

Pleistocene splits in the Australian *Odatia tristis* (Schlegel, 1839) species and *Pantherosaurus rosenbergi* (Mertens, 1957) complexes. The formal identification and naming of a new species and three new subspecies.

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ABSTRACT

In a paper published in 2013, I formally identified and named, *Odatia tristis nini* (type locality East Alligator River, Northern Territory, Australia), as a subspecies of the well-known Pan-Australian varanid taxon *Odatia tristis* (Schlegel, 1839), type locality Swan River, Western Australia.

Three other names were already available for other populations of the same species (Cogger *et al.* 1983).

Pavón Vázquez *et al.* (2023) published a phylogeny of the “Variable Monitor Lizard (*Varanus tristis*)”, confirming that “*Varanus punctatus orientalis* Fry, 1913” with a type locality of Eidsvold, South-east Queensland (Fry, 1913) was sufficiently divergent to warrant species-level recognition.

The same paper confirmed the validity of *Odatia tristis nini* as a valid subspecies and identified other populations sufficiently divergent to warrant subspecies-level recognition.

The paper also in effect simultaneously found that this (subspecies level recognition) was not the case for “*Varanus (Odatia) tristis centralis* Mertens, 1957” with a type locality of Hermannsburg, Northern Territory and “*Varanus occidentalis* Zinniker, 1961” with a type locality of Western Australia, with both forms apparently closely associated with the type form of *O. tristis* in terms of both molecular divergence and morphology.

Three populations flagged by Pavón Vázquez *et al.* (2023) as distinct at the subspecies level that appear to be largely restricted to specific areas and surrounded by biogeographical barriers are those from the north-west Kimberley District of Western Australia, effectively bound by flat lands or dunes on all sides, save for the ocean to the west, the Musgrave Ranges of north-west South Australia, south-west Northern Territory and just entering the far east of Western Australia, also bound by flat lands and salt lakes, or impassable dune country, as well as the distinctive population from Queensland that is west of the Great Divide and east of the Simpson Desert, and similarly bound by uninhabitable flat lands to the north and south.

As Pavón Vázquez *et al.* (2023) made it clear they had no intention of recognising any taxa within *O. tristis sensu lato* beyond their noting *O. orientalis* was a full species, the purpose of this paper is to formally name the three obvious subspecies awaiting formal description.

Were it not for evidence of introgression in each population, I would have formally named each taxon as a full species.

In addition to the preceding, the distinctive and morphologically divergent South Australian / west Victorian population of putative *Pantherosaurus rosenbergi* (Mertens, 1957), with a type locality of Monigup Pass, Stirling Range, Western Australia, long recognized as divergent at the species-level, based on the molecular data of Smith *et al.* (2007) is formally named as a new species *P. wamsleyi* sp. nov..

Keywords: Taxonomy; nomenclature; lizard; varanid; monitor; *Varanus*; *Odatia*; *Pantherosaurus*; *tristis*; *orientalis*; *punctatus*; *nini*; *centralis*; *occidentalis*; *rosenbergi*; *kuringai*; Australia; Queensland; Western Australia; Northern Territory; Kimberley; Victoria; new species; *wamsleyi*; subspecies; *balangarraorum*; *yankuntjatjaraorum*; *bidjaraorum*.

INTRODUCTION

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

A small number had been “passed over” awaiting further inquiries, including the newly identified taxa subject of this paper.

Hoser (2013b) published a major review of the Australian varanids, including the formal description of species and subspecies.

One of these was *Odatría tristis nini* (type locality East Alligator River, Northern Territory, Australia), as a subspecies of the well-known Pan-Australian varanid taxon *Odatría tristis* (Schlegel, 1839), type locality Swan River, Western Australia.

That this was a taxon different to the other recognized forms listed in Cogger *et al.* (1983) seemed obvious at the time.

Three other names were already available for other populations of the same species (Cogger *et al.* 1983).

Pavón Vázquez *et al.* (2023) published a phylogeny of the “Variable Monitor Lizard (*Varanus tristis*)”, confirming that “*Varanus punctatus orientalis* Fry, 1913” (Fry, 1913) with a type locality of Eidsvold, South-east Queensland was sufficiently divergent to warrant species-level recognition.

They found no introgression between this and any other populations of *O. tristis* and a divergence dating to the Pliocene.

The same paper confirmed the validity of *Odatría tristis nini* Hoser, 2013 as a valid subspecies, having diverged around the boundary of the Pliocene and Pleistocene, but based on molecular results, in effect confined this form to the top end of the Northern Territory and flagging Kimberley West Australian animals as being of a different subspecies.

They also identified other populations similarly sufficiently divergent to warrant subspecies-level recognition, although for none of these did they provide any morphological evidence or diagnostic characters.

The paper also in effect simultaneously found that this was not the case for “*Varanus (Odatría) tristis centralis* Mertens, 1957” with a type locality of Hermannsburg, Northern Territory (see Mertens 1957a, 1957b) and “*Varanus occidentalis* Zinniker, 1961” with a type locality of Western Australia (Zinniker 1961), with both forms apparently closely associated with the type form of *O. tristis* in terms of both molecular divergence and morphology.

Three populations flagged by Pavón Vázquez *et al.* (2023) in their published phylogenetic analysis as distinct at the subspecies level that appear to be largely restricted to specific areas and surrounded by biogeographical barriers are the following:

- 1/ Those from the north-west Kimberley District of Western Australia, effectively bound by flat relatively rock free lands or dunes on all sides, save for the ocean to the west,
- 2/ Those from the Musgrave Ranges of north-west South Australia, south-west Northern Territory and just entering the far east of Western Australia, also bound by flat lands and salt lakes, or impassable dune country,
- 3/ Also, the distinctive population from Queensland that is west of the Great Divide and east of the Simpson Desert, and similarly bound by mainly uninhabitable flat lands to the north and south.

Pavón Vázquez *et al.* (2023) made it clear they had no intention of recognising any taxa within *O. tristis sensu lato* beyond their noting *O. orientalis* was a full species (often previously identified as a subspecies of *O. tristis*).

By way of further example, they wholly ignored the existence of *O. tristis nini*, even though it was clearly identified as a distinctive divergent population in all their phylogenies and morphologically

is also probably the easiest of the relevant taxa to separate as a subspecies.

Hence the purpose of this paper’s preparation was to confirm the basis to formally name the three obvious subspecies awaiting formal description.

Were it not for evidence of introgression in each population, I would have intended to formally name each taxon as a full species and approached the preparation of this paper on that basis.

In terms of the putative taxon, *Pantherosaurus rosenbergi* (Mertens, 1957), with a type locality of Monigup Pass, Stirling Range, Western Australia, it has, long been recognized as a species complex *sensu* Wells and Wellington (1985).

These authors formally named the coastal New South Wales / ACT population as *P. kuringai*, notably being ahead of all other publishing herpetologists in Australia of their time in getting both species and genus assignment correct.

Outside of the publications of myself (e.g. Hoser 2013b) almost two decades after Wells and Wellington (1985) fixed up this part of Australian reptile taxonomy and nomenclature, other publishing herpetologists in Australia have to the present date still erroneously placed the relevant species in the genus *Varanus* Merrem, 1820, type species *Lacerta varia* White, 1790.

Smith *et al.* (2007) in their paper published a detailed phylogeny for the complex, confirming the species-level divergence of the East coast population, being mtDNA divergent at 8.2% or likely more than 4 MYA from the type form of *P. rosenbergi*.

The West Australian *P. rosenbergi* are readily separated from *P. kuringai* by their somewhat stockier build, blackish, versus greyish adult colouration above; semi-distinct bands on the upper surfaces of their anterior forelimbs versus spots in this part in *P. kuringai*; with the upper surfaces of the limbs being black, versus dark grey, differences in tail rings, as well as other morphological divergences.

Mention is made of all this to stress that it is an outrageous state of affairs in that a group of bullies in the form of the Wolfgang Wüster gang have been able to harass and bludgeon other publishing herpetologists to ignore the works of Wells and Wellington (1984, 1985) and others they dislike and refuse to accept what are in effect scientific facts and in this case merely statements of the obvious.

Wüster and his agents in the form of Kaiser (2012a-b, 2013, 2014a-b), Kaiser *et al.* (2013), Rhodin *et al.* (2016) and Wüster *et al.* (2021) continue to try to attack the science of herpetology in making false claims against Wells, Wellington and myself in order to present a false and distorted narrative of herpetology and taxonomy, with an ultimate position being an intent to rename the same taxa at a time and place they see fit and control to enable the gang to rewrite history (George Orwell style) and claim to have discovered species found by others (Ceraico *et al.* 2023, Hawkeswood 2021, Hoser 2007, Hoser 2009, 2012a-b, 2013a, 2015a-f, 2019a-b, Wellington 2015).

The gang of thieves have been given stern rebukes by the International Commission of Zoological Nomenclature (ICZN) no less than four times (ICZN 1991, 2001, 2021 and Ceraico *et al.* 2023).

Now as of 2024, we have the gang openly and publicly defying the ICZN and they have published a manifesto declaring a war against science, sensible scientific taxonomy and the ICZN nomenclature (Wüster *et al.* 2021).

One member of the cohort, Adam Britton has been jailed in 2023 after pleading guilty to 60 bestiality offences whereby he had anal sex with people’s pet dogs, killing them and posting the videos of his depraved acts online, as well as trading child pornography (Mackay 2024).

Had he committed the crimes in New South Wales or Victoria, Australia instead of the Northern Territory, he would never have been charged with the offences. As it was, Britton was

only charged after being corruptly protected for years, because another member of the same Wüster *et al.* 2021 cohort was upset that Britton got a big government hand-out of cash ostensibly to study crocodiles, that he thought he was entitled to instead.

With the centre of distribution of *P. kuringai* including the Sydney and Canberra basins respectively, these also including Australia's largest city and Australia's political capital, Canberra being a town rapidly expanding with ever increasing numbers of environment destroying bureaucrats, the taxon has declined in numbers sharply in recent years and is already listed as "Vulnerable" in New South Wales.

That Wüster and his gang are hastening the demise and potential extinction of *P. kuringai* by asserting it is merely an eastern outlier population of putative *P. rosenbergi* is scandalous in the extreme.

There is a strong precedent for their actions with respect of other Australian reptile species facing extinction as outlined in Hoser (2019a-b).

Significantly, the molecular data of Smith *et al.* (2007) also found that the population of putative *P. rosenbergi* from the east side of the Nullarbor Plain in South Australia, extending along the southern edge of the state, including nearby offshore islands, into Western Victoria had a mitochondrial divergence from *P. kuringai* of 2.9 to 4.7 percent and in turn a divergence from *P. rosenbergi* of the nominate form of 4.1 to 5.8 percent.

This implies about a 2 MYA divergence from either population and if combined with obvious consistent morphological differences, would also make a good case for formal recognition of this form as a new species.

I note that Cogger *et al.* (1983) as well as Wells and Wellington (1984 and 1985) confirm that there are no available synonyms for the taxon.

It is trite to point out that none of these taxa can be conserved or managed if scientists and governments are unaware of their existence and/or they simply do not have names, making them effectively non-existent to scientists and legislators alike.

It is also trite to note that any forced delay in recognition of these taxa and the use of the correct ICZN names for them will potentially endanger the relevant species, although fortunately none of the ones named in this paper are deemed by anyone with knowledge of the taxa as threatened across their entire ranges at the present time.

MATERIALS AND METHODS

Publications relevant to *Odatria tristis sensu lato* were audited to see if there were any available synonyms for the populations identified above.

This included Cogger *et al.* (1983), Cogger (2014), Wells and Wellington (1984, 1985) and Hoser (2013b).

Because of the nature of the project, a review of the herpetological literature was of little help because all relevant populations of *O. tristis sensu lato* were merely identified as either *O. tristis*, or sometimes *O. orientalis*.

In spite of the fact that Hoser (2013b) was the first to correctly identify *O. orientalis* as an exclusively Queensland taxon (although erroneously as a subspecies), this has not been followed by other publishing herpetologists in Australia.

Photo sharing websites such as "inaturalist" (<https://www.inaturalist.org/>) and "flickr" (<https://www.flickr.com/>) continue to erroneously identify specimens of *O. tristis nini* as *O. tristis orientalis*, even since the publication of Pavón Vázquez *et al.* (2023) which confirmed the Hoser (2013) taxonomy and nomenclature as correct.

Specimens of the relevant populations across Australia were examined prior to the publication of Hoser (2013) and more specimens of putative *O. tristis* including *O. orientalis* have been inspected in the 9 years since then.

The basis of the relevant inquiries was to confirm consistent morphological differences allowing the relevant clades identified in the paper of Pavón Vázquez *et al.* (2023) to be identified and diagnosed as subspecies in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended (ICZN 2012).

The same methodology as just explained was used with respect of *P. rosenbergi*. I should also note for the record that this is a putative taxon, I have worked with for more than 50 years and that I have extensive experience with all the relevant regional forms both in the wild and in captivity.

So in terms of differences between the relevant populations these were well known to me, even before the publications of Wells and Wellington (1985), Smith *et al.* (2007) and Hoser (2013b).

RESULTS

For each of the three relevant populations of putative *O. tristis sensu lato* consistent morphological differences between them and the other already identified taxa within *O. tristis sensu lato* were found. These are outlined in the descriptions for each that follows.

I should also flag that there may be potentially other populations that are sufficiently divergent as to ultimately warrant subspecies level recognition. These also appear to be most likely in the tropical north of the continent, such as in the southern Gulf of Carpentaria / Selwyn Ranges district.

O. orientalis from eastern Queensland and restricted to this region, is herein agreed as being a full species and is treated as such for the rest of this paper.

I should also mention that a result of this paper is an effective redefinition of *O. tristis nini* Hoser, 2013 in terms of the distribution.

It was erroneous to include the entire Kimberley district in the range for that taxon, meaning it is in effect only a top end of the NT species extending to the East Kimberley in Western Australia, but not including the north-west and far west Kimberley. That area is occupied by another easily diagnosable and divergent subspecies.

While the two forms are similar, (*O. tristis nini* and the newly named *O. tristis balangarraorum* from the Kimberley district of Western Australia) inspection of numerous specimens from both areas they occur and in particular the north-west Kimberley District have shown consistent differences in several regards including colour of the lower parts of the head and the size and number of ocelli on the dorsal surfaces. This allowed both of them to be easily separated at the subspecies level.

The north-west Kimberley lizards also do not match the diagnosis of *O. tristis nini* as defined by Hoser (2013).

Hence the diagnosis of that taxon (*O. tristis nini*) can in effect remain unchanged and only the distribution needs to be altered.

As mentioned above, the new subspecies from the north-west Kimberley district in Western Australia is herein formally named as *O. tristis balangarraorum subsp. nov.*

In terms of the relevant South Australian/Victorian population of putative *O. rosenbergi*, I had been of the view for many years that it was insufficiently divergent from *O. kuringai* to be recognized as a full species and had intended at some stage to name it as a subspecies.

Delay in that regard was due to the fact that with some regularity I have travelled to western Victoria and nearby parts of South Australia over the past 2 decades and have availed myself of the opportunity to inspect further specimens of the relevant taxon. The differences between this taxon and its closest relative, *P. kuringai* from the Sydney and Canberra basins are too great on further inspection of live specimens to allow them to be treated as the same species.

This is especially the case noting that they:

- 1/ Are reproductively isolated by a wide zone of dry habitat occupied by competing species,
- 2/ That this has evidently been the case for a long time and
- 3/ That the molecular divergence cited by Smith *et al.* (2007) is so wide.

The morphological differences are also particularly stark noting that the two are supposedly very closely related.

With the molecular data of Smith *et al.* (2007) finding that the population of putative *P. rosenbergi* from the east side of the Nullarbor Plain in South Australia, extending along the southern edge of the state, including nearby offshore islands, into Western Victoria had a mitochondrial divergence from *P. kuringai* of 2.9 to 4.7 percent and in turn a divergence from *P. rosenbergi* of the nominate form of 4.1 to 5.8%, implying an approximate divergence time of 1.5 to 2 MYA from either other population (*O. rosenbergi* and *O. kuringai*) I effectively had no choice but to formally name the central population as a new species.

It is formally named *O. wamsleyi* sp. nov. in honour of conservation icon Dr. John Wamsley, (for details see Hoser 2014).

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 the species or subspecies 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).

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.

Online references were checked as live and accurate for the stated content most recently on 30 March 2024.

CONSERVATION – GENERAL REMARKS

In terms of the conservation of each taxon named herein. None appear to be under any immediate threats save for the general ongoing degradation of the Australian environment and poor legislative regime as detailed in Hoser (1989, 1991, 1993 and 1996).

All have sufficiently wide ranges, including within conservation zones and / or otherwise remote regions and so appear safe at the species or subspecies level.

Harvesting for product or the pet trade is unlikely to pose any risk, even if left unregulated.

ODATRIA TRISTIS BALANGGARARUM SUBSP. NOV.

XXXX LSID urn:lsid:zoobank.org:act:81E4537C-F191-40FE-8AF0-12E5BBC39181

Holotype: A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R96235 collected from the Mitchell Plateau, Western Australia, Australia, Latitude -14.733333 S., Longitude 125.733333 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Four preserved specimens at the Western

Australian Museum, Perth, Western Australia, Australia, specimen numbers R60674, R77270, R77603 and R96238 all collected from the Mitchell Plateau, Western Australia, Australia, Latitude -14.733333 S., Longitude 125.733333 E.

2/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R77679 collected from Walsh point, Western Australia, Australia, Latitude -14.533333 S., Longitude 125.816667 E.

3/ A preserved specimen at the Western Australian Museum, Perth, Western Australia, Australia, specimen number R45054 collected from Port Warrender, Western Australia, Australia, Latitude -14.533333 S., Longitude 125.816667 E.

Diagnosis: *Odatria tristis balanggararum* subsp. nov. is similar in most respects to *O. tristis nini* Hoser, 2013 from the top end of the Northern Territory and East Kimberley District of Western Australia, but is separated from that taxon as follows:

O. tristis nini has a dorsum with rows of small beige ocelli on the back running laterally across the back. The interspaces are orange and form a series of irregularly shaped dorsal crossbands.

The body is also brilliantly coloured in mature adults.

By contrast, in *O. tristis balanggararum* subsp. nov. the ocelli are expanded in size and number, as well as being expanded to such a degree that they form a matrix across the back and without any form of obvious crossbands between them.

The ocelli themselves are a light salmon colour, as opposed to beige in *O. tristis nini* and they are basically against one another, thereby occupying the entire area of the upper surfaces. The interspaces are in the form of a thin and darker line of similar colour, but certainly no obvious crossbands are on the dorsum.

On the upper surfaces of the limbs, the darker markings are more prominent in *O. tristis balanggararum* subsp. nov., versus the small yellow spots being more prominent in *O. tristis nini*.

The subspecies *O. tristis nini* and *O. tristis balanggararum* subsp. nov. are both readily separated from *O. orientalis* by colour. *O. tristis nini* and *O. tristis balanggararum* are characterized by

an orange or yellow coloured head, including the underside, which is yellowish in colour. By contrast, *O. orientalis* (Fry, 1913) a taxon from eastern Queensland, generally associated with drainage regions running east of the Great Dividing Range, is characterized by either a greyish head, or if marked (as is commonly seen in juveniles) there are white light markings on the head, as opposed to yellowish in *O. tristis nini* and *O. tristis balanggararum*.

O. tristis (Schlegel, 1839) of the nominate form, is a taxon with a type locality of Swan River (Perth), western Australia, and is found in most parts of that state except for the Kimberley District and Musgrave Ranges, but is also found across a wide part of central Australia, extending to the south of the tropics.

O. orientalis are separated from all forms and subspecies of *O. tristis* by the following characters: It has a distinct dark post-ocular stripe, well defined because of a strong white border above and below and a reticulated dorsal pattern that extends anteriorly into the head (versus not so in *O. tristis*).

In *O. tristis tristis* (Schlegel, 1839), the head and neck are always black or dominantly blackish in colour, readily separating them from *O. tristis nini*, *O. tristis balanggararum* subsp. nov. and *O. tristis yankuntjatjararum* subsp. nov., being a newly named subspecies from the Musgrave Ranges in north-west South Australia and immediately adjacent parts of the Northern Territory and Western Australia covered by the same mountain range.

O. tristis yankuntjatjararum subsp. nov. from the Musgrave Ranges (North west South Australia and immediately adjacent parts of WA and NT) is separated from the other subspecies of *O. tristis* by the following unique combination of characters: Red head with a white temporal streak, sometimes faded, large

yellow ocelli on the upper body and upper surfaces of the limbs with reddish to yellow brown in the interspaces which are larger than just lines, but not so big as to have open spaces between ocelli; the ocelli also not being formed into any obvious rows; bold reddish markings on an otherwise white chin and gular pouch, a tail with yellow and black rings anteriorly and black distally.

The taxon *O. tristis bidjaraorum subsp. nov.* is the taxon found in western Queensland, generally west of the Great Dividing Range, south of the Selwyn Range and outliers, east of the Simpson Desert, and extending into north-west New South Wales to about Broken Hill in the South.

It is readily separated from all the other subspecies of *O. tristis* by the following unique combination of characters:

A black head, neck and tail, except for the anterior part of the tail which is mainly black but with semi-distinct yellow rings at the distal end. Markings on the dark throat are barely noticeable. The dorsum of the body has large yellowish ocelli, etched with black or very dark brown on the outer edge and with prominent dark in the centre of each ocelli; the interspaces are reddish, or reddish-brown, although colouration is all reddish or reddish brown below the mid-flank.

The limbs are prominently spotted with small, part formed yellow ocelli.

Within *O. tristis* (excluding *O. orientalis*), only *O. tristis bidjaraorum subsp. nov.* and *O. tristis balangarraorum subsp. nov.* have large ocelli on the dorsum, with all other subspecies having ocelli that are either medium, small or absent.

Both *O. tristis* (all subspecies) and *O. orientalis* are separated from all other species of Australian varanid by the following unique combination of characters:

Tail scales are slightly keeled; the tail is not spinose and is more or less rounded in anterior cross-section, lacking any indication of a dorsal keel and about 1.5 to 2.3 times the length of the body (snout-vent). Scales on the top of the head are relatively smooth. Most of the tail lacks bands with only bands or similar present at the near anterior end and the tail is black or near black at the terminal end. There are very small subequal supraoculars, being sharply differentiated from the larger interoculars; males have a ventro-lateral cluster of strong spines on each side behind the vent. Nostrils are lateral and a bit closer to the tip of the snout than the eye. 105-155 midbody rows. Grows to about 80 cm in total length (derived mainly from the diagnosis of Cogger 2014).

O. tristis of the nominate subspecies is depicted in life online at:

<https://www.flickr.com/photos/76932919@N06/>

and

<https://www.inaturalist.org/observations/16738837>

and

<https://www.inaturalist.org/observations/186147097>

O. orientalis is depicted in life online at:

<https://www.flickr.com/photos/mattsummerville/25598048752/>

and

<https://www.flickr.com/photos/edwardevans/53482356560/>

and

<https://www.inaturalist.org/observations/203322129>

and

<https://www.flickr.com/photos/58828131@N07/53568062777/>

O. tristis nini is depicted in life online at:

<https://www.flickr.com/photos/154630905@N06/38780416765/>

and

<https://www.flickr.com/photos/valterw/476455329/>

and

<https://www.inaturalist.org/observations/142434078>

O. tristis balangarraorum subsp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/8441352064/>

and

<https://www.flickr.com/photos/reptileshots/8441351680/>

and

<https://www.flickr.com/photos/33102730@N02/24033014323/>

O. tristis yankuntjatjaraorum subsp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/92444368>

and

<https://www.inaturalist.org/observations/199890460>

and

<https://www.inaturalist.org/observations/196947405>

O. tristis bidjaraorum subsp. nov. is depicted in life online at:

<https://www.flickr.com/photos/63728076@N05/6723855947/>

and

<https://www.inaturalist.org/observations/55873734>

Distribution: *O. tristis balangarraorum subsp. nov.* is a taxon confined to the north and west Kimberley district of Western Australia. *O. tristis nini* Hoser, 2013, is found in the tropical top end of the Northern Territory extending west to include the East Kimberley district (Ord River drainage) in Western Australia.

Conservation: In terms of habitat conservation, there is sufficient habitat in public reserves or remote areas with limited prospects of any significant human activity to secure the future of the subspecies.

The hobbyist/pet trade also poses no real threat as these lizards breed easily and any substantive demand would invariably be met mainly by captive breeding, followed by a later interest in morphs rather than the more common "wild-type forms".

Therefore, it should be treated as being of least concern.

However the comments in Hoser (2019a-b) are relevant to this taxon.

Etymology: *O. tristis balangarraorum subsp. nov.* (pronounced balang-garra-orum) is named in honour of the Balangarra tribe from the north Kimberley district of Western Australia, Australia.

Compared to other native Australians, they fared relatively well at the hands of the British invaders in the 1700's and 1800's due to the relatively remote location they inhabit.

Most died from introduced diseases like smallpox rather than from direct killing.

ODATRIA TRISTIS YANKUNTJATARAORUM SUBSP. NOV.

LSIDurn:lsid:zoobank.org:act:E6C55E3B-89BF-4C72-BA91-BC25BC95D17A

Holotype: A preserved adult female specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R50154 collected from 2.4 km north-west of Sentinel Hill, South Australia, Australia, Latitude -26.0633 S., Longitude 132.4367 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved male specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R50152 collected from 2.4 km north-west of Sentinel Hill, South Australia, Australia, Latitude -26.0633 S., Longitude 132.4367 E.

2/ A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R51589 collected from 36.5 km east south-east of Amata, South Australia, Australia, Latitude - 26.2558 S., Longitude 131.4933 E.

Diagnosis: *O. tristis yankuntjatjaraorum sp. nov.* appears to be confined to the Musgrave Ranges and ranges immediately to the

west in far north-west South Australia and ranges immediately adjacent in the far southwest of the Northern Territory and adjacent Western Australia.

West and north of here one finds the nominate form of *O. tristis tristis* (Schlegel, 1839). The Nullarbor to the south and Simpson Desert to the east appear to form a barrier to dispersal of the species in those directions.

O. tristis yankuntjatjaraorum subsp. nov. is separated from the other subspecies of *O. tristis* including the nominate form and the closely related taxon *O. orientalis* (Fry, 1913) from coastal and near Queensland and adjacent parts of New South Wales by the following unique combination of characters:

Red head with a white temporal streak, sometimes faded; large yellow ocelli on the upper body and upper surfaces of the limbs with reddish to yellow brown in the interspaces which are larger than just lines, but not so big as to have open spaces between ocelli; the ocelli also not being formed into any obvious rows; bold reddish markings on an otherwise white chin and gular pouch; a tail with yellow and black rings anteriorly and black distally.

O. tristis balanggaraorum subsp. nov. from the north-west Kimberley District of Western Australia is similar in most respects to *O. tristis nini* Hoser, 2013 a taxon from the top end of the Northern Territory and East Kimberley District of Western Australia, but is separated from that taxon as follows:

O. tristis nini has a dorsum with rows of small beige ocelli on the back running laterally across the back. The interspaces are orange and form a series of irregularly shaped dorsal crossbands.

The body is also brilliantly coloured in mature adults.

By contrast, in *O. tristis balanggaraorum subsp. nov.* the ocelli are expanded in size and number, but expanded to such a degree that they form a matrix across the back and without any form of obvious crossbands between them.

The ocelli themselves are a light salmon colour, as opposed to beige in *O. tristis nini* and they are basically against one another, thereby occupying the entire area of the upper surfaces. The interspaces are in the form of a thin and darker line of similar colour, but certainly no obvious crossbands are on the dorsum.

On the upper surfaces of the limbs, the darker markings are more prominent in *O. tristis balanggaraorum subsp. nov.*, versus the small yellow spots being more prominent in *O. tristis nini*.

The subspecies *O. tristis nini* and *O. tristis balanggaraorum subsp. nov.* are both readily separated from *O. orientalis* by colour. *O. tristis nini* and *O. tristis balanggaraorum* are characterized by

an orange or yellow coloured head, including the underside, which is yellowish in colour. By contrast, *O. orientalis* (Fry, 1913) a taxon from eastern Queensland, generally associated with drainage regions running east of the Great Dividing Range, is characterized by either a greyish head, or if marked (as is commonly seen in juveniles) there are white light markings on the head, as opposed to yellowish in *O. tristis nini* and *O. tristis balanggaraorum*.

O. tristis (Schlegel, 1839) is a taxon with a type locality of Swan River (Perth), western Australia, and the nominate form and subspecies is found in most parts of that state except for the Kimberley District and Musgrave Ranges, but is also found across a wide part of central Australia, extending to the south of the tropics.

O. orientalis are separated from all forms and subspecies of *O. tristis* by the following characters: It has a distinct dark post-ocular stripe, well defined because of a strong white border above and below and a reticulated dorsal pattern that extends anteriorly into the head (versus not so in *O. tristis*).

In *O. tristis tristis* (Schlegel, 1839), the head and neck are always black or dominantly blackish in colour, readily separating them from *O. tristis nini*, *O. tristis balanggaraorum subsp. nov.* and

O. tristis yankuntjatjaraorum subsp. nov., being a newly named subspecies from the Musgrave Ranges in north-west South Australia and immediately adjacent parts of the Northern Territory and Western Australia covered by the same mountain range.

The taxon *O. tristis bidjaraorum subsp. nov.* is the taxon found in western Queensland, generally west of the Great Dividing Range, south of the Selwyn Range and outliers, east of the Simpson Desert, and extending into north-west New South Wales to about Broken Hill in the South.

It is readily separated from all the other subspecies of *O. tristis* by the following unique combination of characters:

A black head, neck and tail, except for the anterior part of the tail which is mainly black but with semi-distinct yellow rings at the distal end. Markings on the dark throat are barely noticeable. The dorsum of the body has large yellowish ocelli, etched with black or very dark brown on the outer edge and with prominent dark in the centre of each ocelli; the interspaces are reddish, or reddish-brown, although colouration is all reddish or reddish brown below the mid-flank.

The limbs are prominently spotted with small, part formed yellow ocelli.

Within *O. tristis* (excluding *O. orientalis*), only *O. tristis bidjaraorum subsp. nov.* and *O. tristis balanggaraorum subsp. nov.* have large ocelli on the dorsum, with all other subspecies having ocelli that are either medium, small or absent.

Both *O. tristis* (all subspecies) and *O. orientalis* are separated from all other species of Australian varanid by the following unique combination of characters:

Tail scales are slightly keeled; the tail is not spinose and is more or less rounded in anterior cross-section, lacking any indication of a dorsal keel and about 1.5 to 2.3 times the length of the body (snout-vent). Scales on the top of the head are relatively smooth. Most of the tail lacks bands with only bands or similar present at the near anterior end and the tail is black or near black at the terminal end. There are very small subequal supraoculars, being sharply differentiated from the larger interoculars; males have a ventro-lateral cluster of strong spines on each side behind the vent. Nostrils are lateral and a bit closer to the tip of the snout than the eye. 105-155 midbody rows. Grows to about 80 cm in total length (derived mainly from the diagnosis of Cogger 2014).

O. tristis of the nominate subspecies is depicted in life online at:

<https://www.flickr.com/photos/76932919@N06/>

and

<https://www.inaturalist.org/observations/16738837>

and

<https://www.inaturalist.org/observations/186147097>

O. orientalis is depicted in life online at:

<https://www.flickr.com/photos/mattsummerville/25598048752/>

and

<https://www.flickr.com/photos/edwardevans/53482356560/>

and

<https://www.inaturalist.org/observations/203322129>

and

<https://www.flickr.com/photos/58828131@N07/53568062777/>

O. tristis nini is depicted in life online at:

<https://www.flickr.com/photos/154630905@N06/38780416765/>

and

<https://www.flickr.com/photos/valterw/476455329/>

and

<https://www.inaturalist.org/observations/142434078>

O. tristis balanggaraorum subsp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/8441352064/>

and

<https://www.flickr.com/photos/reptileshots/8441351680/>

and

<https://www.flickr.com/photos/33102730@N02/24033014323/>

O. tristis yankuntjatjaraorum subsp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/92444368>

and

<https://www.inaturalist.org/observations/199890460>

and

<https://www.inaturalist.org/observations/196947405>

O. tristis bidjaraorum subsp. nov. is depicted in life online at:

<https://www.flickr.com/photos/63728076@N05/6723855947/>

and

<https://www.inaturalist.org/observations/55873734>

Distribution: *O. tristis yankuntjatjaraorum* sp. nov. appears to be confined to the Musgrave Ranges and ranges immediately to the west in far north-west South Australia and ranges immediately adjacent in the far southwest of the Northern Territory, and adjacent Western Australia. West and north of here one finds the nominate form of *O. tristis tristis* (Schlegel, 1839). The Nullarbor to the south and Simpson Desert to the east appear to form a barrier to dispersal of the species in those directions.

Conservation: In terms of habitat conservation, the area this taxon occurs is so remote and far from centres of human activity that it has minimal conservation threats. No main roads traverse the area and the local human population is very, very sparse.

Due to the aridity of the area, there is no significant agriculture or grazing of animals by people to speak of.

The hobbyist/pet trade also poses no real threat as these lizards breed easily and any substantive demand would invariably be met mainly by captive breeding, followed by a later interest in morphs rather than the more common "wild-type forms".

Therefore, it should be treated as being of least concern.

However, the comments in Hoser (2019a-b) are relevant to this taxon.

Etymology: *O. tristis yankuntjatjaraorum* subsp. nov. (pronounced yankun-tjat-jara-orum) is named in honour of the Yankuntjatjara tribe from the northwest part of South Australia, including the ranges this subspecies occurs.

Invaders from the British Empire had no interest in the lands of these people until after World War 2, when they needed a remote "uninhabited" desert-like area to test their newly developed nuclear weapons.

A site at Maralinga in the desert about 300 km south was selected for the above ground detonations.

The radioactive clouds blew over the Aboriginal settlements and the communities have been plagued by cancers and kids born with deformities and disabilities ever since.

ODATRIA TRISTIS BIDJARAORUM SUBSP. NOV.

LSIDDurn:lsid:zoobank.org:act:C766E1C8-BFC0-477C-8D86-03D11997653B

Holotype: A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J92663 collected from Welford National Park, Queensland, Australia, Latitude -25.171667 S., Longitude 143.334722 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ A preserved specimen at the Queensland Museum, Brisbane, Queensland, Australia, specimen number J29849 collected from Bullawarra Station, 35.2 km west of Thargomindah, Queensland, Australia, Latitude -27.9 S., Longitude 143.6 E.

2/ A preserved specimen at the Queensland Museum, Brisbane,

Queensland, Australia, specimen number J8101 collected from Quilpie, Queensland, Australia, Latitude -26.616667 S., Longitude 144.266667 E.

Diagnosis: *O. tristis bidjaraorum* subsp. nov. is a taxon found in western Queensland, generally west of the Great Dividing Range, south of the Selwyn Range and outliers, east of the Simpson Desert, and extending into north-west New South Wales to about Broken Hill in the South.

It is readily separated from all the other subspecies of *O. tristis* as well as the closely related and morphologically similar species *O. orientalis* (Fry, 1913) by the following unique combination of characters:

A black head, neck and tail, except for the anterior part of the tail which is mainly black but with semi-distinct yellow rings at the distal end. Markings on the dark throat are barely noticeable. The dorsum of the body has large yellowish ocelli, etched with black or very dark brown on the outer edge and with prominent dark in the centre of each ocelli; the interspaces are reddish, or reddish-brown, although colouration is all reddish or reddish brown below the mid-flank.

The limbs are prominently spotted with small, part formed yellow ocelli.

Odatria tristis balanggaraorum subsp. nov. a taxon from the north-west Kimberley District of Western Australia. It is similar in most respects to *O. tristis nini* Hoser, 2013 from the top end of the Northern Territory and East Kimberley District of Western Australia, but is separated from that taxon as follows:

O. tristis nini has a dorsum with rows of small beige ocelli on the back running laterally across the back. The interspaces are orange and form a series of irregularly shaped dorsal crossbands.

The body is also brilliantly coloured in mature adults.

By contrast, in *O. tristis balanggaraorum* subsp. nov. the ocelli are expanded in size and number, but expanded to such a degree that they form a matrix across the back and without any form of obvious crossbands between them.

The ocelli themselves are a light salmon colour, as opposed to beige in *O. tristis nini* and they are basically against one another, thereby occupying the entire area of the upper surfaces. The interspaces are in the form of a thin and darker line of similar colour, but certainly no obvious crossbands are on the dorsum.

On the upper surfaces of the limbs, the darker markings are more prominent in *O. tristis balanggaraorum* subsp. nov., versus the small yellow spots being more prominent in *O. tristis nini*.

The subspecies *O. tristis nini* and *O. tristis balanggaraorum* subsp. nov. are both readily separated from *O. orientalis* by colour. *O. tristis nini* and *O. tristis balanggaraorum* are characterized by

an orange or yellow coloured head, including the underside, which is yellowish in colour. By contrast, *O. orientalis* (Fry, 1913) a taxon from eastern Queensland, generally associated with drainage regions running east of the Great Dividing Range, is characterized by either a greyish head, or if marked (as is commonly seen in juveniles) there are white light markings on the head, as opposed to yellowish in *O. tristis nini* and *O. tristis balanggaraorum*.

Most published books and websites as of 2024 (e.g. Cogger 2014 and Brown 2014) still treat both *O. tristis nini* and *O. tristis balanggaraorum* as *O. orientalis* and this has been known not to be the case for some years (see Hoser 2013 and Pavón Vázquez *et al.* 2023).

O. tristis (Schlegel, 1839) of the nominate form, is a taxon with a type locality of Swan River (Perth), western Australia, and is found in most parts of that state except for the Kimberley District and Musgrave Ranges, but is also found across a wide part of central Australia, extending to the south of the tropics.

O. orientalis are separated from all forms and subspecies of

O. tristis by the following characters: It has a distinct dark post-ocular stripe, well defined because of a strong white border above and below and a reticulated dorsal pattern that extends anteriorly into the head (versus not so in *O. tristis*).

In *O. tristis tristis* (Schlegel, 1839), the head and neck are always black or dominantly blackish in colour, readily separating them from *O. tristis nini*, *O. tristis balangarraorum subsp. nov.* and *O. tristis yankuntjatjaraorum subsp. nov.*, being a newly named subspecies from the Musgrave Ranges in north-west South Australia and immediately adjacent parts of the Northern Territory and Western Australia covered by the same mountain range.

O. tristis yankuntjatjaraorum subsp. nov. from the Musgrave Ranges (North west South Australia and immediately adjacent parts of WA and NT) is separated from the other subspecies of *O. tristis* by the following unique combination of characters: Red head with a white temporal streak, sometimes faded, large yellow ocelli on the upper body and upper surfaces of the limbs with reddish to yellow brown in the interspaces which are larger than just lines, but not so big as to have open spaces between ocelli; the ocelli also not being formed into any obvious rows; bold reddish markings on an otherwise white chin and gular pouch, a tail with yellow and black rings anteriorly and black distally.

Within *O. tristis* (excluding *O. orientalis*), only *O. tristis bidjaraorum subsp. nov.* and *O. tristis balangarraorum subsp. nov.* have large ocelli on the dorsum, with all other subspecies having ocelli that are either medium, small or absent.

Both *O. tristis* (all subspecies) and *O. orientalis* are separated from all other species of Australian varanid by the following unique combination of characters:

Tail scales are slightly keeled; the tail is not spinose and is more or less rounded in anterior cross-section, lacking any indication of a dorsal keel and about 1.5 to 2.3 times the length of the body (snout-vent). Scales on the top of the head are relatively smooth. Most of the tail lacks bands with only bands or similar present at the near anterior end and the tail is black or near black at the terminal end. There are very small subequal supraoculars, being sharply differentiated from the larger interoculars; males have a ventro-lateral cluster of strong spines on each side behind the vent. Nostrils are lateral and a bit closer to the tip of the snout than the eye. 105-155 midbody rows. Grows to about 80 cm in total length (derived mainly from the diagnosis of Cogger 2014).

O. tristis of the nominate subspecies is depicted in life online at:

<https://www.flickr.com/photos/76932919@N06/>

and

<https://www.inaturalist.org/observations/16738837>

and

<https://www.inaturalist.org/observations/186147097>

O. orientalis is depicted in life online at:

<https://www.flickr.com/photos/mattsummerville/25598048752/>

and

<https://www.flickr.com/photos/edwardevans/53482356560/>

and

<https://www.inaturalist.org/observations/203322129>

and

<https://www.flickr.com/photos/58828131@N07/53568062777/>

O. tristis nini is depicted in life online at:

<https://www.flickr.com/photos/154630905@N06/38780416765/>

and

<https://www.flickr.com/photos/valterw/476455329/>

and

<https://www.inaturalist.org/observations/142434078>

O. tristis balangarraorum subsp. nov. is depicted in life online at:

<https://www.flickr.com/photos/reptileshots/8441352064/>

and

<https://www.flickr.com/photos/reptileshots/8441351680/>

and

<https://www.flickr.com/photos/33102730@N02/24033014323/>

O. tristis yankuntjatjaraorum subsp. nov. is depicted in life online at:

<https://www.inaturalist.org/observations/92444368>

and

<https://www.inaturalist.org/observations/199890460>

and

<https://www.inaturalist.org/observations/196947405>

O. tristis bidjaraorum subsp. nov. is depicted in life online at:

<https://www.flickr.com/photos/63728076@N05/6723855947/>

and

<https://www.inaturalist.org/observations/55873734>

Distribution: *O. tristis bidjaraorum subsp. nov.* is a taxon found in western Queensland, generally west of the Great Dividing Range, south of the Selwyn Range and outliers, east of the Simpson Desert, and extending into north-west New South Wales to about Broken Hill in the South.

Conservation: In terms of habitat conservation where this taxon occurs, two centuries of British settlement of the area and their attempts at agriculture and grazing have largely failed.

In many parts of western Queensland unviable farming enterprises have shut down and abandoned the land. This means that overgrazed and degraded habitat has begun to mend and privately owned conservation groups have been able to buy up large tracts of land and convert them to "wildlife reserves".

Hence this taxon is not under any ongoing threat of decline through any further habitat loss.

The hobbyist/pet trade also poses no real threat as these lizards breed easily and any substantive demand would invariably be met mainly by captive breeding, followed by a later interest in morphs rather than the more common "wild-type forms".

Therefore, it should be treated as being of least concern.

However, the comments in Hoser (2019a-b) are relevant to this taxon.

Etymology: *O. tristis bidjaraorum subsp. nov.* (pronounced bid-jara-orum) is named in honour of the Bidjara tribe from south-west Queensland, Australia, being the original human inhabitants of the region.

While the British invaders simply killed these natives and drove them from their lands in an act of genocide, done in order to allow the squatters to graze sheep and cattle, probably a greater number died from introduced diseases like smallpox rather than from direct killing.

Today most of the natives that remain eke out a miserable existence scavenging in the small regional towns and living under sheets of tin on the outer edges of these towns.

That is when the local racist Queensland Police aren't rounding up natives to bash or kill in the police cells.

PANTHEROSAURUS WAMSLEYI SP. NOV.

LSID[Durn:lsid:zoobank.org:act:94F0C60C-0047-4623-B640-B51848C66B5E](https://zoobank.org/act:94F0C60C-0047-4623-B640-B51848C66B5E)

Holotype: A preserved specimen at the South Australian Museum, Adelaide, South Australia, Australia, specimen number R56523 collected from the Playford Highway, at the junction of Ahlwans Road, Kangaroo Island, South Australia, Australia, Latitude -35.8083 S., Longitude 137.1 E.

This government-owned facility allows access to its holdings.

Paratypes: 1/ Two preserved specimens at the South Australian

Museum, Adelaide, South Australia, Australia, specimen numbers R13832 and R13845 collected from Kangaroo Island, South Australia, Australia, Latitude -35.83 S., Longitude 137.17 E.

2/ Three preserved specimens at the National Museum of Victoria, Melbourne, Victoria, Australia, specimen numbers D53500 (male), D55455 and D55628 (female) collected from the southern edge of the Wyperfeld National Park in western Victoria, Australia, Latitude -35.88 S., Longitude 141.66 E.

Diagnosis: Until now, the three taxa, *Pantherosaurus rosenbergi* (Mertens, 1957), *P. kuringai* Wells and Wellington, 1985 and this newly described species *P. wamsleyi* sp. nov. have been treated by most publishing herpetologists as a single pan-Australian species.

With morphological divergence between the three forms and molecular divergences of at least 1.5 MYA between each population, combined with zero introgression due to wide zones of absence over an extended geological time frame treatment of the three taxa as one is simply not tenable.

P. rosenbergi, type locality of Monigup pass, Stirling Range, Western Australia is a taxon confined to the coast and near coastal region of south-west Australia in an area extending from just east of the South Australian border in the east, along the south coast of Western Australia and north to the Perth metropolitan area.

P. wamsleyi sp. nov. is the taxon found from the lower Eyre Peninsula in South Australia in the west, across nearby coastal islands to the east, including Kangaroo Island, the largest of these, into the dry zone of far south-east South Australia and nearby west Victoria north and east to the Wyperfeld National Park.

P. kuringai Wells and Wellington, 1985 is the taxon found mainly on the lower sandstone escarpments of the Sydney basin, in particular the national parks to the north and south of Sydney (e.g. Kuringai Chase, Brisbane Water National Park, Murrumbidgee National Park, Dharug National Park, Royal National Park, Heathcote National Park, etc), but found in a region extending south of the Hunter Valley to the Victorian side of the New South Wales border near Corryong, Victoria.

The three species are separated from each other as follows:

P. rosenbergi is stocky in build. It is generally blackish in colour, with well-defined black crossbands on the dorsum, flanks and extending down the tail, the outer edges being clear and well-defined. Gular reticulations are thick and black and also well-defined on a white background.

Upper surfaces of the anterior forelimbs are well-banded. Yellow spots on the upper surfaces of the limbs are small and faded, even in most younger specimens.

Dark tail bands are thinner than or slightly thicker than the light, although widening of the lighter bands at the lower part of the tail often reverses this as well. In both *P. wamsleyi* sp. nov. and *P. kuringai* the darker tail bands are consistently considerably wider than the light ones.

In *P. rosenbergi* the tail bands are better defined anteriorly than posteriorly.

P. wamsleyi sp. nov. is also a stocky lizard. It is generally blackish in colour, with black crossbands on the dorsum, flanks and extending down the tail, the outer edges not being clear and well-defined, except in juveniles. The crossbands themselves are also heavily infused with white speckling inside the outer edges. Gular markings tend towards speckling rather than the reticulations as seen in *P. rosenbergi*. Upper surfaces of the anterior forelimbs are not well-banded. Yellow spots on the upper surfaces of the limbs are of moderate size and prominent.

In *P. wamsleyi* sp. nov. the tail bands are of similar intensity along the length of the tail.

This species is also differentiated from the other two species in having heavy infusions of white or yellow speckling or spots in

the darker crossbands of the tail along most of its length.

P. kuringai is of similar build to *P. rosenbergi* but is readily separated from that taxon by being a generally greyish, rather than blackish lizard. Dark crossbands are narrower than in the other two species, poorly defined and the wider and lighter interspaces consist of skin the same colour as the dark crossbands but heavily speckled white or yellow, giving the unique (among the three species) appearance of being a lizard that is greyish and fairly evenly heavily speckled whitish all over.

Yellow spots on the upper surfaces of the limbs are small to medium, widely spaced, well defined and prominent.

In *P. kuringai* the tail bands are better defined posteriorly than anteriorly.

The three preceding species are separated from all other species within the genus *Pantherosaurus* Fitzinger, 1843 as defined by Hoser (2013) including all subgenera, by having a greyish or blackish dorsal colouration, versus yellowish in all others, excluding *Aspetosaurus* Wells and Wellington, 1985 and *Aquativanus* Hoser, 2013.

Aspetosaurus are separated from all others in the genus *Pantherosaurus* by their exceptionally heavy build; a tail that is no more than 1.2 times as long as the head and body; rugose scales on the upper side of the basal part of the tail and nostrils directed laterally.

Aquativanus are separated from all other *Pantherosaurus* by having an elongate and slim build; their nostrils directed upwards and a very high and strong caudal keel.

P. rosenbergi is depicted in life in Brown (2014) on page 821 bottom right and second from bottom on left, Cogger (2014) on page 781 at bottom, Wilson and Swan (2021) on page 517 at top right and online at:

<https://www.flickr.com/photos/139249833@N02/30613193674/>

and

https://www.flickr.com/photos/zimny_anders/52445269308/

and

<https://www.flickr.com/photos/jaricornelis/49951398581/>

and

<https://www.flickr.com/photos/54876436@N08/5094877841/>

and

<https://www.inaturalist.org/observations/191332199>

and

<https://www.inaturalist.org/observations/35666138>

and

<https://www.inaturalist.org/observations/96220970>

P. wamsleyi sp. nov. is depicted in life in Brown (2014) on page 821 bottom left and online at:

<https://www.flickr.com/photos/88708273@N03/53297418489/>

and

<https://www.flickr.com/photos/88708273@N03/53297042341/>

and

<https://www.flickr.com/photos/paulthreiffall/23972633736/>

and

<https://www.flickr.com/photos/gondwanareptileproduction/40610160093/>

and

<https://www.flickr.com/photos/96574168@N02/11845567153/>

and

<https://www.flickr.com/photos/mattsummerville/33116148238/>

and

<https://www.flickr.com/photos/jpmckenna/6871824437/>

and

https://www.facebook.com/permalink.php?story_fbid=pfbid02ZwKdGMf5AZtL9stVhbi8TAp734iNtwCK1peGGm2hr64aEgDzDZmkDwYgaGseG8AwI&id=100064539106005

P. kuringai is depicted in life in Brown (2014) on page 821 second from bottom on right and page 822 at top left, in Hoser (1989) on page 115 at top right and middle right and online at: <https://www.flickr.com/photos/146479766@N08/31246116334/> and

<https://www.flickr.com/photos/moloch05/46086645181/> and

<https://www.flickr.com/photos/euprepisaur/2301655542/>

Distribution: *Pantherosaurus wamsleyi* sp. nov. is found from the lower Eyre Peninsula in South Australia in the west, across nearby coastal islands to the east, including Kangaroo Island, the largest of these, into the dry zone of far south-east South Australia and nearby west Victoria north and east to the Wyperfeld National Park.

Etymology: Named in honour of Dr. John Wamsley born in Ourimbah, New South Wales in 1938 and who became one of Australia's wildlife conservation icons.

He founded the hugely successful Warrawong Sanctuary in the Adelaide Hills, expanding later to form Earth Sanctuaries Limited (ESL) which was floated on the Australian Stock Exchange (ASX) in 2000.

At its peak, ESL had 11 prospective sanctuaries in 3 states accounting for 100,000 hectares.

ESL was enormously successful in rewilding and ecosystem restoration projects.

By pioneering feral-proof fencing, endangered native Australian animals were successfully re-introduced where they were locally extinct and bred in massive numbers.

His success embarrassed corrupt State Government wildlife departments hell-bent on creating rarity and extinctions for their own financial self-enrichment including via their government-owned zoos business.

ESL was therefore regulated out of existence to ensure that the business model failed and John Wamsley effectively lost his entire life's works.

For further details refer to Hoser (2014) at page 6.

It should be noted that the snake genus name *Walmsleyus* Hoser, 2014 is based on a misspelling of John Wamsley's name. As first revisor of that work (this work, this paper), I herein make it known that the spelling of that genus should not be corrected to match the spelling of his name or otherwise altered or amended and therefore it is to remain "as is".

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CONFLICT OF INTEREST

None.

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