAS HERP 105276 collected from Misis, 26 km East of Adana, Türkiye, Latitude 36.965208 N., Longitude 35.620367 at 33 metres elevation.

This facility allows access to its holdings.

Paratypes: Four preserved specimens at the Aydın Adnan Menderes University Museum Collection, Türkiye, specimen numbers AAMU TV28A, AAMU TV28B, AAMU TV28C and AAMU TV28D all collected from Pozantı, Türkiye, Latitude 37.4256 N., Longitude 34.8736 E.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species including *L. isalenhosertyphlops sp. nov*. are in the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

L. isalenhosertyphlops sp. nov. occurs in the Cilicia region of Türkiye in association with the immediately adjoining Toros Daglari.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. isalenhosertyphlops sp. nov. is separated from all other species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

The dorsum is a deeper purplish colour than most others in the genus and in this taxon this extends down the flanks to well onto the ventral surface (versus lightening in the other similarly colouredspecies), which in turn is barely lighter than the dorsum.

The scales of the upper surface of the anterior of the snout are barely lighter than those of the body itself, but with a slight yellowish tinge. The etchings of these scales are barely noticeable and in the form of slightly darker thin and indistinct etching.

The preocular is much wider than the nasal, which is relatively thin and more-or-less rectangular in shape.

Eye spot is above centre in the ocular scale and a fraction posterior to centre. There is also a slight darkening of the line of the upper edge separating darker dorsum from lighter whitish-pink venter.

Prefrontal does not enter the rostral at all, which has a uniform curved edge at the top.

Prefrontal and two scales immediately behind are of identical size and shape.

L. isalenhosertyphlops sp. nov. is depicted in life in Akman and Gocmen (2019), on page 14 at Fig 7, image "a" and online at:
https://www.inaturalist.org/observations/112023319
and
https://www.inaturalist.org/observations/112023319

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*..

Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width

of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Distribution: *L. isalenhosertyphlops sp. nov*. occurs in the Cilicia region of Türkiye in association with the immediately adjoining Toros Daglari.

Etymology: The new species name for this taxon *L. isalenhosertyphlops sp. nov*. is a direct take of the English words "*Is a Lenhosertyphlops*" which accurately describes the state of this species being within the genus *Lenhosertyphlops* Hoser, 2012.

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *ISNTXEROTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:6C2F0B9D-81CD-49C2-8EF8-D79D849F0620

Holotype: A specimen at the Aydın Adnan Menderes University Museum Collection, Türkiye, specimen number AAMU TV20A collected from Kozan, Türkiye, Latitude 37.4521 N., Longitude 35.8193 E.

This facility allows access to its holdings.

Paratypes: 1/ Two specimens at the Aydın Adnan Menderes University Museum Collection, Türkiye, specimen numbers AAMU TV20B and AAMU TV20C collected from Kozan, Türkiye, Latitude 37.4521 N., Longitude 35.8193 E., and 2/ Four specimens at the Aydın Adnan Menderes University Museum Collection, Türkiye, specimen numbers AAMU TV19A, AAMU TV19B, AAMU TV19C and AAMU TV19D all collected from Topbağalı, Türkiye.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species including *L. isntxerotyphlops sp. nov*. are in the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

L. isntxerotyphlops sp. nov. occurs in association with the Amanos Daglari in southern central Türkiye.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. isntxerotyphlops sp. nov. is separated from all other species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

L. isntxerotyphlops sp. nov. is a pinkish brown on top, with an obviously chocolate brown terminal end of the tail. The slightly darker posterior edges of scales seen in other species in the complex are not seen in this species giving it a particularly uniform appearance. Scales on the anterior of the snout are light brown, with scattered dark brown spot-type markings along the suture lines.

Nasal and preocular are a pair of identically shaped thin topped triangles. Eye spot is slightly below centre and slightly posterior in the ocular scale.

The line between darker top and whitish venter on the flank is poorly defined.

The scales on the back of the head (only) do have obvious dark etching at the posterior edges.

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

https://www.inaturalist.org/observations/146485649

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*..

Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Distribution: *L. isntxerotyphlops sp. nov*. occurs in association with the Amanos Daglari in southern central Türkiye.

Etymology: The new species name for this taxon *L. isntxerotyphlops sp. nov*. is a direct take of the English words

"*In't* Xerotyphlops" AKA "*is not a* Xerotyphlops" which accurately describes the state of this species being within the genus *Lenhosertyphlops* Hoser, 2012 and not an invalidly coined name for the same genus. It therefore cannot be *Xerotyphlops* and/or isn't *Xerotyphlops.*

See also Hoser (2024b).

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *YESLENHOSERTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:810CE8D2-4F8D-4A2C-AB67-10ADC85091B7

Holotype: A specimen at the Zoology Department, Ege University, Türkiye, specimen number ZDEU 42/2005/55A collected from Öncüpınar, Kilis, Türkiye, Latitude 36.6463 N., Longitude 37.0825 E.

This facility allows access to its holdings.

Paratypes: 1/ A specimen at the Zoology Department, Ege University, Türkiye, specimen number ZDEU70/2006/70A collected from 4 km east of Polateli, Kilis, Türkiye, Latitude 36.8422 N., Longitude 37.1436 E., 2/ Two specimens at the Aydın Adnan Menderes University Museum Collection, Türkiye, specimen numbers AAMU TV18A and AAMU TV18B both collected from Yuvabaşı, Türkiye, Latitude 36.8623 N., Longitude 36.9758 E.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species including *L. yeslenhosertyphlops sp. nov*. are in the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

L. yeslenhosertyphlops sp. nov. occurs in association with the Gaziantep Platosu and associated nearby elevated areas in Türkiye.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. yeslenhosertyphlops sp. nov. is separated from all other species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

L. yeslenhosertyphlops sp. nov. is pinkish on top all over, including the tip of the snout, which is still pinkish in colour but a fraction lighter in colour. Sutures of anterior head scales are thin and pink. End of tail is medium chocolate brown. Eye spot is roughly at centre of ocular scale in terms of top and bottom and slightly posterior of centre.

Change from darker top to lighter venter is gradual and venter is pinkish white in colour.

L. yeslenhosertyphlops sp. nov. is depicted in life in Akman and Gocmen (2019), on page 14 at Fig 7 image "b".

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*..

Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Distribution: *L. yeslenhosertyphlops sp. nov*. occurs in association with the Gaziantep Platosu and associated nearby elevated areas in Türkiye.

Etymology: The new species name for this taxon *L. yeslenhosertyphlops sp. nov*. is a direct take of the English words "*yes* Lenhosertyphlops" AKA "*yes it is* Lenhosertyphlops" which accurately describes the state of this species being within the genus *Lenhosertyphlops* Hoser, 2012 and not an invalidly coined name for the same genus. It therefore cannot be *Xerotyphlops* and/or isn't *Xerotyphlops.*

See also Hoser (2024b).

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *ANOTHERLENHOSERTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:278B0723-CE3E-4353-8750-EB21966628AB

Holotype: A specimen at the National Museum, Prague, Czech Republic, specimen number NMP6V 72540 collected from Al´Adimah, 5 km south of Baniyas, Al´Adimah, Syria.

This facility allows access to its holdings.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species

formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species including *L. anotherhosertyphlops sp. nov*. are in the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

L. anotherlenhosertyphlops sp. nov. is apparently confined to the vicinity of the An-Nusayriyan Mountains near the west coast of Syria.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. anotherlenhosertyphlops sp. nov. is separated from all other species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

L. anotherlenhosertyphlops sp. nov. is the lightest coloured species in the nominate subgenus *Lenhosertyphlops* being pinkish beige in colour on top and whitish below. The scales of the upper surfaces of the snout are whitish with an even moderately thick darker etching. Rostral is particularly wide. Body on top is similar colour along the entire length, including the tail. Eye spot is effectively centred in the ocular scale, save for being a fraction anterior of the centre.

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*.. Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Distribution: *L. anotherlenhosertyphlops sp. nov*. is apparently confined to the vicinity of the An-Nusayriyan Mountains near the west coast of Syria.

Etymology: The new species name for this taxon *L. anotherlenhosertyphlops sp. nov*. is a direct take of the English words "*another* Lenhosertyphlops" AKA "*yes it is another* Lenhosertyphlops" which accurately describes the state of this species being within the genus *Lenhosertyphlops* Hoser, 2012 and not an invalidly coined name for the same genus. It therefore cannot be *Xerotyphlops* and/or isn't *Xerotyphlops.*

See also Hoser (2024b).

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *AGOODLENHOSERTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:B5924C2D-FCBC-4835-8BBE-C0BE1083BA36

Holotype: A specimen at the Zoology Department, Ege University, Türkiye, specimen number ZDEU C15/2008-1 collected from Çığır, Şırnak, Türkiye, Latitude 37.5190 N., Longitude 42.4537 E.

This facility allows access to its holdings.

Paratypes: Two preserved specimens at the Zoology Department, Ege University, Türkiye, specimen numbers ZDEU 124/2005/62A and ZDEU 124/2005/62B both collected from 17 km northwest of Mardin, Türkiye, Latitude 37.3129 N., Longitude 40.7340 E.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species including *L. agoodlenhosertyphlops sp. nov*. are in the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

L. agoodlenhosertyphlops sp. nov. is apparently confined to the Mardin Platosu, south of the Tigris River.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. agoodlenhosertyphlops sp. nov. is separated from all other

species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

A pinkish-purple dorsum, eye spot slightly over halfway up the ocular scale and posterior in it but not touching the rear suture line. Snout is lighter than back of head, being beige and the rostral scale has thick creamish suture line etchings that are uneven as one moves up the head away from the snout (they widen upwards). The prefrontal/frontal arrangement is of two scales of identical size and then a moderately wider one behind that.

The anterior one enters the rostral with a flattish, blunt curved rather than triangular edge, and then only just. Belly is pinkish white and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined. That is the line (without edge) runs across the scales and is not jagged edged by way of one scale row darker and another not. Tail region is the same colour as the rest of the upper body or slightly darker.

The base of the nasal scale is narrower than the preocular, but it is wider at the top at the bluntly triangular-shaped edge, but notably it curves up in a curved back c-shaped manner.

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*..

Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Distribution: *L. agoodlenhosertyphlops sp. nov*. is apparently confined to the Mardin Platosu, south of the Tigris River.

Etymology: The new species name for this taxon *L. agoodlenhosertyphlops sp. nov*. is a direct take of the English words "*a good* Lenhosertyphlops" which accurately describes the state of this species being a good species and within the genus *Lenhosertyphlops* Hoser, 2012.

It is not in an invalidly coined name for the same genus. It therefore cannot be *Xerotyphlops* and/or isn't *Xerotyphlops*.

See also Hoser (2024b).

The spelling of the species name is deliberate and should not be changed.

The species name is a noun in apposition.

LENHOSERTYPHLOPS* (*LENHOSERTYPHLOPS*) *CORRECTNOMENCLATURE SP. NOV.

LSIDurn:lsid:zoobank.org:act:464FB973-A6E6-4EEA-8E80-AE2E05685045

Holotype: A specimen at the Zoology Department, Ege University, Türkiye, specimen number ZDEU 396/2011 collected from Meydandere, Türkiye, Latitude 37.9265 N., Longitude 42.0950 E.

This facility allows access to its holdings.

Paratype: A specimen at the Zoology Department, Ege University, Türkiye, specimen number ZDEU 397/2011 collected from Meydandere, Türkiye, Latitude 37.9265 N., Longitude 42.0950 E.

Diagnosis: Until now, most authors have treated putative *Lenhosertyphlops vermicularis* (Merrem, 1820) as a wide-ranging species, found from the Adriatic coast to west Asia and including the Levant.

However, the molecular phylogenies of Kornilios (2017) and Kornilios *et al*. (2012, 2020) confirm that this putative species is in fact a complex.

15 species are recognised in this paper, with all but three species formally named for the first time.

The five Levant species associated with *L. syriacus* (Jan, 1883) are herein placed within the newly named subgenus *Paralenhosertyphlops subgen. nov*. and include *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*. (type species) (this paper), *L. husseinbintalali sp. nov*. (this paper), *L. menachembegini sp. nov*. (this paper), *L. misfitmindss sp. nov*. (this paper) and *L.* (*Paralenhosertyphlops*) *syriacus* (Jan, 1883).

They are separated from the ten species in the nominate subgenus *Lenhosertyphlops* Hoser, 2012 by the fact that as a rule the nasal furrow is shortened and does not surpass the nostril, whereas it does in the species within the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

Paralenhosertyphlops subgen. nov. species are further defined by having a wide, slightly squarish-shaped rostral (versus more ovoid at the upper edge), mainly brownish, rather than pinkish purple on top, (in mature adults) and with relatively well-defined dark edges on the posterior of each dorsal scale.

The remaining ten species including *L. correctnomenclature sp. nov*. are in the nominate subgenus *Lenhosertyphlops* Hoser, 2012.

L. correctnomenclature sp. nov. occurs in the hilly country immediately north of the Tigris Basin in the Siirt District of Siirt Province in Türkiye.

Other species in the genus are found from the Adriatic Sea in the west to west Afghanistan in the east and members of the subgenus *Paralenhosertyphlops subgen. nov.* occur in the Levant.

L. correctnomenclature sp. nov. is separated from all other species in the genus *Lenhosertyphlops* Hoser, 2012, type species *Typhlops vermicularis* Merrem, 1820 by the following unique combination of characters:

A dark pinkish-brown dorsum, eye spot slightly over halfway up the ocular scale and posterior in it but not touching the rear suture line. Snout is lighter than back of head and rostral scale has thick creamish suture line etchings that are even as one moves up the head away from the snout. The prefrontal/frontal arrangement is of two scales of identical size and then a much wider one behind that.

The anterior one enters the rostral with a flattish, blunt edged triangular edge. Belly is pinkish white and the transition from darker upper body on the lower flank is even along the relevant edge but not at all well-defined. That is the line (without edge) runs across the scales and is not jagged edged by way of one scale row darker and another not. Tail region is the same colour as the rest of the upper body.

The base of the nasal scale is narrower than the preocular, but

it is wider at the top at the sharply triangular-shaped edge, but notably it curves up in a curved back c-shaped manner.

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

https://www.inaturalist.org/observations/117441710

Separation of all species in the nominate subgenus is within the preceding formal description of *L. notaxerotyphlops sp. nov*.. Separation of all species in the subgenus *Paralenhosertyphlops subgen. nov.* is within the preceding formal description of *Lenhosertyphlops* (*Paralenhosertyphlops*) *netanyahui sp. nov*.. Both these descriptions are relied upon explicitly as part of this formal description.

Lenhosertyphlops Hoser, 2012 species in both subgenera are separated from all other Blind Snakes by the following suite of characters: Snout is depressed and rounded, strongly projecting; nostrils are lateral. The rostral is about one third of the width of the head, extending nearly to the level of the eyes; nasal is incompletely divided, the cleft proceeding from the second labial; preocular is present, about as broad as the ocular to twice as broad, in contact with the second and third labials; eyes are distinguishable; upper head scales are moderately enlarged; four upper labials. Diameter of the body is 40-52 times in the total length. The tail is about as long as broad and ends in a spine. There are 22-24 mid body rows, 302-413 mid-dorsal scales, total length/midbody diameter ratio is 34-52, superior nasal suture is not visible dorsally, rostral width/head width 0.30 to 0.38. Colour is pinkish to purplish or brownish above (in adults), also varies depending on species and coloured lighter (usually yellowish or whitish) ventrally.

This diagnosis for *Lenhosertyphlops* Hoser, 2012 has been modified and corrected in minor ways since the publication of the original description of Hoser (2012) and should therefore be relied upon as an updated and corrected version.

The genus name *Xerotyphlops* Hedges *et al*., 2014 is an illegally coined objective junior synonym for *Lenhosertyphlops* Hoser, 2012 and therefore should never be used as correct.

Distribution: *L. correctnomenclature sp. nov*. occurs in the hilly country immediately north of the Tigris Basin in the Siirt District of Siirt Province in Türkiye.

Etymology: The new species name for this taxon *L. correctnomenclature sp. nov*. is a direct take of the English words "*correct nomenclature*" which accurately describes the state of this species being a good properly named taxon in accordance with the *International Code of Zoological Nomenclature* and placed in a genus compliant with this code, namely the genus *Lenhosertyphlops* Hoser, 2012.

It is not placed in an invalidly coined name for the same genus. It therefore cannot be within *Xerotyphlops* and/or isn't *Xerotyphlops*, as that name is a junior synonym of *Lenhosertyphlops* Hoser, 2012.

See also Hoser (2024b).

The spelling of the species name is deliberate and should not be changed.

Also see the material immediately below.

ILLEGALLY COINED BLINDSNAKE GENUS NAMES BY WOLFGANG WÜSTER AND HIS GANG OF THIEVES.

A criminal gang, led by the notorious Wolfgang Wüster of Wales, masquerading as scientists have for some decades been in a state of war with the International Commission for Zoological Nomenclature (ICZN).

Their published aim is the destruction of the ICZN via themselves disobeying the rules of science and the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) a rule book that governs scientific communications and naming of organisms.

They do this by illegally renaming species, genera and families of reptiles and other animals in breach of the code and copyright laws. They then hack and sabotage worldwide databases and the like to get others to use their names as "correct" ICZN names, while the Wüster gang are fully aware that their illegally coined names are not correct.

As of 2025, over 130 entities have had illegally coined synonyms created by the Wüster gang and peddled globally as correct.

Over 400 members of the Wüster gang are listed by name in the Wüster gang terrorism memo, available online in their "paper" Wüster *et al.* (2021).

When not engaging in egregious taxonomic vandalism the Wüster gang are engaged in hard core criminal acts.

The examples are too numerous to publish here and are so outrageous as to be generally described as "unbelievable".

This unbelievability of what they do is one of the reasons why that as a group, they continue to get away with it.

These unbelievable acts include Don Broadley and Bill Branch kidnapping young black boys in Africa for anal sex. As if that is not bad enough, another high-profile member of the Wüster gang is Adam Britton. In 2023 he pled guilty to anally raping people's pet dogs that he kidnapped.

He posted his crimes to others in the Wüster gang on the dark web. Britton is now in jail till at least 2028 and was only arrested and charged after falling foul of a more powerful member of the same Wüster gang whom he operated with as a partner for many years.

Another member of the gang in Australia whose name has been suppressed by the courts was found in civil courts to have raped multiple women over 1,000 times, engaged in acts of animal abuse and cruelty As well as other serious crimes against very young children. As he is an ex-police officer, the police have not followed the instructions of the County Court judge and charged the man, so he remains free and has come to the attention of the courts again for alleged crimes against women, who have successfully got restraining orders against him.

Of course those court orders have been disobeyed!

Another serial trademark infringer in the group pled guilty to shooting aboriginals, which is itself unusual in Australia. Usually people who shoot and kill aboriginals get bravery awards.

See for example the etymologies in the paper of Hoser (2025b) for *Sloppytyphlops fildesi sp. nov*., *S. dhuae sp. nov*., *S. johnpati sp. nov*. and *S. murderingpoliceorum sp. nov*..

Meanwhile another member of the Wüster gang, Jamie Benbow, of Bendigo, Victoria, has done stints in jail after being found guilty in the courts of crimes of violence, stalking, harassment and similar as well as dealing in commercial quantities of illegal drugs.

In case it was missed, Benbow also ran over someone while high on Ice (a toxic illicit drug).

Better known illegally coined synonym names by the Wolfgang Wüster gang are *Malayopython* Reynolds, Niemiller and Revell, 2013 which is an illegal duplicate for *Broghammerus* Hoser, 2004, *Leiopython meridionalis* Schleip, 2014 as an illegal duplicate for *Leiopython hoserae* Hoser, 2000 (see Hoser 2000b) and *Afronaja* Wallach Wüster and Broadley, 2009 which is an illegally coined duplicate for *Spracklandus* Hoser, 2009 (see Hoser 2009b).

As this paper is about Blind Snakes, it is relevant that the illegally coined Blindsnake names be presented here for readers so that they know the correct ICZN names for the relevant entities and avoid using the illegally coined ones and/or if reading these names, to know what the correct ICZN names actually are.

This is because the authors will quite likely be dishonestly hiding the relevant information.

These illegally coined Blind Snake genus names are as follows:

***Amerotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Altmantyphlops* Hoser, 2012.**

***Antillotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Mosestyphlops* Hoser, 2012.**

***Asiatyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Argyrophis* Gray, 1845.**

***Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Maxhoserus* Hoser, 2012.**

Virgotyphlops Wallach 2020 and 2021 is yet another illegally coined junior synonym of _Maxhoserus_ Hoser, 2012, so if a dual nomenclature won't screw things up, a three way one will!

Madatyphlops Hedges _et al_., 2014 is an illegally coined junior synonym of _Ronhoserus_ Hoser, 2012.

Malayotyphlops Hedges _et al_., 2014 is an illegally coined junior synonym of _Katrinahosertyphlops_ Hoser, 2012.

Pseudoindotyphlops Sidharthan, Roy and Karanth, 2024 is an illegally coined junior synonym of _Freudtyphlops_ Hoser, 2012.

Sundatyphlops Hedges _et al_., 2014 is an illegally coined junior synonym of _Ackytyphlops_ Hoser, 2012.

Xerotyphlops Hedges _et al_., 2014 is an illegally coined junior synonym of _Lenhosertyphlops_ Hoser, 2012.

The names of Gray and Hoser should be used as the correct ICZN scientific names.

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CONFLICT OF INTEREST

None.

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Indotyphlops Hedges *et al.* 2014 is a junior synonym of *Maxhoserus* Hoser, 2012, *Pseudoindotyphlops* Sidharthan, Roy and Karanth, 2024 is a junior synonym of *Freudtyphlops* Hoser, 2012, and a new species of *Maxhoserus* is formally described.

LSIDURN:LSID:ZOOBANK.ORG:PUB:51E34498-F85D-4DD8-8050-34E9952753E2

RAYMOND T. HOSER
LSID urn:lsid:zoobank.org:author:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
***Phone*: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au**
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ABSTRACT

In a major monograph being review of the extant Scolecophidians, Hoser in 2012 formally named numerous genera and species of Blindsnake.

This included *Maxhoserus* Hoser, 2012, type species: *Eryx braminus* Daudin, 1803 and *Freudtyphlops* Hoser, 2012, type species *Typhlops exiguus* Jan, 1864.

In 2014, Hedges *et al*. (2014) followed the advice of the Wolfgang Wuster / Adam Britton gang of hard-core criminals, sex offenders and thieves via Kaiser *et al*. (2013) to unlawfully create a junior synonym *Indotypholops* Hedges *et al.* 2014 in anticipation of the International Commission of Zoological Nomenclature (ICZN) formally erasing all Hoser works from the scientific record (Kaiser *et al*. 2013, Rhodin *et al*. 2015).

That application of Rhodin *et al*. (2015) was REJECTED by the ICZN, on 30 April 2021 (ICZN 2021) making *Maxhoserus* Hoser, 2012 the correct and available name for the genus.

Wolfgang Wuster / Adam Britton gang member Adam Britton has recently been jailed till at least 2028 for stealing people's pet dogs and anally raping them. His citation of Kaiser *et al*. (2013) as justification for his crimes was not accepted by the Supreme Court of the Northern Territory.

More recently Sidharthan, Roy and Karanth, 2024 created an objective junior synonym for *Freudtyphlops* Hoser, 2012 in the form of their putative genus *Pseudoindotyphlops.*

This paper serves to underline these facts in wake of the continued use of the invalid names and many other illegally coined Blindsnake genus names, with the active encouragement of the Wuster / Britton gang, including on reptile databases they despotically control and censor including that managed by Peter Uetz at: https://reptile-database.reptarium.cz/

This paper also names for the first time a rare and potentially endangered species that has until now been treated as putative *Maxhoserus pammeces* (Günther, 1864) with a type locality of Madras, (now Chennai) India and adjacent to the eastern Ghats.

The new species *Maxhoserus notindotyphlops sp. nov.* is a taxon from Kothagiri, Tamil Nadu, of the Western Ghats in India.

Keywords: Taxonomy; nomenclature; Blindsnake; *Maxhoserus*; *Freudtyphlops*; *braminus*; *porrectus*; *pammeces*; taxonomic vandalism; *Indotyphlops*; *Pseudoindotyphlops*; *Virgotyphlops*; reptile database; Uetz; Peter; Ukraine War; Vladimir Putin; Adam Britton; new species; *notindotyphlops*.

INTRODUCTION

In a major monograph being review of the extant Scolecophidians Hoser (2012) formally named numerous genera and species of Blindsnake as part of a planet wide revision.

Hoser (2013a, 2025) continued this process for Australia, including a continent-wide review of species, resulting in 81 new species in the two papers combined, more than doubling the number of recognized species.

Most had been flagged in earlier molecular studies.

Among the dozens of new genera named in Hoser (2012) were *Maxhoserus* Hoser, 2012, type species: *Eryx braminus* Daudin, 1803 and *Freudtyphlops* Hoser, 2012, type species *Typhlops exiguus* Jan, 1864.

In 2014, Hedges *et al*. (2014) followed the advice of the Wolfgang Wuster / Adam Britton gang of hard-core criminals and thieves via their widely touted law-breaker manifesto known as

Kaiser *et al*. (2013) to break rules, regulations and ethics as they please.

They did this to breach copyright laws, including the Australian Copyright Act 1968, Section 195 (Moral Rights) and the *International Code of Zoological Nomenclature* (Ride *et al*. 1999) to unlawfully create an objective junior synonym name *Indotyphlops* Hedges *et al*. 2014 in anticipation of the International Commission of Zoological Nomenclature (ICZN) formally erasing all Hoser works from the scientific record (Kaiser et al. 2013, Rhodin *et al*. 2015).

That application of Rhodin *et al*. (2015) was REJECTED by the ICZN, on 30 April 2021 (ICZN 2021) making *Maxhoserus* Hoser, 2012 the only currently correct and available name for the genus.

Another attempt by Thiele *et al*. (2020) was also REJECTED by the ICZN.

See also Ceriaco *et al*. (2023), Cogger (2014), Cotton (2014), Dubois *et al*. (2019), Hawkeswood (2021), Hołyński (1994, 2020), Hoser (2007, 2009a, 2012a-c, 2013b, 2015a-f, 2019a, 2019b, 2020a-c, 2021a-b, 2023, 2024a-b, 2025a-b), ICZN (1991, 2001), Jiménez-Mejías *et al*. (2024), Mosyakin (2022), Pethigayoda (2023), Wellington (2015) and Winkler (2024).

This paper serves to underline these facts in the wake of the continued forced use of the illegally coined synonym name *Indotyphlops* with the active encouragement of the Wuster / Britton gang, including on reptile databases they despotically control including that managed by Peter Uetz at: https://reptile-database.reptarium.cz/

Key Wolfgang Wuster / Adam Britton gang member Adam Britton has recently been jailed till at least 2028 for stealing people's pet dogs and anally raping them, before posting the depraved videos online for commercial gain and satisfaction.

For details see at:
https://www.abc.net.au/news/2024-08-08/adam-britton-sentenced-bestiality-animal-cruelty/104194702
Britton was ultimately charged for doing these acts dozens of times (Fitzgerald 2024) after falling out with a business partner Graeme Webb but had been doing these bestiality acts with police-protection for decades as had other members of the Wolfgang Wuster / Adam Britton gang.

Britton's attempted citation of Kaiser *et al*. (2013) as justification for his crimes was not accepted by the Supreme Court of the Northern Territory, so before the full trial he pled guilty to some of his crimes and he was convicted of multiple (dozens) of criminal offences.

I should mention for completeness that the type species of *Maxhoserus* Hoser, 2012 was *Eryx braminus* Daudin, 1803, AKA the Braminy Blind Snake. The type species for *Indotyphlops* was selected as *Typhlops pammeces* Günther, 1864, technically meaning the latter is a subjective synonym.

However, all published molecular studies have shown a divergence between the two species at between 6 and 8 MYA, meaning that creation of separate genera for each type group is not tenable.

Notwithstanding the fact that the preceding has been known for decades now, it was astounding, but not out of character, for serial criminal and taxonomic vandal Van Wallach to erect an objective junior synonym of *Maxhoserus* Hoser, 2012 in the form of *Virgotyphlops* Wallach, 2020.

Obviously that name, created in another act of egregious taxonomic vandalism should never be used as correct either.

Wallach engaged in taxonomic vandalism in 2009 when in conjunction with Wolfgang Wuster and Don Broadley, they published Wallach, Wuster and Broadley, in which they unlawfully created an objective junior synonym of *Spracklandus* Hoser, 2009 (for the African Spitting Cobras) as published in Hoser (2009b) in the form of their *Afronaja*.

The ICZN ruled against them in 2021 (ICZN 2021).

Wallach has long been a notorious criminal. Wuster also is a serious hard-core criminal regularly engaging in illegal acts as diverse as animal abuse and cruelty, stalking and harassment, trolling online and has been the subject of numerous allegations of demanding sex from female students before passing them in their courses at the university he works at.

Don Broadley, along with close friend William (Bill) Branch, was publicly outed after they spent years procuring young black boys for anal sex in southern Africa.

All of Wuster, Wallach and Broadley are close associates in crime with the now jailed Adam Britton (see above), who as a gang even published their law-breaking war cry known as Wuster *et al*. (2021), telling others to engage in like acts of animal abuse and so on.

That document was widely published by them online although the gang have since end 2023 had most copies removed from the web after Britton's police protection ended and he went to jail.

Instrumental in the web of deceit of the Wuster / Britton gang has been the censorship of the internet as best they can to remove all evidence of the correct scientific nomenclature for the relevant species and genera they have sought to rename and claim kudos for discovering.

Central here is the website known as "The Reptile Database" run by their servant Peter Uetz, a man with his own numerous skeletons in the closet and also a serial liar.

He claims his site is a complete database of reptile science, names and papers.

But in actual fact it is a very warped and censored world view.

Most of my own works on Blindsnakes and the relevant taxonomic and nomenclatural acts are carefully censored from his site, including via censoring third party publications that use these names as correct.

This would not be so bad, were it not for the fact that others using the "reptile database" as a go to resource (like advertised) are misled into ignoring the Hoser names as well as those of other herpetologists on the gang's "blacklist" simply because they are not there and therefore appear not to exist.

These people using Uetz's the "Reptile Database" then overlook the relevant publications and then rename the taxa innocently believing the relevant taxa are unnamed.

How many times has this happened in the last decade?

Over 100 times!

See Hoser (2014b) for examples.

An example relevant to this paper is that of Sidharthan, Roy and Karanth (2024) who created an objective junior synonym for *Freudtyphlops* Hoser, 2012 in the form of their putative genus *Pseudoindotyphlops*.

Their paper goes through what they thought was some great science that they alleged was original research and on the basis of what they had worked out, they did what they thought was obvious.

They assigned a name to a previously (or so they thought) unnamed genus.

Problem was, another scientist in the form of myself had been there 20 years earlier and even after a series of illegal wildlife department raids and thefts of files (see for example Hoser, 1993, 1996, 2012a, 2012c) I had named the very same genus 12 years earlier in 2012.

Their paper was perfectly OK in terms of the science and as science should be, the authors should have simply supported the earlier work of myself and the same taxonomic and nomenclatural conclusions.

That is their findings supported my earlier taxonomy as opposed to refuting it.

That would of course go against the false narrative Wuster, Britton and the others in the gang who at all times try to make out that any scientific works of mine must be wrong, simply because I am "Raymond Hoser" and therefore by definition can never be correct.

This gang say the same for the works of other eminent

herpetologists, including Richard Walter Wells and Cliff Ross Wellington of Australia, AKA "Wells and Wellington" who have a far lower error rate than pretty much all other Australian herpetologists, including quite likely myself!

So, in terms of the preceding all that really needs to be known is the following:

Pseudoindotyphlops Sidharthan, Roy and Karanth 2024 is an objective synonym of *Freudtyphlops* Hoser, 2012 and is therefore a name that can never be used in Zoology as correct again!

Indotyphlops Hedges *et al*., 2014 is a subjective synonym of *Maxhoserus* Hoser, 2012 and cannot therefore be applied to the same species group.

Virgotyphlops Wallach, 2020 is also an objective synonym for *Maxhoserus* Hoser, 2012 and is therefore a name that can never be used in Zoology as correct again!

In the case of *Virgotyphlops* Wallach, 2020, Wallach's description was so bad he had another go at it in 2021 (see Wallach 2020 and 2021) and even the second paper was an epic fail!

This taxonomic vandalism and destruction came from a man with PhD from Harvard University, which is supposedly the finest science institution on the planet, giving credence to 2025 US President Donald Trump's claims against academia in 2025. See for example at:
https://www.aljazeera.com/news/2025/5/14/trump-administration-cuts-another-450m-in-harvard-grants-in-escalating-row

The irony of all this reckless renaming of species by the Wuster / Britton gang is that they justified it in 2012, when Wuster (2012) was published.

This document later rebadged as "Kaiser *et al*. 2013" as cited here whinged about the fact that myself in particular and to a lesser extent Richard Wells has engaged in "mass naming of taxa" to such an extent that there was nothing left for them to name.

At the relevant time, Wells, Wellington and Hoser had named about 500 species and genera, of which about 2/3 were in Australia and the rest elsewhere.

Since Kaiser *et al*. (2013) has been published, I have named over 1000 more species and subspecies of reptiles and other herpetologists across the world have also named more than 2000!

Numerous molecular studies have flagged unnamed species across the world and among almost all groups of extant reptiles.

Molecular studies globally have often indicated as many or more species of unnamed Scolecophidians (AKA Blindsnakes) as named ones.

On the back of numerous studies making such findings over two decades in Australia, I did what no one else had the wherewithal to do and set out to work out how to tell the various species apart.

The number of described Australian species was more than doubled, with the paper of Hoser (2025b) naming no less than 76 new species of Blindsnake on the Australian continent.

The first purpose of this paper is about correcting the widespread misconceptions about the genus level-nomenclature of *Maxhoserus* Hoser, 2012 and *Freudtyphlops* Hoser, 2012.

It is to ensure that in the future these correct scientific names are used instead of the non-ICZN synonym names (otherwise known as "*nomen illegitimatum*" being a word coined by the criminal Van Wallach).

The gang also use their coined name "*Aspidonym*", which is code for illegally created synonym names created by the gang.

The second purpose of this paper is to formally name a western population of putative *Maxhoserus pammeces* (Günther, 1864) currently only known from a handful of specimens as a new species.

Besides the taxonomic imperative to do so, there is the conservation imperative as well, in that it is from a region of intense human pressure and may well expire without proper management by government and other stakeholders.

MATERIALS AND METHODS

In terms of materials and methods, these are as for Hoser (2025b) but instead applied to the south Indian populations of putative *Maxhoserus pammeces* (Günther, 1864) including synonym names applied to this putative taxon.

Available specimens, papers and photos of the relevant putative species were inspected.

They were checked for morphological divergences and/or any obvious biogeographical barriers separating the populations.

The paper of Sidharthan, Roy and Karanth (2024) flagged a divergent result for a population of putative *Maxhoserus pammeces* (Günther, 1864) that could not be simply explained by distance, as other more spread samples clustered and this one did not.

Distributions were also mapped against rock and soil types to see if these also affected the relevant taxa.

Specimens inspected included dead and live specimens as well as images with good locality data including photo sharing sites online like "Inaturalist", "Twitter" (AKA "X"), "Flickr", "Facebook" and "Instagram".

A sweep of the published literature and museum databases, photo sharing sites and the like was done to properly ascertain relevant distributions of all known populations of putative *Maxhoserus pammeces* (Günther, 1864).

References relevant to the taxonomic and nomenclatural decisions herein included Annandale (1906), Boulenger (1893), Daudin (1803), Duméril and Bibron (1844), Fitzinger (1843), Gray (1845), Günther (1864), Hawkeswood (2021), Hedges *et al*. (2014), Hoser (2012d, 2013a, 2014, 2025a-b), ICZN (2012), Pyron and Wallach (2014), Ride *et al*. (1999), Sidharthan, Roy and Karanth (2024), Smith (1943), Wallach (2020, 2021) and sources cited therein.

Online references relied upon were checked as correct in terms of content cited on 15 May 2025.

RESULTS

The divergent population of putative *Maxhoserus pammeces* (Günther, 1864) collected from Kothagiri, Tamil Nadu, India was morphologically very similar to that of the nominate form of *Maxhoserus pammeces* (Günther, 1864) found further east including hilly and coast areas to Madras, being the type locality for *M. pammeces*.

Based on geographical separation across an area of different habitat and competing species in the form of *Maxhoserus braminus* (Daudin, 1803), I formed the view that the divergent population was allopatric and had allopatrically speciated over an extended period of time measured in the millions of years.

This was confirmed by the deep molecular divergence as reported by Sidharthan, Roy and Karanth (2024), which was at variance to widely scattered eastern samples that were not particularly divergent of one another.

There were no available synonym names for this population.

The relevant names were *Maxhoserus pammeces* (Günther, 1864) with a type locality of Madras, (now Chennai) India (east coast of south part of the subcontinent) and *M. psammophilus* (Annandale, 1906) with a type locality of Ramanad, which is about 300 km straight line down the coast to the south.

I therefore have no hesitation at all naming as a new species *Maxhoserus notindotyphlops sp. nov*..the until now unnamed population from the elevated inland area of Kothagiri, Tamil Nadu, India.

This is done in accordance with the *International Code of Zoological Nomenclature* (Ride *et al*. 1999) as amended (ICZN 2012) as part of the permanent scientific record.

THE NEGATIVE IMPACTS OF TAXONOMIC VANDALISM ON THE CONSERVATION OF BLIND SNAKES AND OTHER REPTILES

Refer to Hoser (2019a, 2019b 2025b) and the comments therein.

In terms of conservation of the newly named species in this paper, it is important that further specimens be collected and/or

observed in situ and their exact range of distribution ascertained.

Studies should be made of habits, diet and population dynamics and proper long-term conservation plans enacted.

More broadly it is important that other people actively sort through the rest of the world's Blindsnakes and do what is most of important of all in terms of their conservation, that being to ensure all species are properly named.

Taxonomic vandalism and dual or triple nomenclatures created by taxonomic vandals such as Blair Hedges, Van Wallach and Alexander Pyron must be avoided at all costs.

This obviously means strict adherence to the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as detailed in Hoser (2012b, 2013b, 2015a-f).

MAXHOSERUS NOTINDOTYPHLOPS SP. NOV.

LSIDurn:lsid:zoobank.org:act:E61ADEC9-4FF7-42F9-8A9D-155CFDFA8B2A

Holotype: A specimen at the Centre for Ecological Sciences, Indian Institute of Science, Bengaluru 560 012, India, specimen number CES16711 of an animal collected from Kothagiri, Tamil Nadu, India.

Diagnosis: Until now *Maxhoserus notindotyphlops sp. nov*. has been treated as a western population of the relatively uncommon species of Blindsnake *Maxhoserus pammeces* (Günther, 1864).

The molecular results published by Sidharthan, Roy and Karanth (2024) flagged *M. notindotyphlops sp. nov*. as being 20 MYA divergent from the nominate form of *M. pammeces* in their Supplementary Fig. S1.

In spite of this deep divergence, *M. notindotyphlops sp. nov*. and *M. pammeces* are remarkably similar in form.

M. notindotyphlops sp. nov. is separated from *M. pammeces* by being as an adult snake a generally darker coloured blindsnake all over. *M. notindotyphlops sp. nov*. is dark brownish pink rather than dark yellowish pink on the dorsum. The tip of the snout and tail tip are barely lighter that other parts of the dorsum, versus obviously so in *M. pammeces.*

M. notindotyphlops sp. nov. and *M. pammeces* are separated from all other species in *Maxhoserus* Hoser, 2012 by the fact that the circumference of the body goes 18-24 times into the total length, versus 13-17 times in all other species.

Species within *Maxhoserus* Hoser, 2012 are separated from all other Blind Snakes by the following suite of characters: Rostral narrow, the upper portion one third the width of the head, not extending quite to the level of the eyes; nostril between two nasals, the anterior (lower) of which extends to the upper surface of the head and is in contact inferiorly with the preocular; prefrontal nearly as large as the ocular, in contact with the second and third labials; eyes distinct; upper head scales are a little larger than the scales on the body; four upper labials; diameter of body is 35-55 times in the total length; tail is as long as or a little longer than broad, ending in a spine. As a rule, 20 rows of scales around the middle of the body. Brownish or yellowish pink to blackish above, lighter inferiorly; the snout, anal region and the tail is usually whitish at least at the very tips, but sometimes this is barely distinct or noticeable.

Distribution: *M. notindotyphlops sp. nov*. is known only from the vicinity of the type locality, being Kothagiri, Tamil Nadu, India, but is almost certainly more widespread in the Western Ghats.

M. pammeces is found in scattered locations on the lower eastern part of the Indian subcontinent, generally south of Chennai, but broadly in association with the lower Eastern Ghats.

Etymology: *M. notindotyphlops sp. nov*. has its species name taken from the exact words "Not Indotyphlops" as a blunt statement of the obvious in that it is not *Indotyphlops*.

The species name is a noun in apposition.

ILLEGALLY COINED GENUS BLINDSNAKE NAMES BY WOLFGANG WÜSTER AND HIS GANG OF THIEVES.

A criminal gang, led by the notorious Wolfgang Wüster of Wales, masquerading as scientists have for some decades (since 1987) been in a state of war with the International Commission for Zoological Nomenclature (ICZN).

Their published aim (i.e. Wüster *et al*. 2021) is the destruction of the ICZN via themselves disobeying the rules of science and the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) a rule book that governs scientific communications and naming of organisms.

They do this by illegally renaming species, genera and families of reptiles and other animals in breach of the code and copyright laws. They then hack and sabotage worldwide databases and the like to get others to use their names as "correct" ICZN names, while the Wüster gang are fully aware that their illegally coined names are not correct.

As of 2025, over 130 entities have had illegally coined synonyms created by the Wüster gang and peddled globally as correct.

Over 400 members of the Wüster gang are listed by name in the Wüster gang terrorism memo, available online in their "paper" Wüster *et al.* (2021).

When not engaging in egregious taxonomic vandalism the Wüster gang are engaged in hard core criminal acts.

The examples are too numerous to publish here and are so outrageous as to be generally described as "unbelievable".

This unbelievability of what they do is one of the reasons why that as a group, they continue to get away with it.

These unbelievable acts include Don Broadley and Bill Branch kidnapping young black boys in Africa for anal sex. As if that is not bad enough, another high-profile member of the Wüster gang is Adam Britton. In 2023 he pled guilty to anally raping people's pet dogs that he kidnapped.

He posted his crimes to others in the Wüster gang on the dark web. Britton is now in jail till at least 2028 and was only arrested and charged after falling foul of a more powerful member of the same Wüster gang whom he operated with as a partner for many years.

Another member of the gang in Australia whose name has been suppressed by the courts was found in civil courts to have raped multiple women over 1,000 times, engaged in acts of animal abuse and cruelty as well as other serious crimes against very young children. As he is an ex-police officer, the police have not followed the instructions of the County Court judge and charged the man, so he remains free and has come to the attention of the courts again for alleged crimes against women, who have successfully got restraining orders against him.

Of course, those court orders have been disobeyed!

Another serial trademark infringer in the group pled guilty to shooting aboriginals, which is itself unusual in Australia. Usually people who shoot and kill aboriginals get bravery awards.

See for example the etymologies in the paper of Hoser (2025b) for *Sloppytyphlops fildesi sp. nov*., *S. dhuae sp. nov*., *S. johnpati sp. nov*. and *S. murderingpoliceorum sp. nov*. in that paper.

Meanwhile another member of the Wüster gang, Jamie Benbow, of Bendigo, Victoria, has done stints in jail after being found guilty in the courts of crimes of violence, stalking, harassment and similar as well as dealing in commercial quantities of illegal drugs.

In case it was missed, Benbow also ran over someone while high on Ice (a toxic illicit drug).

As this paper is about Blind Snakes, it is relevant that the illegally coined Blindsnake names be presented here for readers so that they know the correct ICZN names for the relevant entities and avoid using the illegally coined ones and/or if reading these names, to know what the correct ICZN names actually are.

This is because the authors will quite likely be dishonestly hiding the relevant information.

These illegally coined Blind Snake genus names are as follows:

***Amerotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Altmantyphlops* Hoser, 2012.**

***Antillotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Mosestyphlops* Hoser, 2012.**

***Asiatyphylops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Argyrophis* Gray, 1845.**

***Indotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Maxhoserus* Hoser, 2012.**

***Virgotyphlops* Wallach 2020 and 2021 is yet another illegally coined junior synonym of *Maxhoserus* Hoser, 2012, so if a dual nomenclature won't screw things up, a three way one will!**

***Madatyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Ronhoserus* Hoser, 2012.**

***Malayotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Katrinahosertyphlops* Hoser, 2012.**

***Pseudoindotyphlops* Sidharthan, Roy and Karanth, 2024 is an illegally coined junior synonym of *Freudtyphlops* Hoser, 2012.**

***Sundatyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Ackytyphlops* Hoser, 2012.**

***Xerotyphlops* Hedges *et al*., 2014 is an illegally coined junior synonym of *Lenhosertyphlops* Hoser, 2012.**

The names of Gray and Hoser should be used as the correct ICZN scientific names.

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CONFLICT OF INTEREST - NONE.

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Six new species of Asian Vine Snake in the *Ahaetulla prasina* (Boie, 1827) species complex from south-east Asia.

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RAYMOND T. HOSER
LSID urn:lsid:zoobank.org:author:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
***Phone*: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au**
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ABSTRACT

It has long been recognised that the south Asian snake genus *Ahaetulla* Link, 1807 has underestimated species diversity. The purpose of this paper is to formally identify and name six divergent species in the *A. prasina* (Boie, 1827) species complex.

These newly named and identified snakes, all being until now treated as populations of putative *Ahaetulla prasina* (Boie, 1827) or *A. mycterizans* (Linnaeus, 1758) are as follows:

The population from Palawan, Philippines, is herein formally named as *Ahaetulla palawanensis sp. nov.*,

The population from Sulawesi, Indonesia is herein formally named as *A. niceone sp. nov.*,

The population from Lombok in the Lesser Sundas, Indonesia is herein formally named as *A. schmick sp. nov.*,

The population from North and West Sumatra, Indonesia of putative *A. prasina* is herein formally named as *A. aah sp. nov.,*

A population from Borneo, until now treated as a divergent population of *A. mycterizans* (Linnaeus, 1758) is herein formally named as *A. bagus sp. nov.* and,

A population from southern parts of Vietnam is herein formally named as *A. dep. sp. nov.*.

These are all formally named in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as part of the permanent scientific record.

Formally identifying and naming biodiversity is the essential first step in ensuring its long-term conservation.

Keywords: Snake; *Ahaetulla*; *prasina*; *mycterizans*; Palawan; Sulawesi; Lombok; Sumatra; Borneo; Vietnam; new species; *palawanensis*; *niceone*; *schmick*; *aah*; *bagus*; *dep*.

INTRODUCTION

It has long been recognised that the south Asian snake genus *Ahaetulla* Link, 1807 has underestimated species diversity.

This has repeatedly been confirmed in various molecular studies, showing populations of putative species to have deep divergences.

This has especially been the case in terms of species typically placed within the *Ahaetulla prasina* (Boie, 1827) species complex of southern Asia.

In recent years a number of newly identified species from the Indian subcontinent and nearby have been formally identified and named.

Obvious species from elsewhere already flagged in molecular studies remain unnamed.

Therefore, the purpose of this paper is to formally identify and name six divergent species in the *A. prasina* (Boie, 1827) species complex.

These newly named and identified snakes, all being until now treated as populations of putative *Ahaetulla prasina* (Boie, 1827) or *A. mycterizans* (Linnaeus, 1758) are as follows:

The population from Palawan, Philippines, is herein formally named as *Ahaetulla palawanensis sp. nov.*,

The population from Sulawesi, Indonesia is herein formally named as *A. niceone sp. nov.*,

The population from Lombok in the Lesser Sundas, Indonesia is herein formally named as *A. schmick sp. nov.*,

The population of putative *A. prasina* from North and West Sumatra, Indonesia is herein formally named as *A. aah sp. nov.,*

A population from Borneo, until now treated as a divergent population of *A. mycterizans* (Linnaeus, 1758) is herein formally named as *A. bagus sp. nov.* and:

A population from southern parts of Vietnam is herein formally named as *A. dep. sp. nov.*.

These are all formally named in accordance with the rules of the International Code of Zoological Nomenclature (Ride *et al.* 1999) as part of the permanent scientific record.

Formally identifying and naming biodiversity is the essential first step in ensuring its long-term conservation.

MATERIALS AND METHODS

Following the flagging of the preceding listed taxa by way of molecular studies published previously and/or significant biogeographic isolation and divergence, a multidisciplined approach was taken to confirm that the six flagged populations did in fact represent divergent and identifiable species.

Available specimens, papers and photos of the relevant putative species were inspected.

They were checked for differences between other populations of putative *Ahaetulla prasina* (Boie, 1827) or *A. mycterizans* (Linnaeus, 1758) in all aspects of morphology.

They were also re-checked for morphological divergences and/or any obvious biogeographical barriers separating the populations.

Disjunct distributions were checked for absences caused by non-collection versus absences of collection caused by absence of specimens.

However an important feature checked was sea barriers including at times of glacial maxima.

Noting the many thousands of years of human activities in the region, possibilities of translocation of specimens could not be discounted and was factored in the assessment, as was the ever-present issue of specimens rafting between islands.

Added to this was an assessment of climate oscillations between glacial and interglacial periods, including impacts on vegetations, drainages and habitats overall, to assess the potential creation of migratory pathways for the relevant putative species, be this along a coastal strip, through elevated habitats or across what are presently intensively farmed valley areas.

Also assessed were habitat constraints preceding human activities over the past 5K years as well as the interplay of other species including similar competing forms, including those from the same or other closely related genera.

Specimens inspected included dead and live specimens as well as images with good locality data including photo sharing sites online like “Inaturalist”, “Twitter” (AKA “X”), “Flickr”, “Facebook” and “Instagram”.

A sweep of the published literature and museum databases, photo sharing sites and the like was done to properly ascertain relevant distributions of all known populations of the six putative species and all that is currently known about them in terms of morphology, genetics, distribution and so on.

References relevant to the taxonomic and nomenclatural decisions herein included Anderson (1971), Ao *et al.* (2004), Badli-Sham *et al*. (2019), Basfore *et al.* (2024),Boie (1827), Bong Heang (1987), Boulenger (1897), Brown *et al*. (1996, 2012, 2013), Bulian (2000), Chan-ard *et al.* (1999, 2015), Cox *et al*. (1998, 2012), Das (2012), Das and Chaturvedi (1998), Dau *et al*. (2024), David and Vogel (1996), De Lang (2011, 2012, 2013, 2017), De Lang and Vogel (2005), De Rooij (1917), Deuve (1961), Dowling and Jenner (12988), Dunbar and Dunbar (2015), Evans (1905), Ferner *et al*. (2000), Fischer (1886), Gaulke (1994a-b, 1999, 2001, 2011, 2019), Gawor *et al.* (2016), Geissler *et al*. (2011, 2019), Glässer-Trobisch and Trobisch (2023), Gojo-Cruz and Afuang (2018), Gojo-Cruz *et al*. (2018), Goldberg and Grismer (2015), Grismer (2011), Grismer *et al*. (2008a-b, 2010), Grossmann and Tillack (2001a-b), Günther (1859), Harrington *et al.* (2018), Hecht *et al*. (2013), Herlambang *et al.* (2022), Hien *et al*. (2001), Hnízdo (2000), Hnizdo and Krug (1997), Hörold (2020), How and Kitchener (1997), How *et al*. (1996), Indahsari *et al.* (2020), Janzen (2022), Karin *et al*. (2023), Koch (2012), Kopstein (1938), Kurniawan *et al*. (2022), Lazell (2002), Lazell and Lu (1990), Lenz (2012), Leo and Supriatna (2020), Leo *et al.* (2020), Leviton (1968), Leviton *et al*. (2018), Lidth De Juede (1922), Lim and Ng (1999), Linnaeus (1758), Malkmus *et al*. (2002), Manthey and Grossmann (1997), Mertens (1930), Merz (2020), Milto (2025), Milto and Lukin (2020), Miralles and David (2010), Mirza *et al*. (2024), Mohapatra *et al*. (2017), Nguyen et al. (2009), Peters (1867), Purkayastha *et al*. (2021), Reilly *et al*. (2019), Ride *et al*. (1999), Savage and Oliver (1957), Sharma (2004), Shaw (1802), Smith (1993), Smith (1943), Stejneger (1933), Stuebing and Inger (1999, 2014), Supsup *et al*. (2017), Tang *et al*. (2013), Taylor (1965), Teynie *et al.* (2010), Trutnau (1986), Wall (1906, 1919, 1921), Wanger *et al.* (2011), Weinell *et al.* (2019), Whitaker and Captain (2004), Woning (2004), Zhao (2006), Zhao and Adler (1993), and sources cited therein.

Online references relied upon were most recently checked as correct in terms of content cited on 6 May 2025.

RESULTS

The six newly identified species as listed in the abstract and introduction were confirmed as valid identifiable taxa.

They are therefore formally named as new species herein.

All are believed to be at least 1.5 MYA divergent from nearest relatives, which are usually allopatrically distributed and with no evidence of cross breeding or introgression in the relevant geological past, including times of recent glacial maxima.

Lowland areas, now inundated by shallow seas are believed to have mainly consisted of unsuitable habitat for species in the *A. prasina* complex.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

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

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

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (see Ride *et al.* 1999 and ICZN 2012).

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 6 May 2025, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

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

This includes the descriptions of the snakes not including pre-sloughing snakes, which are often significantly different to the usual colouration for the specimen or species, being usually more whitish or dull.

Note that there is ordinarily some sexual dimorphism between adults of species within the relevant taxa and colour changes from young to adult.

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

The “version of record” is the printed version and not pdf version. Both are identical in all materially relevant ways except for the fact that the images in the printed version may be in black and white, as opposed to colour as seen in the pdf version.

The people who assisted with provision of photos and other materials used within this paper or for research by me are also thanked for their assistances, for which they sought nothing in return.

The use of provocative and interesting etymologies is deliberate and designed to further public interest in the relevant species, which will aid conservation outcomes and/or to highlight other matters of public importance that may otherwise be overlooked.

The conservation status of the newly named taxa is thought to be stable and secure as can be in the modern world, but this is by no means certain.

Immediate recognition of and monitoring of the new taxa will be the best way to secure them into the future. Each are significant units for conservation management.

The relevant comments of Hoser (2015a-f, 2019a-b) and sources cited therein apply.

AHAETULLA PALAWANENSIS SP. NOV.

LSIDurn:lsid:zoobank.org:act:0ECCC8A5-29D9-4570-A737-B96A9DFC7A5C

Holotype: A preserved specimen at the California Academy of Sciences, San Francisco, California, USA, specimen number CAS SUR 28679 collected from Puerto Princesa City, Palawan Island, Palawan Province, Philippines, Asia, Latitude 9.748881 N., Longitude 118.626000 E.

This facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at The California Academy of Sciences, San Francisco, California, USA, specimen number CAS HERP 15809 collected from Puerto Princesa City, Palawan Island, Palawan Province, Philippines, Asia, Latitude 9.748881 N., Longitude 118.626000 E., and 2/ A preserved specimen at the USA National Museum of Natural History, Smithsonian Institution, Washington, DC, USA, specimen number USNM Amphibians and Reptiles 39957 collected from Nakoda Bay, Palawan Island, Palawan Province, Philippines, Asia.

Diagnosis: *Ahaetulla palawanensis sp. nov*. is readily separated from all other species in the *Ahaetulla prasina* (Boie, 1827) or *A. mycterizans* (Linnaeus, 1758) complex by the fact that the supraocular has a uniformly curved edge adjoining the frontal shield. In turn the frontal is wide at the anterior end and curves evenly inwards on either edge as one goes to the distal part of the scale. The frontal shield is also raised noticeably on the outer edges. In most of the other species, the supraocular has an edge that is not evenly curved, but rather zig-zags and expands slightly in an outwards direction as it moves posteriorly. This reflects in the shape of the adjoining frontal shield that is bulbous at the anterior end, narrows sharply at the lower edge of the circular area and is extended in a panhandle shape distally. The outer edges of the frontal is also not noticeably raised in the other species.

The tongue is yellowish in colour.

Exceptional to the preceding is *A. niceone sp. nov*. which has an obviously triangular-shaped frontal shield that is also relatively flat edged at the anterior edge. *A. niceone sp. nov*. is also defined by having an aqua blue tongue.

The taxon *Ahaetulla palawanensis sp. nov*. is also defined as follows:

Head narrow, elongate; snout projecting; rostral small, barely visible above; anterior edge of nasals also visible above; internasals much longer than wide, either in contact with second labial or not so; prefrontal about twice as long as wide, posterior edges rounding, overlapping frontal; frontal elongate, much narrowed posteriorly, but not bulbous at the anterior part, shorter than its distance to end of nose; supraoculars are very large, nearly as wide as long, wider than the frontal; parietals long, somewhat longer than frontal; nasal three times as long as wide; 3 and 4 very small loreals; 1 large, irregular preocular; 2 postoculars, upper larger; temporals 2+3+3, third upper largest; 9 upper labials, fourth, fifth, and sixth entering the eye, seventh largest, ninth much elongate; mental small, as wide as the rostral; 8 or 9 lower labials, first 4 in contact with first pair of chin shields which are very much shorter than second pair; latter bordered by 2 labials; eye large, pupil horizontal; a deep elongate depression from eye to nostril; scales in 15 rows, the median somewhat enlarged toward posterior part of body; scales on back above the anal region are keeled; 209 to 222 ventrals, each with indistinct keels laterally; 174 to 202 subcaudals; anal divided.

Dorsally green in colour, most brilliant anteriorly; skin between the scales is a lavender colour with the skin whitish between alternating transverse rows; belly is grayish or greenish, with two distinct cream stripes running the entire length of the body on the outer side of the ventrals; The tongue is yellowish in colour (modified from Taylor, 1922 and most is in line with the other species in the complex).

Members of the *Ahaetulla prasina* (Boie, 1827) complex (excluding those in the *A. mycterizans* (Linnaeus, 1758) complex) are separated from all other members of the genus *Ahaetulla* Link, 1807, type species being *Coluber mycterizans* Linnaeus, 1758 by the following characters: Snout without an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales; 203-235 ventrals and 168-207 subcaudals; Anal divided (or extremely rarely entire).

The species in the *A. mycterizans* (Linnaeus, 1758) complex are in turn separated by having an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales, no loreal scale and a single anal plate.

Ahaetulla palawanensis sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/220547471

and

https://www.inaturalist.org/observations/191272399

and

https://www.inaturalist.org/observations/190765909

Distribution: *Ahaetulla palawanensis sp. nov*. is confined to Palawan Island in the Palawan Province, Philippines, including immediately adjacent islets.

Etymology: The species name *Ahaetulla palawanensis sp. nov*. is a Latinised identifier of where this taxon comes from.

AHAETULLA NICEONE SP. NOV.

LSIDurn:lsid:zoobank.org:act:1FB95C7D-1F74-46A8-A5F9-B770B5E8DD9D

Holotype: A preserved female specimen at the Museum of Vertebrate Zoology, University of California, Berkeley, California, USA, specimen number MVZ:Herp:253493 (snout-vent length=712 mm; tail length=443 mm; weight=27 g) collected from Desa Manembo, Kecamatan Passi, Kabupaten Bolaang Mongondow, Propinsi Sulawesi Utara, Sulawesi Island, Indonesia at 624 m ASL, Latitude .78688 N., Longitude 124.35941 E.

This facility allows access to its holdings.

Paratype: A preserved specimen at the Museum of Vertebrate Zoology, University of California, Berkeley, California, USA, specimen number MVZ:Herp:253507 (snout-vent length=813 mm; tail length=453 mm; weight=38.50 g) collected from Tangkoko Nature Reserve, Kabupaten Minahasa, Propinsi Sulawesi Utara, Indonesia at 29 m ASL, Latitude 1.56675 N., Longitude 125.16637 E.

Diagnosis: *Ahaetulla niceone sp. nov*. is readily separated from all other species in the *Ahaetulla prasina* (Boie, 1827) or *A. mycterizans* (Linnaeus, 1758) complex by the fact that the frontal is obviously triangular-shaped, with a relatively flat line at the anterior edge; the outer edge of the supraocular is also relatively straight in line, expanding out from the anterior to the posterior and the tongue is aqua-blue in colour.

Ahaetulla palawanensis sp. nov. of Palawan in the Philippines is readily separated from all other species in the *Ahaetulla prasina* (Boie, 1827) or *A. mycterizans* (Linnaeus, 1758) complex except for *Ahaetulla niceone sp. nov*. by the fact that the supraocular has a uniformly curved edge adjoining the frontal shield. In turn the frontal is wide at the anterior end and curves evenly inwards on either edge as one goes to the distal part of the scale. The frontal shield is also raised noticeably on the outer edges. In all of the other species, the supraocular has an edge that is not evenly curved, but rather zig-zags and expands slightly in an outwards direction as it moves posteriorly. This reflects in the shape of the adjoining frontal shield that is bulbous at the anterior end, narrows sharply at the lower edge of the circular area and is extended in a panhandle shape distally. The outer edges of the frontal is also not noticeably raised.

The taxon *Ahaetulla niceone sp. nov*. is also defined as follows:

Head narrow, elongate; snout projecting; rostral small, barely

visible above; anterior edge of nasals also visible above; internasals much longer than wide, either in contact with second labial or not so; prefrontal about twice as long as wide, posterior edges rounding, overlapping frontal; frontal triangular in shape, the apex being posteriorly, and not bulbous at the anterior part, shorter than its distance to end of nose; supraoculars are very large, nearly as wide as long, wider than the frontal; parietals long, somewhat longer than frontal; nasal three times as long as wide; 3 and 4 very small loreals; 1 large, irregular preocular; 2 postoculars, upper larger; temporals 2+3+3, third upper largest; 9 upper labials, fourth, fifth, and sixth entering the eye, seventh largest, ninth much elongate; mental small, as wide as the rostral; 8 or 9 lower labials, first 4 in contact with first pair of chin shields which are very much shorter than second pair; latter bordered by 2 labials; eye large, pupil horizontal; a deep elongate depression from eye to nostril; scales in 15 rows, the median somewhat enlarged toward posterior part of body; scales on back above the anal region are keeled; 197 to 224 ventrals, each with indistinct keels laterally; 156-192 subcaudals; anal divided.

Dorsally green in colour, most brilliant anteriorly; skin between the scales a purplish to reddish-orange with the skin whitish between alternating transverse rows; belly is grayish or greenish, with two distinct cream or yellow stripes running the entire length of the body on the outer side of the ventrals, this line being broken at the edges of each scale; the tongue is aqua blue (general description was modified from Taylor, 1922 and altered accordingly and is mainly in line with the other species in the complex).

Specimens in the *Ahaetulla prasina* (Boie, 1827) complex from the nearby Philippines Islands are readily separated from *Ahaetulla niceone sp. nov*. by their bright yellow tongue.

Members of the *Ahaetulla prasina* (Boie, 1827) complex (excluding those in the *A. mycterizans* (Linnaeus, 1758) complex) are separated from all other members of the genus *Ahaetulla* Link, 1807, type species being *Coluber mycterizans* Linnaeus, 1758 by the following characters: Snout without an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales; 203-235 ventrals and 168-207 subcaudals; Anal divided (rarely entire).

The species in the *A. mycterizans* (Linnaeus, 1758) complex are in turn separated by having an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales, no loreal scale and a single anal plate.

Ahaetulla niceone sp. nov. is depicted in life online at:

https://www.alamy.com/vine-snake-ahaetulla-prasina-from-tomohon-north-sulawesi-image184076435.html

and

https://blog.mongabay.com/2011/02/06/photos-green-vine-snake/

and

https://www.inaturalist.org/observations/242687090

and

https://www.inaturalist.org/observations/246753853

Distribution: *Ahaetulla niceone sp. nov*. is a taxon from Sulawesi, Indonesia, including immediately adjacent islets as well as Kepulauan Sangihe, Sulawesi Utara, Indonesia.

Specimens in the *Ahaetulla prasina* (Boie, 1827) species complex from the nearby Philippines are readily separated from *Ahaetulla niceone sp. nov*. by their bright yellow tongue.

Etymology: The species name *Ahaetulla niceone sp. nov*. is a straight take of the words “nice one” which accurately describes the amazing appearance of these snakes.

AHAETULLA SCHMICK SP. NOV.

LSIDurn:lsid:zoobank.org:act:C38D9005-E1D4-4F37-BB68-459DF72E86A6

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number WAM REPT R98331 collected from Kuta, Lombok Island, West Nusa Tenggara, Indonesia, Latitude -8.916667 S., Longitude 116.283333 E.

This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Louisiana State University Museum of Natural Science, Louisiana, USA, LSUMZ Herps Collection, specimen number LSUMZ Herps 81718 collected from Desa Suranadi, near Pura Suranadi, Kecematan Narmada, Desa Suranadi, Kabupaten Lombok Barat, Lombok Island, Indonesia.

Diagnosis: *Ahaetulla schmick sp. nov.* of Lombok and West Nusa Tengarra is similar in most respects to the type form of *A. mycterizans* (Linnaeus, 1758), being that from central Java but is separated from that taxon (in females) by its lower ventral count (under 185, vs over 190), 15:15:13 dorsal scale rows, versus 15:16:13 and more than 160 subcaudals, versus less than 140, snout is 1.9 times the diameter of the eye, versus 1.8 times; only the tip of the snout has white, versus most of snout white and a yellowish-brown tongue, versus beige/brown tongue.

The morphologically similar species *Ahaetulla bagus sp. nov.* of Sarawak, Borneo is separated from the two preceding species by having a light green anterior snout rather than whitish or whitish tipped as well as semi-distinct darker green spotting on the back of the head.

The three preceding species, namely *A. mycterizans*, *A. schmick sp. nov.* and *A. bagus sp. nov.* are separated from all other species in the *Ahaetulla prasina* (Boie, 1827) complex by the fact that the loreal scale is in contact with the internasal scale, while that of *A. prasina* complex species is not; anal is entire, versus usually divided in the *A. prasina* complex; there is a well-defined unbroken white line along the outer margin of the ventrals, versus not so in the *A. prasina* complex; upper surface of the snout is convex (versus flat or depressed in the *A. prasina* complex); and the snout is less than twice the diameter of the eye, versus more so in the *A. prasina* complex.

Members of the *Ahaetulla prasina* (Boie, 1827) complex (excluding those in the *A. mycterizans* (Linnaeus, 1758) complex) are separated from all other members of the genus *Ahaetulla* Link, 1807, type species being *Coluber mycterizans* Linnaeus, 1758 by the following characters: Snout without an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales; 203-235 ventrals and 168-207 subcaudals; Anal divided (rarely entire).

The species in the *A. mycterizans* (Linnaeus, 1758) complex are in turn separated by having an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales, no loreal scale and a single anal plate.

Ahaetulla schmick sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/100482941

and

https://www.inaturalist.org/observations/65175599

and

https://www.inaturalist.org/observations/194192207

and

https://www.inaturalist.org/observations/148357585

Distribution: *Ahaetulla schmick sp. nov.* is a taxon confined to Lombok and West Nusa Tengarra, Indonesia, being east of Wallace’s line.

Etymology: The word Schmick means Smart, stylish and/or excellent, being a reflection of the appearance of this snake and so is an apt scientific nomen.

AHAETULLA BAGUS SP. NOV.

LSIDurn:lsid:zoobank.org:act:1274836F-200B-4EA1-8A96-8A90F8B8D47A

Holotype: A preserved specimen at the Field Museum of Natural History (FMNH), Chicago, Illinois, USA, specimen number FMNH Amphibians and Reptiles 269042 collected from Bintulu Division, Sarawak, Borneo, Malaysia.

This facility allows access to its holdings.

Diagnosis: *Ahaetulla schmick sp. nov.* of Lombok and West

Nusa Tengarra is similar in most respects to the type form of *A. mycterizans* (Linnaeus, 1758), being that from central Java but is separated from that taxon (in females) by its lower ventral count (under 185, vs over 190), 15:15:13 dorsal scale rows, versus 15:16:13 and more than 160 subcaudals, versus less than 140, snout is 1.9 times the diameter of the eye, versus 1.8 times; only the tip of the snout has white, versus most of snout white and a yellowish-brown tongue, versus beige/brown tongue.

The morphologically similar species *Ahaetulla bagus sp. nov.* of Sarawak, Borneo is separated from the two preceding species by having a light green anterior snout rather than whitish or whitish tipped as well as semi-distinct darker green spotting on the back of the head.

The three preceding species, namely *A. mycterizans*, *A. schmick sp. nov.* and *A. bagus sp. nov.* are separated from all other species in the *Ahaetulla prasina* (Boie, 1827) complex by the fact that the loreal scale is in contact with the internasal scale, while that of *A. prasina* complex species is not; anal is entire, versus usually divided in the *A. prasina* complex; there is a well-defined unbroken white line along the outer margin of the ventrals, versus not so in the *A. prasina* complex; upper surface of the snout is convex (versus flat or depressed in the *A. prasina* complex); and the snout is less than twice the diameter of the eye, versus more so in the *A. prasina* complex.

Members of the *Ahaetulla prasina* (Boie, 1827) complex (excluding those in the *A. mycterizans* (Linnaeus, 1758) complex) are separated from all other members of the genus *Ahaetulla* Link, 1807, type species being *Coluber mycterizans* Linnaeus, 1758 by the following characters: Snout without an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales; 203-235 ventrals and 168-207 subcaudals; Anal divided (rarely entire).

The species in the *A. mycterizans* (Linnaeus, 1758) complex are in turn separated by having an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales, no loreal scale and a single anal plate.

Ahaetulla bagus sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/270171681

and

https://www.inaturalist.org/observations/254671855

and

https://www.inaturalist.org/observations/230058581

Distribution: *Ahaetulla bagus sp. nov*. is presently only known from Sarawak, Malaysia (Borneo), but may occur elsewhere on the island. It appears to be locally common.

Etymology: The word “Bagus” means “nice” in Indonesian and is a fitting description for the appearance of this species.

AHAETULLA AAH SP. NOV.

LSIDurn:lsid:zoobank.org:act:88076A8D-F8CD-424A-B0F1-0B08180D923E

Holotype: A preserved specimen at the Museum of Vertebrate Zoology, Herp Collection, University of California, Berkeley, California, USA, specimen number MVZ:Herp:270142 collected from Cagar Alam Rimbo Panti, Kabupaten Pasaman, Propinsi Sumatera Barat, Sumatra Island, Indonesia, at 509 m ASL, Latitude .35136 N., Longitude 100.04317 E.

This facility allows access to its holdings.

Paratype: A preserved specimen at the Museum of Vertebrate Zoology, Herp Collection, University of California, Berkeley, California, USA, specimen number MVZ:Herp:270143 collected from Cagar Alam Rimbo Panti, Kabupaten Pasaman, Propinsi Sumatera Barat, Sumatra Island, Indonesia, at 509 m ASL, Latitude .35136 N., Longitude 100.04317 E.

Diagnosis: *Ahaetulla aah sp. nov.* is readily separated from all other species in the *Ahaetulla prasina* (Boie, 1827) complex by the following character combination (both sexes), 213-228 ventrals, 178-190 subcaudals, divided anal, no white lines or markings on scales of the lower flank or near venter and a tongue that is mainly white, but blue on the tip.

The taxon *Ahaetulla aah sp. nov*. is also defined as follows:

Head narrow, elongate; snout projecting; rostral small, barely visible above; anterior edge of nasals also visible above; internasals much longer than wide, either in contact with second labial or not so; prefrontal about twice as long as wide, posterior edges rounding, overlapping frontal; frontal itself is bulbous at the anterior end with a well-defined panhandle at the posterior part this having a well-rounded rear edge, being shorter than its distance to end of nose; supraoculars are very large, nearly as wide as long, wider than the frontal; parietals long, somewhat longer than frontal; nasal three times as long as wide; 3 and 4 very small loreals; 1 large, irregular preocular; 2 postoculars, upper larger; temporals 2+3+3, third upper largest; 9 upper labials, fourth, fifth, and sixth entering the eye, seventh largest, ninth much elongate; mental small, as wide as the rostral; 8 or 9 lower labials, first 4 in contact with first pair of chin shields which are very much shorter than second pair; latter bordered by 2 labials; eye large, pupil horizontal; a deep elongate depression from eye to nostril; scales in 15 rows, the median somewhat enlarged toward posterior part of body; scales on back above the anal region are keeled; 197 to 224 ventrals, each with indistinct keels laterally; 156-192 subcaudals; anal divided.

Dorsally green in colour, most brilliant anteriorly; skin between the scales a purplish to reddish-orange with the skin whitish between alternating transverse rows; belly is grayish or greenish, without two distinct cream or yellow stripes running the entire length of the body on the outer side of the ventrals, this line being broken at the edges of each scale; the tongue is mainly white, but a dark blue at the very tip (general description was modified from Taylor, 1922 and altered accordingly and is mainly in line with the other species in the complex).

Members of the *Ahaetulla prasina* (Boie, 1827) complex (excluding those in the *A. mycterizans* (Linnaeus, 1758) complex) are separated from all other members of the genus *Ahaetulla* Link, 1807, type species being *Coluber mycterizans* Linnaeus, 1758 by the following characters: Snout without an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales; 203-235 ventrals and 168-207 subcaudals; Anal divided (rarely entire).

The species in the *A. mycterizans* (Linnaeus, 1758) complex are in turn separated by having an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales, no loreal scale and a single anal plate.

Ahaetulla aah sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/7775113

and

https://www.inaturalist.org/observations/3806463

and

https://www.inaturalist.org/observations/127808337

Distribution: *Ahaetulla aah sp. nov*. is a taxon from west and north Sumatra, Indonesia, mainly of the hilly areas on the western side of the island.

Etymology: When a herpetologist sees the beauty of this snake for the first time, they exclaim “aah” and hence the species name etymology.

AHAETULLA DEP SP. NOV.

LSIDurn:lsid:zoobank.org:act:A569F588-B509-40F4-B796-A88DC232925D

Holotype: A preserved specimen at the Louisiana State University, Museum of Natural Science, Baton Rouge, Louisiana, USA, herpetology collection, specimen number LSUHC8586 collected from Vietnam.

This facility allows access to its holdings.

Diagnosis: *Ahaetulla dep sp. nov.* is readily separated from all other species in the *Ahaetulla prasina* (Boie, 1827) complex by the following combination of characters: Dorsal colouration is essentially yellow, orange, brown or grey as opposed to green. The frontal shield is particularly large and wide, with the anterior part being nearly as wide as the top of the head, this also

meaning that the size of the supraoculars, are far smaller than seen in all other species in the complex.

The taxon *Ahaetulla dep sp. nov*. is also defined as follows:

Head narrow, elongate; snout projecting; rostral small, barely visible above; anterior edge of nasals also visible above; internasals much longer than wide, either in contact with second labial or not so; prefrontal about twice as long as wide, posterior edges rounding, overlapping frontal; frontal itself is very wide but not bulbous as such at the anterior end with a poorly-defined and widened panhandle at the posterior part this having a somewhat triangular lower edge, being shorter than its distance to end of nose; supraoculars are very large, nearly as wide as long, wider than the frontal; parietals long, somewhat longer than frontal; nasal three times as long as wide; 3 and 4 very small loreals; 1 large, irregular preocular; 2 postoculars, upper larger; temporals 2+3+3, third upper largest; 9 upper labials, fourth, fifth, and sixth entering the eye, seventh largest, ninth much elongate; mental small, as wide as the rostral; 8 or 9 lower labials, first 4 in contact with first pair of chin shields which are very much shorter than second pair; latter bordered by 2 labials; eye large, pupil horizontal; a deep elongate depression from eye to nostril; scales in 15 rows, the median somewhat enlarged toward posterior part of body; scales on back above the anal region are keeled; 200 to 228 ventrals, each with indistinct keels laterally; 154-198 subcaudals; anal divided.

Dorsally essentially yellow, orange, brown or grey as opposed to green; skin between the scales a purplish to reddish-orange or greyish-white with the skin whitish between alternating transverse rows; belly is grayish or greenish, with two semi-distinct cream or yellow stripes running the entire length of the body on the outer side of the ventrals, this line being broken at the edges of each scale; the tongue is mainly white, but a dark blue at the very tip (general description was modified from Taylor, 1922 and altered accordingly and is mainly in line with the other species in the complex).

Members of the *Ahaetulla prasina* (Boie, 1827) complex (excluding those in the *A. mycterizans* (Linnaeus, 1758) complex) are separated from all other members of the genus *Ahaetulla* Link, 1807, type species being *Coluber mycterizans* Linnaeus, 1758 by the following characters: Snout without an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales; 203-235 ventrals and 168-207 subcaudals; Anal divided (rarely entire).

The species in the *A. mycterizans* (Linnaeus, 1758) complex are in turn separated by having an obvious dermal appendage formed by one enlarged rostral scale or a series of smaller scales, no loreal scale and a single anal plate.

Ahaetulla dep sp. nov. is depicted in life online at:

https://www.inaturalist.org/observations/257503082

and

https://www.inaturalist.org/observations/68743718

and

https://www.inaturalist.org/observations/160903133

and

https://www.inaturalist.org/observations/268898060

and

https://www.inaturalist.org/observations/193675833

and

https://www.inaturalist.org/observations/193587367

Distribution: South Vietnam only.

Etymology: The word “dep” in Vietnamese means “nice”, befitting this snake.

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CONFLICT OF INTEREST

None.

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A new species and new subspecies of Viper from the Middle-east.

LSIDURN:LSID:ZOOBANK.ORG:PUB:2F5025AD-28B7-4AE5-AE3E-4A30F79CBB31

RAYMOND T. HOSER
LSID urn:lsid:zoobank.org:author:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
Phone: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au
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ABSTRACT

In spite of numerous taxonomic works on the Viperidae by numerous herpetologists over the past 200 years, unnamed forms have been formally named as recently as in the past 20 years.

Scrutiny of populations in the Levant by myself flagged potentially unnamed forms, leading to scrutiny of both *Montivipera bornmuelleri* (Werner, 1898) and *Maxhoservipera palaestinae* (Werner 1938) across their known ranges.

The Mount Hermon population of putative *Montivepera bornmuelleri* is divergent morphologically to the Mount Lebanon, type form for that species. This morphological divergence is consistent and evidence of a separation measured in millions of years (probably just under one) as opposed to 20 thousand years or less as would be the case if the populations met at the last glacial maximum.

The Litani River basin is a known biogeographical barrier between the Mount Lebanon and Anti Lebanon ranges and on the basis of this obvious separation, the Mount Hermon population is formally named herein as a new species.

It was determined that the recently identified Turkish population of *Maxhoservipera palaestinae* was morphologically divergent from the nominate form of *Maxhoservipera palaestinae*, type locality of Haifa, Israel and in the absence of firm evidence of allopatry or isolation I determined that it should be formally identified as a new subspecies.

Both taxa are formally named in accordance with *the International Code of Zoological Nomenclature* (Ride *et al.* 1999) herein as part of the permanent scientific record.

Keywords: Taxonomy; nomenclature; viper; Lebanon; Israel; Syria; *Maxhoservipera*; *Daboia*; *Montivipera*; new species; *shalomsalam*; *yes*.

INTRODUCTION

In spite of numerous taxonomic works on the Viperidae by numerous herpetologists on a regular basis over the past 200 years, unnamed forms of true vipers have been formally named as recently as in the past 20 years (e.g. Hoser, 2013a-b, 2015g, 2016, 2022, 2023).

Scrutiny of populations in the Levant by myself flagged potentially unnamed forms, leading to scrutiny of both *Montivipera bornmuelleri* Werner, 1898 and *Maxhoservipera palaestinae* Werner 1938 across their known ranges.

The task and questions were quite simple.

1/ Are all putative *Montivipera bornmuelleri* wholly conspecific?

2/ Are all putative *Maxhoservipera palaestinae* wholly conspecific?

Before explaining the process involved in dividing the relevant taxa or at least attempting to, it is worth mentioning the basis for the investigation.

Parallel studies of the family Typhlopidae by myself had brought Levant species into scrutiny, including putative "*Typhlops syriacus* Jan, 1864", regarded by most authors since as synonymous with *Lenhosertyphlops vermicularis* (Merrem, 1820).

Molecular and morphological analysis, including the works of Kornilios *et al.* (2011, 2012 and 2020) effectively showed that putative "*Typhlops syriacus* Jan, 1864" included five actual species as outlined in a separate paper published by myself in 2025.

The relevant biogeographical barriers for that taxon included low-lying flattish areas such as the Litani River basin, including the Bekaa Valley in Lebanon.

The distribution of putative *Montivipera bornmuelleri* Werner, 1898 was also split by this biogeographical barrier (populations in high country on either side) and so it came onto the radar as perhaps including more than one species, so it was properly investigated.

Before going further, it was immediately ascertained that the species as recognised had only been named once, so if one population was separate to the other, it would in effect be an unnamed taxon.

In terms of the species *Maxhoservipera palaestinae* the flag was raised when a specimen was encountered in southern Turkey, quite some distance from the known range of the species, that until then only extended to mid-west Syria on the coast.

That specimen appeared morphologically divergent and so the entire species as recognised was placed under investigation.

MATERIALS AND METHODS

A multidisciplined approach was taken to resolve the two questions put.

These were:

Are all putative *Montivipera bornmuelleri* wholly conspecific?

As well as, are all putative *Maxhoservipera palaestinae* wholly conspecific?

Available specimens, papers and photos of the relevant putative species were inspected.

They were checked for differences between populations in all aspects of morphology.

They were checked for morphological divergences and/or any obvious biogeographical barriers separating the populations.

Disjunct distributions were checked for absences caused by non-collection versus absences of collection caused by absence of specimens.

Noting the many thousands of years of human activities in the region, possibilities of translocation of specimens could not be discounted and was factored in the assessment.

Distributions were also mapped against rock and soil types to see if these also affected the relevant taxa.

East Mediterranean Sea depths were assessed for the past 10 MYA as was the entire geological history of the region.

Added to this was an assessment of climate oscillations between glacial and interglacial periods, including impacts on vegetations, drainages and habitats overall, to assess the potential creation of migratory pathways for the relevant putative species, be this along a coastal strip, through elevated habitats or across what are presently intensively farmed valley areas.

Also assessed were habitat constraints preceding human activities over the past 5K years as well as the interplay of other species including similar competing forms, including those from the same or other closely related genera.

In terms of ascertaining the provenance of the type specimens of each putative species, it was necessary to investigate the political and social histories of the areas in order to confirm the general location of the relevant type material.

Specimens inspected included dead and live specimens as well as images with good locality data including photo sharing sites online like “Inaturalist”, “Twitter” (AKA “X”), “Flickr”, “Facebook” and “Instagram”.

A sweep of the published literature and museum databases, photo sharing sites and the like was done to properly ascertain relevant distributions of all known populations of the two putative species and all that is currently known about them in terms of morphology, genetics, distribution and so on.

References relevant to the taxonomic and nomenclatural decisions herein included Ahmadi *et al.* (2021, 2024), Akman *et al.* (2020), Boettger (1898), Disi *et al.* (2001), Gocmen *et al*. (2018), Failloux (2005), Gray (1845, 1849), Herrmann *et al.* (1992), Hoser (2012, 2013a-b, 2015g, 2016, 2022, 2023), Hraoui-Bloquet *et al.* (2002), ICZN 2012, Jan (1864), Kornilios (2017), Kornilios *et al.* (2011, 2012, 2020), Lenk *et al.* (2001), Mallow *et al.* (2003), Mertens (1952, 1967), Nilson and Andren (1984, 1985, 1986), Nilson *et al.* (1990), Obst (1983), Ride *et al.* (1999), Stümpel and Joger (2009), Thorpe *et al*. (2007), Volynchik (2001), Werner (1898, 1902, 1922, 1935, 1938, 1939), Werner (2016) and sources cited therein.

Online references relied upon were most recently checked as correct in terms of content cited on 17 May 2025.

RESULTS

That the extant populations of putative *Montivipera bornmuelleri* are geographically disjunct is beyond doubt.

The two populations are as follows:

The first is from the Mount Lebanon Ranges west of the Bekaa Valley and north of the Litani River in the south, wholly within Lebanon.

The second is in the Golan Heights/Mount Hermon area of the Anti-Lebanon Mountains being the highest part of these ranges.

Significantly, although the Litani River drainage and associated Bekaa Valley is narrowest between the Golan Heights/Mount Hermon area and the Mount Lebanon Ranges to the west, there is no evidence of these populations being joined at any recent time in the past few thousand years.

As mentioned earlier, putative “*Typhlops syriacus* Jan, 1864”, now within the genus *Lenhosertyphlops* Hoser, 2012 has been unable to traverse the Litani basin for about 1.2 MYA as detailed in the works of Kornilios *et al.* (2011, 2012 and 2020).

However, that this basin forms a barrier for one taxon that prefers elevated areas, does not preclude another species with a preference for elevated areas traversing this same basin.

As with “*Typhlops syriacus* Jan, 1864” and the competing floodplain species *Trioanotyphlops simoni* (Boettger, 1879) having a near mutually exclusive distribution in terms of one another, a similar investigation was undertaken with respect of putative *Montivipera bornmuelleri.*

In this case the mutually exclusive (as a rule) species was the mainly lower hill and lowland dwelling taxon *Maxhoservipera palaestinae.*

Molecular evidence has indicated that this taxon has been in the region for up to 10 MYA and has therefore long been in a state of competitive exclusion with putative *Montivipera bornmuelleri* and associated taxa, likely to have been in the region for half that time (see for example the papers cited in Hoser (2012) for *Maxhoservipera palaestinae* and Amadi *et al.* 2021 at Fig 1 for *Montivipera bornmuelleri*).

The distribution of the Golan Heights/Mount Hermon population of putative *Montivipera bornmuelleri* to the exclusion of other known locations in the Anti Lebanon Range, combined with the relatively narrow contact with the Mount Lebanon Range at this part of the Bekaa Valley implies that the Golan Heights/Mount Hermon population crossed that valley at this area.

To the south and west of Mount Hermon, *Maxhoservipera palaestinae* are common and putative *Montivipera bornmuelleri* is absent, further implying division of the two *Montivipera bornmuelleri* populations.

Significantly putative *Montivipera bornmuelleri* have not yet been collected in the parts of the Mount Lebanon Range adjacent to the Golan Heights/Mount Hermon area and it is likely they have not been there in the Holocene.

If the divergence of the two populations was recent, as in during the Holocene and as an artefact of the activities of an increasing human population, the two populations of putative *Montivipera bornmuelleri* would be similar.

Now to make it clear, known specimens of *Montivipera bornmuelleri* from the Mount Lebanon Range appear to be found east and north of Beirut, extending almost to the Syrian border, which in turn is an area of lowlands not suited to these vipers.

The coastal range of Syria, largely separated from both the Mount Lebanon Range and the Turkish ranges to the north by lowland zones has another viper species, being *Montivipera bulgardaghica* instead (Ahmadi *et al*. 2021).

Significantly *Montivipera bulgardaghica* (Nilson and Andren, 1985) extends to the Turkish ranges in the north and is genetically closer to *Montivipera albizona* (Nilson, Andren and Flardh, 1990) and *Montivipera wagneri* (Nilson and Andren, 1984) than to *Montivipera bornmuelleri* (Ahmadi *et al.* 2021).

Ahmadi *et al*. (2021) in their supplementary data found that the Golan Heights/Mount Hermon population diverged from that in the Mount Lebanon Range slightly under 1 MYA which normally would be treated as subspecies level divergence.

However, as both populations are allopatric, morphologically divergent and evolving separately as independent units I have chosen to formally describe the unnamed one as a new species.

The next problem to solve was which of these populations was in fact of the type form.

The type locality for "*Vipera bornmuelleri* Werner, 1898" was "Libanon" = Lebanon. In his original description he described a single type specimen from Lebanon and others from the west Syrian coastal range as one species making them a type series.

In 1922 Werner restricted the type locality to "Libanon" making the sole specimen he had described from Lebanon as his holotype and the type for the species "*Vipera bornmuelleri* Werner, 1898".

Werner's description implied that his specimen was of the Mount Lebanon Range form (based on his colour description that matched these fully), but a small percentage (my estimate is about 25%) of specimens from the Golan Heights/Mount Hermon area also match the configuration he described making it far from certain the provenance of his specimen based on his description.

However, this uncertainty was removed when I investigated the history of Lebanon in the relevant period that Werner published his description in 1898 and then restricted the type locality in 1922.

I the 1800's, what we now know as Lebanon was part of the Ottoman Empire, with vaguely defined borders encompassing the Mount Lebanon region and its surrounding areas, not extending beyond the Bekaa Valley, thereby meaning that the Golan Heights/Mount Hermon area could not have been where Werner's type specimen came from. The specific boundaries for modern Lebanon, which were extended westwards to encompass the west side of the Anti-Lebanon Range were not clearly established until after World War I, with the creation of Greater Lebanon under French mandate in 1920.

With it now established that Golan Heights/Mount Hermon area population of putative *Montivipera bornmuelleri* is the one without a formal name, I do within this paper formally name it as *Montivipera shalomsalam sp. nov.*.

Gocmen *et al.* (2018) detailed the first ever recorded specimen of *Maxhoservipera palaestinae* type locality of Haifa, Israel from Alahan village, Antakya district, Hatay province, southern Turkey, being a first record for that country and a range extension of about 103 km by road (Google maps) to the north of the previous northernmost locality which had been reported by them as the southern parts of Latakia, Syria.

Maxhoservipera palaestinae which are mainly found in the populated parts of Israel and southern Lebanon are very abundant where they occur. Records north of this area are patchy, but this may be an artefact of limited collection, especially in Syria and south Turkey.

Even if they are absent from large coastal tracts between southern Turkey and Israel now, it is likely that large swathes of suitable habitat was present along the entire west Mediterranean strip of land as recently as the last glacial maxima just 25 KYA.

If that was the case and populations were continuous as recently as then, there is no case for species-level recognition of the Turkish animals as being distinct from those of Israel.

However, a viewing of the images of the specimen published by Gocmen *et al.* (2018) raised an alert because it had traits not seen in any other specimens that I had seen, so a full review of the putative species was conducted.

The differences were consistent between the single specimen and the entire viewable (to me) population of the rest of the putative *Maxhoservipera palaestinae* species.

Those differences implied significant time and space divergence of the northern (Turkey) population and so in the absence of molecular data it is formally named herein as a new subspecies being *Maxhoservipera palaestinae yes subsp. nov.*.

The preceding facts also negated another possible explanation for the Turkish record of *Maxhoservipera palaestinae*, this being it was merely a recently translocated specimen from elsewhere (south).

If it were simply translocated from Israel or somewhere nearby, then it should match those animals exactly, which it did not.

As a rule, translocated snakes are usually of specific kinds (those that climb) and are mainly translocated to trade hubs as in the centres of cities and the like. The likelihood of a non-climber species being translocated to a relatively remote place is low.

I know this because I have been a government-licensed snake catcher in Australian cities for over 40 years and catch thousands of snakes.

Only a small percentage are translocated and as a rule they fit the profile just given.

Both taxa, namely *Montivipera shalomsalam sp. nov.*. and *Maxhoservipera palaestinae yes subsp. nov.* are formally named in accordance with *the International Code of Zoological Nomenclature* (Ride *et al.* 1999) herein as part of the permanent scientific record.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTIONS THAT FOLLOW

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

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

In terms of the following formal descriptions, spelling of names should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological Nomenclature as administered by the International Commission of Zoological Nomenclature (Ride *et al.* 1999 and ICZN 2012).

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 17 May 2025, unless otherwise stated and were accurate in terms of the context cited herein as of that date.

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

This includes the descriptions of the snakes not including pre-sloughing snakes, which are often significantly different to the usual colouration for the specimen or species, being usually more whitish or dull.

Note that there is ordinarily some sexual dimorphism between adults of species within the relevant viper taxa and colour changes from young to adult.

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

The "version of record" is the printed version and not pdf version. Both are identical in all materially relevant ways except for the fact that the images in the printed version may be in black and white, as opposed to colour as seen in the pdf version.

The people who assisted with provision of photos and other materials used within this paper or for research by me are also thanked for their assistances, for which they sought nothing in return.

The use of provocative and interesting etymologies is deliberate and designed to further public interest in the relevant species, which will aid conservation outcomes and/or to highlight other matters of public importance that may otherwise be overlooked.

The conservation status of both newly named taxa is thought to be stable and secure as can be in the modern world, but this is by no means certain.

Immediate recognition of and monitoring of the new taxa will be

the best way to secure them into the future. Each are significant units for conservation management.

The relevant comments of Hoser (2015a-f, 2019a-b) and sources cited therein apply.

MONTIVIPERA SHALOMSALAM SP. NOV.

LSIDurn:lsid:zoobank.org:act:FAA16ED4-E9A9-4FB3-9CAA-E02C1BBCE934

Holotype: A preserved specimen at the Steinhardt Museum of Natural History, Tel Aviv University, Israel, specimen number SMNHTAU-R.20768 collected from Mount Hermon, Israel, Latitude -33.3060 S., Longitude 35.7856 N.

Paratypes: 13 preserved specimens at the Steinhardt Museum of Natural History, Tel Aviv University, Israel, specimen numbers SMNHTAU-R.7082, SMNHTAU-R.8575, SMNHTAU-R.10559, SMNHTAU-R.10781, SMNHTAU-R.13507, SMNHTAU-R.13611, SMNHTAU-R.16644, SMNHTAU-R.17388, SMNHTAU-R.19211, SMNHTAU-R.19512, SMNHTAU-R.19513, SMNHTAU-R.20252 and SMNHTAU-R.20253, all collected from Mount Hermon, Israel.

Diagnosis: Until now *Montivipera shalomsalam sp. nov.* confined to the Mount Hermon region of the Anti-Lebanon Mountains has been treated as a population of *Montivipera bornmuelleri* (Werner, 1898) type locality "Libanon", of the Mount Lebanon Ranges in Lebanon.

Montivipera bornmuelleri has terra typica restricta: Bcharré, Mount Liban, Lebanon (Mertens 1967).

M. shalomsalam sp. nov. is separated from *M. bornmuelleri* by the following combination of five characters:

1/ 4 chinshields versus six in *M. bornmuelleri*,

2/ 8 interocular rows between the supraoculars versus 7 interocular rows between the supraoculars in *M. bornmuelleri*,

3/ 15-16 intercanthals, versus 13-14 in *M. bornmuelleri*,

4/ A lower canthal stripe that is of the same or nearly the same width anterior and posterior to the eye or faded anteriorly, versus a consistently bold and sharp edged, dark well-defined lower canthal stripe that is narrow and pointed anteriorly (near the eye) that obviously widens significantly triangularly posteriorly and,

5/ A dorsal colouration that is of semi distinct markings and blotches on the top and sides of the body in males and females versus sharp-edged, well-defined prominent markings and blotches on the top and sides of the body in all female and most male *M. bornmuelleri.*

The two preceding species are separated from all others in the *M. xanthina* (Gray, 1849) species group by having a much-reduced dorsal pattern. This pattern is split up into small irregular bars and blotches, normally between 47 and 64 on the body. In young specimens the pattern is more similar to that in the *M. Xanthina* (Gray, 1849) group of species as defined by Hoser (2016), while the central part of each dorsal blotch fades away during early growth, thus leaving only the dark edges of the blotches left. This results in an irregularly spotted or crossbanded pattern. Belly is finely dotted without dark blotches.

The snakes themselves are of small to medium size, often not exceeding 50 cm length in the wild, but can grow bigger.

Usually 23 midbody scale rows (rarely 21). Comparatively short tail with only 23 to 26 subcaudals in females and 28 to 31 in males, compared to more than 27 in female *M. xanthina* group species and between 30 and 37 in male *M. xanthina* group species.

Further they differ from *M. xanthina* group species in having a lower average ventral count (142 to 153, x = 147.8 in females compared to between 148 and 169 in female *M. xanthina* group species and around 161 in female *M. wagneri*; and 144 to 152, x = 148.4, in males compared to between 151 and 167 in male *M. xanthina* group species). *M. bornmuelleri* and *M. shalomsalam sp. nov.* often have three apicals in contact with the rostral while other *M. xanthina* group species have two. There are nine supralabials on each side, while other *M. xanthina* group species regularly have ten.

Exceptional within the *M. xanthina* group as outlined in the description above is *M. bulgardaghica* which in most respects is morphologically similar to *M. bornmuelleri* and *M. shalomsalam sp. nov.*.

M. bornmuelleri and *M. shalomsalam sp. nov.* differs from *M. bulgardaghica* (Nilson and Andren, 1985) by not having the upper preocular in contact with nasal, in having 21 or more scales in the first circumocular rings (counted together), and 25 or more in the second rings (21 or less in first and 25 or less in second circumocular rings in *M. bulgardaghica*), and in having 2 scale rows between eye and

supralabials (one in *M. bulgardaghica*).

M. bornmuelleri and *M. shalomsalam sp. nov.* are also separated from other *M. xanthina* group species including *M. bulgardaghica* by having a higher average number of intercanthals and inter-supraoculars (42-60 counted together, compared to between 30 and 50 in the latter taxa) (modified from Nilson and Andren 1986).

The subgenus *Apexvipera* Hoser, 2016 are separated from the nominate subgenus *Montivipera* Nilson *et al.* 1999 by having a complete circumocular ring of scales. By contrast in *Montivipera* this ring is divided by the supraocular.

Vipers in the genus *Montivipera* are separated from other true viper genera by the following unique suite of characters: Supraocular shield large, erectile, the free border angular, separated from the eye by a series of small scales; nostril in a single nasal, which is partially fused with the naso-rostral; 23 mid-body rows; 150-180 ventrals.

Snakes in the tribe Viperini, as defined by Hoser (2013), which includes *Montivipera*, are separated from all other true vipers by the following suite of characters: pupil is elliptical, adults of the snakes are generally small (subtribes Viperina and Montiviperina) to medium or large (subtribe Maxhoserviperina) and more or less stoutly built. The head is distinct from the neck, of triangular shape, and covered with small scales in many species, although some have a few small plates on top. The dorsal scales are strongly keeled, the anal plate is divided, as are the subcaudals. Importantly this group are defined by the characteristic zig-zag pattern or similar running down their back, more-or-less along the dorsal midbody line, this pattern sometimes becoming a series of blotches or spots running longitudinally along the body (as in the genus *Daboia*).

All are viviparous (live bearing). They are distributed in Eurasia and adjacent parts of North Africa.

Ahmadi *et al*. (2021) in their supplementary data found that the Golan Heights/Mount Hermon population of putative *M. bornmuelleri* diverged from that in the Mount Lebanon Range slightly under 1 MYA which normally would be treated as subspecies level divergence.

However, as both populations are allopatric, morphologically divergent and evolving separately as independent units I have chosen to formally describe the unnamed one from Mount Hermon as a new species.

Distribution: *Montivipera shalomsalam sp. nov.*.appears to be confined to the Mount Hermon and Golan Heights area in what is currently as of 2025 land controlled by Israel.

Etymology: The scientific name *Montivipera shalomsalam sp. nov.* is a name that is a direct take on the Hebrew and Arabic words for peace, a relevant concept for this part of the world in 2025.

MAXHOSERVIPERA PALAESTINAE YES SP. NOV.

LSIDurn:lsid:zoobank.org:act:C02D3D63-6992-47F5-8C49-6102E92E6619

Holotype: The adult specimen depicted in the 8 images in Fig. 2 on page 89 of the paper:

Gocmen, B., Karis, M., Ozmen, E. and Oguzi, M. A. 2018. First record of the Palestine Viper *Vipera palaestinae* (Serpentes: Viperidae) from Anatolia. *South Western Journal of Horticulture, Biology and Environment* 9(2):87-90.

The authors described the snake as male, but from the images it appears that the snake is female.

It was collected from Alahan village, Antakya District, Hatay, Turkey, Latitude 36.3319 N., Longitude 36.1840 E.

Diagnosis: *Maxhoservipera palaestinae yes subsp. nov.* is so far only known from the holotype specimen from southern Turkey and is believed to be an allopatric population of *Maxhoservipera palaestinae* (Werner, 1938) a species with a type locality of Haifa, Israel and generally confined to mainly Israel north of the arid zone, southern Lebanon and immediately adjacent parts of Syria, where records are best described as patchy.

M. palaestinae yes subsp. nov. is separated from the nominate form of *M. palaestinae* by differences in colouration, based on the sole available holotype.

M. palaestinae has a dorsum and near flanks consisting of well-defined sharp-edged blotches on a beige to grey background. The blotches themselves are blackish at the outer edges and sometimes bounded with white or white flecks. Overall, the dorsal colouration is bold.

By contrast *M. palaestinae yes subsp. nov.* has a dorsum in which the dorsal blotches are somewhat faded with reduced dark at the outer edges. Some of the side blotches are reduced to mere peppering on an otherwise lighter background. The side blotches are narrower, tending to be broken more by the light interspace areas and not obvious as compared to the bold and distinct side blotches in nominate *M. palaestinae.*

Except for under the head or neck, the venter of *M. palaestinae yes subsp. nov.* is wholly a salmon pink colour with scattered semi-distinct greyish flecks, but otherwise an even pink colour.

Pink bellies in nominate *M. palaestinae* are rare and when they are seen, there are invariably numerous white intrusions and spots on the pinkish belly.

The two preceding taxa comprise the entirety of the subgenus *Maxhoservipera* Hoser, 2012, within the genus *Maxhoservipera* Hoser, 2012.

The two preceding taxa are separated from the species within the other subgenus *Laidlawus* Hoser, 2012 by configuration of the blotch running to the eye. In these taxa it is of continuous thickness from the labial to the eye, narrowing slightly from the rear as one moves towards the eye.

By contrast, in the other two taxa *M. deserti* and *M. mauritanica* (being the subgenus *Laidlawus* Hoser, 2012) one has the blotch narrowing considerably as it meets the eye giving it a triangular appearance.

The diagnosis separating all *Maxhoservipera* Hoser, 2012 species from all other vipers is the following:

They are separated from all other vipers by the following suite of characters: generally large (average 70-90 cm total length as adults), never more than 150 cm total length as adults, of very thick-set viperine build (stout and heavy); and keeled dorsal scales, with the keels forming a series of ridges running longitudinally along the body; the lowest row of scales (before the ventrals) does not have keels, the tail is short; the head is large, thick and triangular in shape; vertically elliptical pupil in a distinct medium-sized eye, the body pattern usually being in a chain-like configuration, usually with darker diamonds along the spine and broken bands on the flanks, over a lighter ground-type colour; 10-12 supralabials with 3-4 rows of scales separating the supralabials from the eyes; 25-33 mid body rows, 140-180 ventrals, 40-50 all divided subcaudals, two pairs of chin shields, the front ones noticeably enlarged; separated from all other vipers except the Russell's viper group of species (Genus *Daboia* Shaw and Nodder, 1797 *sensu* Hoser 2012) by the presence of a dark blotch or stripe running vertically from the top of the mouth into the eye, although this may appear faded in large snakes; separated from the Russell's viper group by the less thick-set build of the Russell's viper group and the fact that the dark blotch running into the eye is considerably wider than the eye, as opposed to being roughly the same width. The Russell's viper group is further separated by its dorsal pattern which is not in the zig-zag configuration seen in this genus. The pattern in *Daboia* is a colour pattern consisting of a deep yellow, tan or brown ground colour, with three series of dark brown spots that run the length of its body. Each of these spots has a black ring around it, the outer border of which is intensified with a rim of white or yellow, but giving an impression of ovals, smooth circles or similar as opposed to the more typical viperine pattern. The dorsal spots, which usually number 23-30, may grow together, while the side spots may break apart.

Vipers are distinctive, usually thick-set snakes with a well-developed venom apparatus and large retractable fangs that fold into the mouth when not in use. The thick-set build relates to the ambush predator feeding plan on the snakes. They have large fangs used to hold prey when bitten and a heavy body with which to hold down struggling prey, usually by force of weight and holding with a stiff neck as the prey is bitten and subdued.

The subgenus (*Laidlawus* Hoser, 2012) is distributed in the North Africa region only.

The subgenus *Maxhoservipera* Hoser, 2012 is confined to the Israel/Lebanon area and immediately adjacent parts of surrounding countries, now extending to south Turkey near the Mediterranean.

Distribution: *Maxhoservipera palaestinae yes subsp. nov.* is known only from the type locality of Alahan village, Antakya District, Hatay, Turkey, Latitude 36.3319 N., Longitude 36.1840 E.

Etymology: The word "yes" is a common exclamation when herpetologist is in the field and finds themselves a viper. The name is also short and easy to remember.

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Accidentally left out in the rain … The east Australian tree frog *Pengilleyia tyleri* (Martin, Watson, Gartside, Littlejohn, and Loftus-Hills, 1979) is split.

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RAYMOND T. HOSER
LSIDURN:LSID:ZOOBANK.ORG:AUTHOR:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
***Phone*: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au**
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ABSTRACT

As part of an audit of the Australasian herpetofauna, the Australian tree frogs were scrutinized by Hoser in a monograph published in 2020, that paper naming 62 new species and 12 new subspecies.

A taxon accidentally omitted from that work was one closely associated with *Pengilleyia tyleri* (Martin, Watson, Gartside, Littlejohn, and Loftus-Hills, 1979), a species with a type locality of near Huskisson, New South Wales.

The northern population of that putative taxon, being found in south-east Queensland and nearby north-east New South Wales is quite divergent and most likely a separate species.

However, in the absence of molecular evidence, it is conservatively named herein as a new subspecies, *Pengilleyia tyleri aboveia subsp. nov.* in accordance with the *International Code of Zoological Nomenclature (*Ride *et al*. 1999).

P. tyleri aboveia subsp. nov. is separated from the nominate form of *P. tyleri* by having a lot of green spotting and blotching on the dorsum in males, versus spotting smaller in size and quantity in nominate *P. tyleri* males, heavy green spotting on the upper surfaces of the limbs, versus little or none in *P. tyleri* and an absence of small greyish spots on the interface between the dark lateral and light ventral interface (in males).

Conservation of Australian fauna cannot be properly executed in the absence of a full inventory of species and this paper represents an important step in that direction.

Keywords: Taxonomy; nomenclature; frog; tree frog; Australia; Queensland; New South Wales; *Litoria*; *Pengilleyia*; *tyleri*; new subspecies; *aboveia*.

INTRODUCTION

As part of an audit of the Australasian herpetofauna, the tree frogs *sensu lato* was scrutinized by Hoser (2020a), that paper naming 62 new species and 12 new subspecies.

An unnamed taxon inadvertently omitted from being named in that paper is named herein.

In effect it was accidentally left out in the rain!

Pengilleyia tyleri aboveia subsp. nov. which is formally described below in accordance with the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) occurs in south-east Queensland, Australia as well as nearby northern New South Wales and has until now been treated as the northernmost population of the species *Pengilleyia tyleri* (Martin, Watson, Gartside, Littlejohn, and Loftus-Hills, 1979), a species with a type locality of near Huskisson, New South Wales south coast.

Because of the absence of genetic evidence separating the divergent northern population of putative *P. tyleri* from the type form, the newly named taxon is conservatively named herein as a new subspecies rather than a full species.

This is done in accordance with the *International Code of Zoological Nomenclature (*Ride *et al*. 1999).

This is in line with what was done by myself in Hoser (2020) with respect of the divergent taxon *Colleeneremia* (*Balatusrana*) *dentata toowoombaensis* Hoser, 2020.

That taxon was illegally renamed in 2021 as "*Litoria balatus* Rowley, Mahony, Hines, Myers, Price, Shea and Donnellan, 2021" based on molecular data published at the same time. The authors acted in breach of the *International code of Zoological Nomenclature* (Ride *et al.* 1999), as well as the Australian Copyright Act (1968).

Their data did however confirm that "*Colleeneremia* (*Balatusrana*) *dentata toowoombaensis* Hoser, 2020" should be elevated to the status of full species.

As "*Litoria balatus*" is a junior synonym of *Colleeneremia* (*Balatusrana*) *dentata toowoombaensis* Hoser, 2020, the correct nomen for the species is *C. toowoombaensis* (Hoser, 2020).

The molecular basis for the recognition of *Colleeneremia* is laid out in Hoser (2020a).

Conservation of Australian fauna cannot be properly executed in the absence of a full inventory of species and this paper represents another important step in that direction.

MATERIALS, METHODS AND RESULTS

All are as for Hoser (2020a).

The relevant subspecies named in this paper *Pengilleyia tyleri aboveia subsp. nov.* while morphologically most similar to *Pengilleyia tyleri* (Martin, Watson, Gartside, Littlejohn, and Loftus-Hills, 1979), a species with a type locality of near Huskisson, New South Wales south coast and until now treated by all publishing authors as conspecific is both morphologically divergent and geographically distant in range.

While the current distribution of putative *P. tyleri* appears to be more-or-less continuous from the south coast of New South Wales, along the coast of New South Wales to south-east Queensland, this including the range of *Pengilleyia tyleri aboveia subsp. nov.* it is likely that the two subspecies may have been distributionally disjunct and that the ranges of each taxon have expanded in recent geological times to effectively merge.

The blocking factor causing divergence between northernmost and southernmost populations is almost certainly one involving a related species, namely *P. peronii* (Tschudi, 1838).

That species has near identical habitat requirements and preferences throughout the range of putative *P. tyleri* and clearly outcompetes it in some habitats, notably including drier areas.

Even when both are sympatric, one species is generally far more abundant than the other.

PENGILLEYIA TYLERI ABOVEIA SP. NOV.

LSIDurn:lsid:zoobank.org:act:67533C4E-0B6C-4C98-8986-99DD52C87178

Holotype: A preserved adult male specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J13625 collected from Scenic Reserve, Maroochy Regional District, 6 miles south of Nambour, Queensland, Australia, Latitude -26.766667 S., Longitude -26.766667 S.

This government-owned facility allows access to its holdings.

Paratype: Two preserved adult male specimens at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J13626 and J13627 collected from Scenic Reserve, Maroochy Regional District, 6 miles south of Nambour, Queensland, Australia, Latitude -26.766667 S., Longitude -26.766667 S.

Diagnosis: *Pengilleyia tyleri aboveia subsp. nov.* is separated from the nominate form of *P. tyleri* by having a lot of green spotting and blotching on the dorsum in males, versus spotting smaller in size and quantity in nominate *P. tyleri* males (as in only a moderate amount), heavy green spotting on the upper surfaces of the limbs, versus little or none in *P. tyleri* and an absence of small greyish spots on the interface between the dark lateral and light ventral interface (in males).

The yellow between the toes in *Pengilleyia tyleri aboveia subsp. nov.* occupies a relatively larger area than seen in nominate *P. tyleri*, which in turn is more than in *P. peronii*, in which many specimens have greyish skin between the toes.

The only species likely to be confused with *P. tyleri* is *P. peronii* (Tschudi, 1838). *P. peronii* has a thin black line along the skin fold from behind the eye to the top of the arm, which is absent in *P. tyleri* (both forms). Compared to *P. tyleri*, *P. peronii* is also heavier in build and shape, has less yellow between the fingers and the toes, and breeding males of *P. peronii* have less yellow all over the body. *P. peronii* has more black and yellow marbling in the armpit and more black patterning at the back of the thigh and also has generally more granular skin.

No other species of *Pengilleyia* Wells and Wellington, 1985 is sympatric with *P. tyleri* besides *P. peronii.*

The genera *Pengilleyia* Wells and Wellington, 1985 as defined within Hoser (2020a) and adopted herein and *Kumanjayiwalkerus* Hoser, 2020 are as a pair, both readily separated from all other Australasian Tree Frogs (Pelodryadidae) by the following unique suite of characters:

Vomerine teeth present; fingers with conspicuous webbing reaching at least as far as the base of the penultimate phalanx of the fourth finger; hind edge of forearm is smooth, or with at most a few low,

discontinuous tubercles; hind edge of foot is smooth; hind side of thighs with contrasting black and yellow bars or marbling, at least dorsally.

The genus *Pengilleyia* Wells and Wellington, 1985 is readily separated from the genus *Kumanjayiwalkerus* Hoser, 2020 by having a back that is either very warty or moderately warty, versus virtually smooth or with well scattered small, pointed tubercles on an otherwise smooth body in *Kumanjayiwalkerus* Hoser, 2020.

Furthermore, species within *Pengilleyia* invariably have green spots, flecks or blotches on the back versus none in *Kumanjayiwalkerus* Hoser, 2020.

Kumanjayiwalkerus Hoser, 2020 has a strongly contrasting reddish-brown upper iris, with grey below, versus either weakly contrasting reddish-brown upper iris or the iris being grey all over in *Pengilleyia*.

Duellman *et al.* (2016) found that the species within each of *Pengilleyia* and *Kumanjayiwalkerus* Hoser, 2020 diverged from one another 16.7 MYA and these two genera in turn diverged from their nearest living relatives 23.2 MYA.

In terms of the species within the genus *Kumanjayiwalkerus* Hoser, 2020, it is worth noting that *Litoria ridibunda* Donnellan, Catullo, Rowley, Doughty, Price, Hines and Richards, 2023 is an illegally coined junior synonym of *Kumanjayiwalkerus kumanjayi* Hoser, 2020.

Because of the ICZN rule of priority the correct nomen for the species is *Kumanjayiwalkerus kumanjayi* Hoser, 2020.

Donnellan, Catullo, Rowley, Doughty, Price, Hines and Richards merely stole the work of Hoser (2020a) and have dishonestly claimed to have "discovered" the species since.

The same cohort did the same taxonomic vandalism caper with respect of *Geocrinia otwaysensis* (Hoser, 2020) (citation is Hoser 2020b), which they illegally tried to rename as "*Geocrinia sparsiflora* Parkin, Donnellan, Parkin, Shea, and Rowley, 2023" and have tried the same with other taxa (see Hoser 2024).

Pengilleyia tyleri aboveia subsp. nov. is depicted in life in Anstis (2013) on page 324 bottom right.

P. tyleri of the nominate type form is also depicted in life in Anstis (2013) on page 324 top right.

In passing I note that *Mahonabatrachus marionanstisae* Hoser, 2020 was named in honour of Marion Anstis, author of Anstis (2013).

Walmsleyus anstisae Hoser, 2014 also formally named by Hoser in honour of Marion Anstis.

Anstisia Webster and Bool, 2022 is an unlawfully created junior synonym of *Wellingtondella* Hoser, 2020, meaning that the 2022 name should not be used.

Distribution: *Pengilleyia tyleri aboveia subsp. nov.* appears to be a taxon from generally north of about the Hunter Valley in New South Wales.

Nominate *P. tyleri* occurs from about Newcastle, New South Wales south to the south coast of New South Wales, with a few specimens reported from the Victorian side of the NSW border, being found only along the coast and immediately proximal ranges.

P. peronii is co-distributed in the same area and also is found in most other parts of New South Wales, Victoria, south-east south Australia and south-east Queensland, including the Murray/Darling Basin and southern Victoria.

Etymology: The subspecies name "*aboveia*" is in reference to the habit of frogs resting in and males calling from, vegetation and hides (e.g. under bark exfoliations) that sit above the dams, swamps and watercourses that they prefer to breed and spawn in.

The spelling should not be changed and is intentional.

Conservation: There are no known threats to the subspecies

Pengilleyia tyleri aboveia subsp. nov. and there is no need for separate conservation action or regulation of the species at all.

However, in line with all native species, they may be under threat from factors or pathogens as yet unknown.

General monitoring of populations over long periods is the only immediate conservation action required.

Any other money likely to be spent, is better spent elsewhere!

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CONFLICT OF INTEREST

None.

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A new genus and two new subspecies of tree frog from south-east Australia.

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RAYMOND T. HOSER
LSIDURN:LSID:ZOOBANK.ORG:AUTHOR:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.
Phone: +61 3 9812 3322 *Fax*: 9812 3355 *E-mail*: snakeman (at) snakeman.com.au
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ABSTRACT

As part of an audit of the Australasian herpetofauna, the Australasian Tree Frogs (Amphibia: Anura: Pelodryadidae) was scrutinized by Hoser (2020).

That paper formally named 62 new species and 12 new subspecies.

The genus *Euscelis* Fitzinger, 1843, type species: *Hyla lesueurii* Dümeril and Bibron, 1841, was resurrected for the relevant species group, being 23.5 MYA divergent from nearest relatives.

However, that name is a junior homonym for *Euscelis* Brullé, 1832 being a leafhopper genus in the subfamily Deltocephalinae.

This paper therefore formally assigns a new genus name to the group, being *Aaarvo gen. nov*..

Two unnamed subspecies inadvertently omitted from being named in that paper, being within the *Hyla lesueurii* Dümeril and Bibron, 1841 complex are formally named herein according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al*. 1999).

Conservation of Australian fauna cannot be properly executed in the absence of a full inventory of taxa and this paper represents an important step in that direction.

Keywords: Taxonomy; nomenclature; frog; tree frog; Pelodryadidae; Australia; New South Wales; Victoria; *Litoria*; *Euscelis*; *lesueurii*; new genus; *Aaarvo*; new subspecies; *invadens*; *riparia.*

INTRODUCTION

As part of an audit of the Australasian herpetofauna, the Australasian Tree Frogs (Amphibia: Anura: Pelodryadidae) was scrutinized by Hoser (2020).

That paper formally named 62 new species and 12 new subspecies.

The genus *Euscelis* Fitzinger, 1843, type species: *Hyla lesueurii* Dümeril and Bibron, 1841, was resurrected for the relevant species group, being 23.5 MYA divergent from nearest relatives.

However, that name is a junior homonym for *Euscelis* Brullé, 1832 being a leafhopper genus in the subfamily Deltocephalinae.

This paper therefore formally assigns a new genus name to the group, being *Aaarvo gen. nov*..

Two unnamed subspecies inadvertently omitted from being named in that paper, being within the *Hyla lesueurii* Dümeril and Bibron, 1841 complex (now placed in the genus *Aaarvo gen. nov*.) are formally named herein according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al*. 1999) as amended (ICZN 2012).

Conservation of Australian fauna cannot be properly executed in the absence of a full inventory of taxa and this paper represents an important step in that direction.

MATERIALS, METHODS AND RESULTS

All are as for Hoser (2020).

The relevant subspecies named in this paper were shown by Donnellan and Mahony (2004) to have species-level divergence from the nominate form of "*Hyla lesueurii* Dümeril and Bibron, 1841" with a type locality of Port Jackson, Sydney, New South Wales, or nearby.

Duellman *et al.* (2016) gave a 5.8 MYA divergence between "*Aaarvo lesueurii sensu lato* and other species in the genus.

Donnellan and Mahony (2004) showed species-level divergences in some populations of putative *A. lesueurii* which they called *Litoria lesueurii* in their phylogeny at Fig. 2., although their results were ambiguous.

Call differences between Goulburn River Valley populations in Victoria (west of the Great Dividing Range) and the nominate form from coastal New South Wales, identified by myself while doing fieldwork in the Jamieson River area in Victoria, flagged a potentially unnamed subspecies.

Notwithstanding significant individual variation between specimens, the Goulburn River Valley populations are sufficiently divergent to warrant being formally named as a new subspecies and so are formally identified herein as *Aaarvo lesueurii invadens subsp. nov.*.

The geographically isolated population from west of Melbourne is also formally named as a new subspecies, being *Aaarvo lesueurii riparia subsp. nov.*.

Both are formally named according to the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended (ICZN 2012).

In terms of online references within this paper, they were checked as correct, online and accurate as of 7 January 2025.

In terms of the formal descriptions below, the descriptions are of adult male specimens, noting that in the relevant species and/or subspecies, females do differ morphologically and are on average of larger adult size.

AAARVO GEN. NOV.

LSIDurn:lsid:zoobank.org:act:E136D74B-1343-498A-A215-4A02A218C888

Type species: *Hyla lesueurii* Dümeril and Bibron, 1841.

Diagnosis: The genus *Aaarvo gen. nov*. is separated from all other Australasian Tree Frogs (Pelodryadidae) by the following unique suite of characters: Colouration is a pale fawn to dark brown above, usually immaculate, or with darker markings, ranging from flecks to blotches and including one that forms a transverse bar between the eyes; the tympanum has a pale rim; dorsal surface generally smooth or sometimes leathery, with one species having slight warts; webbing may reach the disc of the fifth toe, but usually not, and generally extending no more than halfway along the penultimate phalanx; discs on fingers and toes are small and inconspicuous and barely wider than digits; fingers unwebbed; second finger slightly longer than first; anterior head stripe is present, usually narrow but always continuous, but sometimes ill-defined, not interrupted by a vertical bar in front of the eye; posterior head stripe is narrow, no more than half as wide as and not enclosing the tympanum; there is a moderate inner metatarsal tubercle and a small outer metatarsal tubercle is present; vomerine teeth present; groin is yellow and heavily blotched with black. Whitish ventrally with granular skin. No dorsolateral skin fold.

Duellman *et al.* (2016) found that the nearest living relative of this genus diverged from these species 23.5 MYA.

The genus *Euscelis* Fitzinger, 1843, type species: *Hyla lesueurii* Dümeril and Bibron, 1841, was resurrected by Hoser (2020) for the relevant species group, being 23.5 MYA divergent from nearest relatives. However, that name is a junior homonym for *Euscelis* Brullé, 1832 being a leafhopper genus in the subfamily Deltocephalinae.

Distribution: Wetter parts of the east coast of south-east Australia, extending, from Victoria, through New South Wales and southeast Queensland and then to the wet tropics of north-east Queensland.

Etymology: "Aaarvo" is Australian slang for afternoon, being a time of day that may people locate these frogs in their riverine habitats.

Content: *Aaarvo lesueurii* (Dümeril and Bibron, 1841) (type species); *A. booroolongensis* (Moore, 1961); *A. jungguy* (Donnellan and Mahony, 2004); *A. wilcoxi* (Günther, 1864).

AAARVO LESUEURII INVADENS SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:18E8E1F4-9521-42DC-B32C-B3CF5BFE1B7D

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales, Australia, specimen number R.85463 collected from Jamieson, Victoria, Australia, Latitude -37.3 S., Longitude 146.133 E.

This government-owned facility allows access to its holdings.

Paratypes: Nine preserved specimens at the Australian Museum in Sydney, New South Wales, Australia, specimen numbers R.85466, R.85468, R.85469, R.85471, R.85475, R.85476, R.85479, R.85480 and R.85508 all collected from Jamieson, Victoria, Australia, Latitude -37.3 S., Longitude 146.133 E.

Diagnosis: Until now *Aaarvo lesueurii invadens subsp. nov.* from the Goulburn River drainage system in north-east Victoria, west of the Great Dividing Range and *A. lesueurii riparia subsp. nov.* endemic to the Lerderderg River and upper Maribyrnong River basins in central south Victoria, have been treated as the same taxon as nominate *A. lesueurii* (Dümeril and Bibron, 1841) with a type locality of Port Jackson (Sydney), New South Wales, Australia.

A. lesueurii invadens subsp. nov. is separated from the nominate form of *A. lesueurii* by the hidden colours at the back of the hind limbs that are aqua blue in colour, versus a light and more faded yellow bluish green in colour in the nominate form. These coloured areas are also well separated in *A. lesueurii invadens subsp. nov.* with distinct uncoloured "brown" zones" in the midbody area versus barely so in the nominate form of *A. lesueurii*.

A. lesueurii invadens subsp. nov. has heavy black peppering on the lower parts of the upper labial area, versus none or lightly so in the nominate form of *A. lesueurii*. The back of *A. lesueurii invadens subsp. nov.* has limited dark markings or faded blotching, versus a lot in the nominate form.

A. lesueurii riparia subsp. nov. differs from the previous two subspecies in that the upper labial area is either immaculate or any black present is in the form of small spots, usually on the jawline, as opposed to peppering.

Under the forelimbs and anterior flank, yellowish colour in *A. lesueurii riparia subsp. nov.* is in the form of well-defined blotches, rather than as an ill-defined overlay or colour change as seen in the other two subspecies, enabling separation of the subspecies *A. lesueurii riparia subsp. nov.*.

A. lesueurii is separated from all other species in the genus *Aaarvo* Fitzinger, 1843, type species *Hyla lesueurii* Dümeril and Bibron, 1841 by having bright blue or green-yellow spotting in the hidden parts of the hind limbs, versus white cream or otherwise dull coloured spots in the other species as listed in Hoser (2020).

The species within *Aaarvo* Fitzinger, 1843 are separated from all other Australasian tree frogs by their call which is a soft "qrk, qrk, qrk", and/or the following unique combination of characters: Pale fawn or dark brown above, variable in colour and intensity depending on time of day, temperature and other factors. Usually there are some form of darker flecks, or blotching in the dorsal colour. This includes a light then dark transverse bar across the anterior and posterior of the eyes.

There is a moderately well-defined black canthal streak that runs from the snout, unbroken, to the eye, above the distinct tympanum and to the upper axilla of the forelimb. Groin is yellowish and patched in the hidden areas at rear of limbs with spots that are blue, greenish-yellow, well defined or otherwise ranging to whitish and pale and poorly defined.

Venter is mainly whitish.

Skin is smooth, shagreened above, smooth on the throat and slightly granular ventrally. There is no dorsolateral skin fold. Fingers are free and with no webbing. Toes have well developed webbing. There is a moderate inner and minute outer metatarsal tubercle. Adults range from 45 to 75 mm.

A. lesueurii invadens subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/reptileshow/54249717078/
and
https://www.flickr.com/photos/reptileshow/54249901750/
and
https://www.inaturalist.org/observations/257550538
and
https://www.inaturalist.org/observations/257550618

A. lesueurii lesueurii of the nominate form is depicted in life in Anstis (2013) on pages 228 (right) to 230, Cogger (2014) on page 170 at top right and online at:
https://www.inaturalist.org/observations/249830950
and
https://www.inaturalist.org/observations/194559437

A. lesueurii riparia subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/92043606
and
https://www.inaturalist.org/observations/254068325

Distribution: *A. lesueurii invadens subsp. nov.* is presently treated as endemic to the upper Goulburn River basin in north-east Victoria, where it is a riverine species. It may also have jumped the Great Dividing Range to the south of herA.

Etymology: The subspecies name "*invadens*" reflects the fact that it is an invasive subspecies in that it readily enters and inhabits riverine habitats heavily altered by human activity, often to the detriment of less adaptable species, like *Fiacumminganurea timdalei* Hoser, 2020 that otherwise occupy the same riverine areas.

Heavily human trafficked and altered parts of the Upper Goulburn River system appear to have increased populations of *A. lesueurii invadens subsp. nov.* versus *F. timdalei* Hoser, 2020 which otherwise remain relatively strong in the less trafficked areas only.

Conservation: There are no known threats to the subspecies *A. lesueurii invadens subsp. nov.* and at the present time, there is no

need for separate conservation action or regulation of the species at all.
General monitoring of populations over long periods is the only immediate conservation action required.
Any other money likely to be spent, is better spent elsewhere!

AAARVO LESUEURII RIPARIA SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:F66C4BD8-D770-4722-A6DE-207CB514AD20

Holotype: A preserved specimen at the Museums Victoria Herpetology Collection, Melbourne, Victoria, Australia, specimen number D9546 collected from the Wombat State Forest, Blackwood, Victoria (Lerderderg River drainage), Australia, Latitude -37.48 S., Longitude 144.32 A.
This government-owned facility allows access to its holdings.

Paratypes: Nine preserved specimens at the Museums Victoria Herpetology Collection, Melbourne, Victoria, Australia, specimen numbers D9548, D9549, D9551, D9553, D9556, D9713, D9714, D9715 and D10140 collected from the Wombat State Forest, Blackwood, Victoria (Lerderderg River drainage), Australia, Latitude -37.48 S., Longitude 144.32 A.

Diagnosis: Until now *Aaarvo lesueurii invadens subsp. nov.* from the Goulburn River drainage system in north-east Victoria, west of the Great Dividing Range and *A. lesueurii riparia subsp. nov.* endemic to the Lerderderg River and upper Maribyrnong River basins in central south Victoria, have been treated as the same taxon as nominate *A. lesueurii* (Dümeril and Bibron, 1841) with a type locality of Port Jackson (Sydney), New South Wales, Australia.

A. lesueurii invadens subsp. nov. is separated from the nominate form of *A. lesueurii* by the hidden colours at the back of the hind limbs that are aqua blue in colour, versus a light and more faded yellow bluish green in colour in the nominate form. These coloured areas are also well separated in *A. lesueurii invadens subsp. nov.* with distinct uncoloured "brown" zones" in the midbody area versus barely so in the nominate form of *A. lesueurii*.

A. lesueurii invadens subsp. nov. has heavy black peppering on the lower parts of the upper labial area, versus none or lightly so in the nominate form of *A. lesueurii*. The back of *A. lesueurii invadens subsp. nov.* has limited dark markings or faded blotching, versus a lot in the nominate form.

A. lesueurii riparia subsp. nov. differs from the previous two subspecies in that the upper labial area is either immaculate or any black present is in the form of small spots, usually on the jawline, as opposed to peppering.

Under the forelimbs and anterior flank, yellowish colour in *A. lesueurii riparia subsp. nov.* is in the form of well-defined blotches, rather than as an ill-defined overlay or colour change as seen in the other two subspecies, enabling separation of the subspecies *A. lesueurii riparia subsp. nov.*.

A. lesueurii is separated from all other species in the genus *Aaarvo* Fitzinger, 1843, type species *Hyla lesueurii* Dümeril and Bibron, 1841 by having bright blue or green-yellow spotting in the hidden parts of the hind limbs, versus white cream or otherwise dull coloured spots in the other species as listed in Hoser (2020).

The species within *Aaarvo* Fitzinger, 1843 are separated from all other Australasian tree frogs by their call which is a soft "qrk, qrk, qrk", and/or the following unique combination of characters:
Pale fawn or dark brown above, variable in colour and intensity depending on time of day, temperature and other factors.
Usually there are some form of darker flecks, or blotching in the dorsal colour. This includes a light then dark transverse bar across the anterior and posterior of the eyes.
There is a moderately well-defined black canthal streak that runs from the snout, unbroken, to the eye, above the distinct tympanum and to the upper axilla of the forelimb. Groin is yellowish and patched in the hidden areas at rear of limbs with spots that are blue, greenish yellow, well defined or otherwise ranging to whitish and pale and poorly defined.
Venter is mainly whitish.
Skin is smooth, shagreened above, smooth on the throat and slightly granular ventrally. There is no dorsolateral skin fold.
Fingers are free and with no webbing. Toes have well developed webbing. There is a moderate inner and minute outer metatarsal tubercle. Adults range from 45 to 75 mm.

A. lesueurii invadens subsp. nov. is depicted in life online at:
https://www.flickr.com/photos/reptileshow/54249717078/
and
https://www.flickr.com/photos/reptileshow/54249901750/
and
https://www.inaturalist.org/observations/257550538
and
https://www.inaturalist.org/observations/257550618

A. lesueurii lesueurii of the nominate form is depicted in life in Anstis (2013) on pages 228 (right) to 230, Cogger (2014) on page 170 at top right and online at:
https://www.inaturalist.org/observations/249830950
and
https://www.inaturalist.org/observations/194559437

A. lesueurii riparia subsp. nov. is depicted in life online at:
https://www.inaturalist.org/observations/92043606
and
https://www.inaturalist.org/observations/254068325

Distribution: *A. lesueurii riparia subsp. nov.* is presently treated as endemic to the Lerderderg River and upper Maribyrnong River basins in central south Victoria, where it is a riverine species.
The Yarra Valley, from which *A. lesueurii* of any form appears to be absent (save for specimens potentially translocated by people in recent years) appears to form a contemporary barrier that separates this subspecies from the others.

Etymology: The subspecies name "*riparia*" reflects the fact that it is a riparian subspecies.

Conservation: There are no known threats to the subspecies *A. lesueurii riparia subsp. nov.* even though it is range-restricted and currently there is no need for separate conservation action or regulation of the species at all.
General monitoring of populations over long periods is the only immediate conservation action required.
Any other money likely to be spent, is better spent elsewhere!

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CONFLICT OF INTEREST - NONE.

***A. lesueurii invadens subsp. nov.* from Jamieson, Victoria.**