

***Atraserpens*, a new genus of Australian small-eyed snakes from Eastern Australia as well as a new subspecies of the Northern Small-eyed Snake *Cryptophis pallidiceps* (Günther, 1858) from north-west Western Australia (Serpentes: Elapidae).**

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ABSTRACT

The east Australian black coloured Small Eyed Snakes, being blackish or steel grey both dorsally and laterally, have long been recognized as being significantly different from all other species within putative *Cryptophis* Worrell, 1961 (type species *Hoplocephalus pallidiceps* Günther, 1858).

They all range through various shades of brown on the dorsum and/or with lighter on the flanks.

This paper recognizes this divergence that is estimated at more than 10 MYA based on previous molecular studies and the biogeographic reality of extant distributions, by recognizing these species within the newly erected genus *Atraserpens* gen. nov. (type species *Cryptophis edwardsi* Hoser, 2012).

The morphologically and geographically divergent population of the northern Small-eyed Snake *Cryptophis pallidiceps* (Günther, 1858) from the north-west Kimberley district of Western Australia, Australia is formally named as a subspecies of *C. pallidiceps* with a type locality of Port Essington in the Northern Territory (NT) Australia.

The newly identified subspecies is separated from the nominate form by having relatively narrow rectangular post oculars, being higher than wide, versus more-or-less square in the nominate form from the NT., especially for the lower one. In the newly identified subspecies the light venter colouration goes higher up the flanks. The red line on lower flank is well defined in the anterior of the NT animals and not in the newly identified subspecies.

These differences are consistent among the over 20 specimens of NT and 10 of north Kimberley specimens seen. There is also a sizeable distributional break between this newly named population and others to the east.

Keywords: Taxonomy; nomenclature; snakes; elapids; *Cryptophis*; *nigrescens*; *edwardsi*; *assimilis*; *minor*; *pallidiceps*; Northern Territory; Western Australia; new genus; *Atraserpens*; new subspecies; *mosyakini*.

INTRODUCTION

As part of a wide-ranging audit of the Australian herpetofauna by myself spanning some decades, potentially undescribed forms within all Australian snakes have been inspected and if deemed sufficiently divergent, formally named as species or subspecies.

Wells and Wellington (1984 and 1985) and in some (herein uncited) papers later, managed to settle most of the genus-level taxonomy in a robust arrangement that has survived scrutiny in the face of more recent molecular studies (e.g. Pyron *et al.* 2013).

I did manage to assign improperly placed species into a small number of more newly erected and mainly small genera, most notably including the Australian Tree Snakes in the genus

Charlespiersonserpens Hoser, 2012, some genera of small Australian elapids and some blind snakes placed into newly erected genera.

At the species level, I have managed to formally name dozens of hitherto unnamed forms of Australian snakes in the decades between 1998 and 2024, including Blindsnakes and both small and large elapids.

The full inventory of my taxonomic names for Australian snakes to the current date can be found on Zoobank by doing a search under the name "Hoser".

In terms of the genus *Cryptophis* Worrell, 1961 and associated genera, the most important relevant papers were Hoser (2012) and Hoser (2023) in which new forms were formally identified

and named.

Not dealt with in those papers was the genus-level treatment of the so-called Black Small Eyed Snakes from Eastern Australia versus the non-black ones from northern Australia, including the allied taxa within putative genera *Unechis* Worrell, 1961 and *Rhinoplocephalus* Müller, 1885 *sensu* Hoser, 2012, which I note is a different arrangement to Cogger *et al.* (1983) or Cogger (2014).

A reassessment of the three recognized species of Black Small-eyed Snakes from eastern Australia, including the single named subspecies in addition to the three other nominate forms, has found them to be sufficiently morphologically divergent from the rest of *Cryptophis* and in particular the type form to warrant being placed in a separate genus.

This is especially when the other related group *Rhinoplocephalus* is added to the analysis.

In fact with the type species of *Cryptophis* being more similar in most respect to species within *Unechis* than to the so-called Black Small Eyed Snakes AKA the "*Hoplocephalus nigrescens* Günther, 1862" complex of species it only made sense to engage in a thorough assessment to see if it was prudent to erect a new genus for these species.

I note here that in an error of transcription Hoser (2012) erroneously listed "*Hoplocephalus nigrescens* Günther, 1862" as the type species for the genus *Cryptophis* Worrell, 1961, when it was in fact *Hoplocephalus pallidiceps* Günther, 1858.

Not subject of the two earlier Hoser papers was the so-called Northern Small-eyed Snake, *Cryptophis pallidiceps* (Günther, 1858), type for the genus, being a species found in the so-called top end region of Australia from the northern Territory to the Kimberley district.

I was aware of apparent differences in specimens between the region of the north-east Kimberley district of Western Australia versus those from the more eastern parts of the range of the putative species.

However, I had not seen many specimens from this area (the north Kimberley) and so wanted to inspect further specimens or photographs to confirm that the differences were sufficiently consistent to warrant taxonomic action.

In 2023, I was fortunate enough to inspect further specimens from both Western Australia and the Northern Territory and found the originally identified differences to remain consistent and so have decided to formally name the isolated north-west Kimberley population as a new subspecies, *C. pallidiceps mosyakini* *subsp. nov.*

MATERIALS AND METHODS

In terms of the genus-level split involving the so-called Black Small Eyed Snakes from Eastern Australia from the other species in *Cryptophis*, it was not necessary for me to revisit the morphology of the relevant snake taxa as this is well known and established for the component species and I regularly inspect specimens of relevant taxa.

The exercise engaged upon was rather one to assess the literature and in particular molecular studies, combined with distributional data for the relevant species groups to establish a timeline of likely divergence for the relevant groups.

If I could confidently estimate in excess of 10 MYA, then a genus-level split was indicated based on a desire to see consistency in genus level splits in Australian snakes.

A range of 5-10 MYA would result in a decision to split at subgenus level only.

In terms of the species *Cryptophis pallidiceps* (Günther, 1858) with a type locality of Port Essington in the Northern Territory (NT) Australia, distributional data was sourced mainly from the published records available at the "Atlas of Living Australia" (<https://www.ala.org.au/>) and "Inaturalist" (<https://www.inaturalist.org/>), as well as other online sources such as "Flickr" (<https://www.flickr.com/>)

to confirm a distributional gap separating the north-west Kimberley population of the putative species from all other populations including the nominate population.

As already mentioned, specimens from the entire range of the putative species were inspected to confirm consistent differences in the north-west Kimberley population, before making the determination to describe the population as a new species or subspecies.

RESULTS

In summary, it was determined that it was proper to erect a new genus for the Black Small Eyed Snakes from eastern Australia and to formally describe the north-west Kimberley population of *C. pallidiceps* as a new subspecies.

In terms of the Black Small Eyed Snakes from eastern Australia, it appears that the centre of origin for the group is in the region of south-east Queensland and northern New South Wales.

That it is not a southern group is shown by absence from Tasmania and south-west Victoria (e.g. the Otways), implying that the south-east Victorian populations arrived there at a time after the volcanic eruptions separated the Otways from the eastern areas and that they could not migrate to this area of suitable habitat.

Molecular studies and geological studies as cited by Hoser (2022) confirmed that the Otways were cut off from the hilly forests to the east about 3-5 MYA.

The Black Small Eyed Snakes are distributed more-or-less continuously from Victoria to south-east Queensland along the coast and near ranges and then become patchy as one heads into the tropics, petering out on Cape York. While the present distribution implies a continuous one in colder periods in the recent geological past, the absence from the top of Cape York or New Guinea implies a more southern centre of origin.

In terms of the other species taxon within *Cryptophis*, it is restricted to north-west Australia only and with no direct contact with any of the species within the morphologically similar *Unechis* or *Cryptophis* and appears to be well-separated by the Carpentaria fold, being a barrier of considerable antiquity.

The antiquity of the Black Small Eyed Snakes lineage is exemplified by an extensive distribution along the east coast of Australia (extending from south Victoria to far north Queensland) and quite divergent species within the group, including the very large taxon "*Cryptophis edwardsi* Hoser, 2012" which according to Hoser (2012) exceeds 90 cm, or as Cogger (2014) claims, 1.2 metres maximum, versus the diminutive southern Victorian snakes that are mature at about 45 cm in length.

All however are distinctively black all over or otherwise steely grey.

Lee *et al.* (2015) found the morphologically similar genus *Rhinoplocephalus* Müller, 1885 confined to far south-west Australia to have diverged from the Black Small Eyed Snakes about 15 MYA.

In line with *U. boschmai* (Brongersma and Knaap-van Meeuwen, 1961), *Rhinoplocephalus* species has a nasal that does not contact the preocular indicating that this is probably the primitive form for the group.

This in turn implies that the other species in the above genera in which the nasal contacts the preocular form a natural more recently diverged group, which may necessitate transfer of some Queensland species to *Cryptophis* if the molecular results indicate them being closer to *C. pallidiceps* than to *U. boschmai*.

However because the often (widely) sympatric Black Small-eyed Snakes are so obviously divergent from the other species within *Unechis* it is not tenable for them to be in the same genus. With the putative genera *Unechis* and *Rhinoplocephalus* containing morphologically similar assemblages in each and yet *Cryptophis* as presently defined not doing so, a split seems obvious.

This is especially so based on a likely divergence of the Black Small-eyed snakes from the others being in the likely vicinity of 10-12 MYA based on the divergence between these snakes and *Rhinoplocephalus* being about 15 MYA and the similar level of morphological convergence between the relevant groups.

Even if 10-12 MYA is an over-estimation, I note that Lee *et al.* (2015) found *Notechis* Boulenger, 1896 and *Tropidechis* Günther, 1863 to have diverged just 6 MYA and yet no one in Australia has merged these genera as a result of the findings of Lee *et al.* (2015).

There is it seems no obvious way that the Black Small Eyed snakes diverged from the NT *Cryptophis* less than 6 MYA.

Therefore, the only logical outcome of this analysis is to erect a new genus for the Black Small Eyed Snakes from Eastern Australia.

In passing I note that the genus name *Alecto* Jan, 1863 proposed for his species *Alecto permixta* (a synonym of *Hoplocephalus nigrescens*) is unavailable as it is preoccupied by *Alecto* Leach, 1815 (Echinodermata).

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 30 March 2024, 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 or abnormal skin reaction to chemical or other input.

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.

ATRASERPENS GEN. NOV.

LSIDurn:lsid:zoobank.org:act:7C9BD1D0-17E2-4B08-A1DB-4E08889D7682

Type species: *Cryptophis edwardsi* Hoser, 2012.

Diagnosis: Species in this genus are separated from all other morphologically similar elapid snakes in Australia by the following unique combination of characters:

Small to medium in size (usually less than 60 cm total length, rarely larger but sometimes to a metre in one species, *A. edwardsi* Hoser, 2012 from south-east Queensland), characterized by a uniform dark steel-grey to black dorsal colour without any form of mid-dorsal stripe or colour intensity or head markings, save for occasional darkening of the head sometimes seen in younger specimens (and no brownish tinge dorsally). The scales are glossy and smooth with 15 dorsal mid-body scale rows, frontal is longer than broad, more than one and half times as broad as the supraocular; supranasals present, single anal, undivided subcaudals and two to five small solid maxillary teeth following the fang. The species within this genus are separated from all other genera by the following suite of characters (included with those just listed), Nasal contacts the

preocular, the body is more-or-less uniformly steel-grey or black above, 160-210 ventrals, belly often with darkish flecks on the subcaudals and notably an absence of a defined yellow, orange or red line on the lower flank (as seen in the species remaining in *Cryptophis* Worrell, 1961).

Conservation: No known or foreseeable threats to any species in the genus other than localized extinctions where urbanisation or industrial scale agriculture occurs.

Distribution: Eastern Australia along the coast and near ranges and slopes, mainly but not exclusively on the east draining side of the central divide, from south-east, east, north and north-west of Melbourne, Victoria, along the coast and ranges through north-east Victoria, New South Wales and Queensland, through the wet tropics to Cape York, except for the northern end.

Etymology: Taken from Latin the new genus name "*Atraserpens*" means Black Snake, in reflection of the usual dorsal colour of specimens.

Content: *Atraserpens edwardsi* (Hoser, 2012) (type species); *A. assimilis* (Macleay, 1885); *A. nigrescens* (Günther, 1862) (including the subspecies *A. nigrescens minor* (Hoser, 2013)).

CRYPTOPHIS PALLIDICEPS MOSYAKINI SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:7DE557F0-262F-4FDA-A0FF-0DE5DA0938D0

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number: WAM R44271 collected from the Mitchell Plateau, Western Australia, Australia, Latitude -14.75 S., Longitude 125.75 E. This government-owned facility allows access to its holdings.

Paratypes: Five preserved specimens at the Western Australian Museum, Perth, Western Australia, Australia, specimen numbers: WAM R171649 (a male) collected from Wargul Wargul Island, Western Australia, Australia, Latitude -13.937778 S., Longitude 126.175833 E., WAM R173902 (a female) collected from Theda Station, Western Australia, Australia, Latitude -14.473889 S., Longitude 126.3 E., WAM R173843 collected from Theda Station Homestead Latitude -14.786389 S., Longitude 126.4975 E., WAM R28221 collected from the King Edward River, Western Australia, Australia, Latitude -14.95 S., Longitude 126.116667 E., WAM R119846 collected from Theda Station, Western Australia, Australia, Latitude -14.816667 S., Longitude 126.716667 E.

Diagnosis: The subspecies *Cryptophis pallidiceps mosyakini* subsp. nov. from the north-west Kimberley district of Western Australia is readily separated from the nominate form of *Cryptophis pallidiceps* (Günther, 1858) with a type locality of Port Essington, Northern Territory, Australia and occupying a distribution encompassing the top end of the Northern Territory, west to include the Ord basin in the east Kimberley district of Western Australia by the following unique suite of characters:

The newly identified subspecies is separated from the nominate form by having relatively narrow rectangular post oculars, being higher than wide (versus more-or-less square in the nominate form from the NT), especially for the lower one. In the newly identified subspecies, the light venter colouration goes higher up the flanks. The red line on lower flank is well defined in the anterior of the nominate subspecies and not in the newly identified subspecies.

These differences are consistent among the over 20 specimens of NT and 10 of north Kimberley specimens seen by this author. There is also a sizeable distributional break between this newly named population and others to the east.

Both subspecies of *Cryptophis pallidiceps*, are now the entirety of the genus *Cryptophis* Worrell, 1961 as defined by Hoser (2012) and this paper based on the removal of black coloured east Australian species into the new genus *Atraserpens* gen. nov..

The two subspecies are separated from species within *Atraserpens* gen. nov. by having a dark brownish dorsum rather than a steely grey or black dorsum. They are further separated

from *Atraserpens* gen. nov. by the possession of a relatively distinct light, yellowish, or pink, orange, or reddish band on the lower anterior flank, separate to the lighter pale venter below.

The two genera *Cryptophis* and *Atraserpens* gen. nov. are separated from all other Australian elapids in the diagnosis of Hoser (2012) on page 5 under the diagnosis for “*Cryptophis*”.

The two genera are separated from all other Australian elapids as follows:

They are of small to medium in size, characterized by a uniform dorsal colour without any form of mid-dorsal stripe or colour intensity or head markings, save for occasional darkening of the head sometimes seen in younger specimens. The scales are glossy and smooth with 15 dorsal mid-body scale rows, frontal is longer than broad, more than one and half times as broad as the supraocular; supranasals present, nasal contacts the preocular, single anal, undivided subcaudals, and two to five small solid maxillary teeth following the fang. The species within these genera are further separated from the other morphologically similar genera of Australian elapids by the following suite of characters (included with those just listed), the body is more-or-less uniformly black or dark brown above, 160-210 ventrals, belly often with darkish flecks on the subcaudals.

Distribution: The subspecies *Cryptophis pallidiceps mosyakini* subsp. nov. is known only from the north-west Kimberley district of Western Australia, Australia, generally in the vicinity of the collection localities for the holotype and paratypes.

Conservation: No known or foreseeable threats to this subspecies other than extremely localized extinctions where urbanisation or industrial scale agriculture or open-cut mining occurs.

Etymology: *Cryptophis pallidiceps mosyakini* subsp. nov. is named in honour of Sergei Leonidovich Mosyakin (born 30 November 1963) who is a Ukrainian botanist. He courageously published a rebuttal of an attempt by Wolfgang Wüster and his mate Kevin R. Thiele, creator of a fake science group called “Taxonomy Australia” to engage in a wholesale taxonomic vandalism in botany and zoology leading to their cohort overwriting thousands of scientific names with their own monstrous creations.

These creations include yet more patronyms, including some named after racist sex offenders who kidnapped young black boys for anal sex (Don Broadley of Rhodesia, William Branch of South Africa and Van Wallach of the USA).

The “Taxonomy Australia” cohort also included monsters like Adam Britton of Darwin who in 2023 pled guilty in the NT Supreme Court to about 37 charges of bestiality involving anal sex of people’s pet dogs, which he then killed, before posting this material on the “dark web” as videos for public download, under cover of corrupt police protection for more than a decade (Mackay, 2024).

See also Mosyakin (2023) and sources cited therein for details of Mosyakin’s works.

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CONFLICT OF INTEREST

None.