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The break up of *Odatria* (*Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) into three obvious subspecies.

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ABSTRACT

Interest in the taxonomy and nomenclature of Australasian Monitors has had a resurgence in year 2014.

This was precipitated by the publication of Hoser (2013) that produced a family-wide revision of the genus-level taxonomy, as well as description of new species and subspecies from Australasia. Maryan *et al*. (2014) has more recently divided the West Australian species *Odatria* (*Pilbaravaranus*) *pilbarensis* (Storr, 1980) into two on the basis of clear morphological and molecular evidence, formally naming the species found south of the Fortescue River.

This paper continues the dissection of the Australian varanids, with the division of the well-known and widespread species, *Odatria* (*Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) into three formally described and named subspecies, two being named according to the Zoological Code (Ride *et al*. 1999) for the first time.

Keywords: Taxonomy; Australasia; Northern Territory, Western Australia; Queensland; Varanids; Monitors; *Varanus*; *Odatria*; *Kimberleyvaranus*; *glebopalma*; new subspecies; *funki*; *maderi*.

INTRODUCTION

Until now, most species within the family Varanidae have been treated by taxonomists as being within a single genus, namely *Varanus* Merrem, 1820. This is in effect a rehash of the family name that also accommodates all the same quite divergent species.

For many years, this was not particularly problematic, as the number of described species was relatively few.

However in the past 3 decades the number of recognized species has doubled to include well over 80 named and widely recognized species.

This number does not include further species awaiting scientific recognition and/or formal description.

In the face of the anomaly of all being wrongly placed in a single genus and the fact that this relatively ancient group of lizards distributed across a number of continents is clearly paraphyletic at the genus level, Hoser (2013) for the first time ever did a family-wide review of the group and identified obvious divisions at the tribe, genus and subgenus level.

The taxonomy and nomenclature of that paper is adopted herein on the basis that it is fully supported both on the basis of morphological and molecular evidence as cited in Hoser (2013).

At the species level, Hoser (2013) named several obviously distinct, but previously unnamed taxa, defining them variously as species and subspecies.

Because Hoser (2013) is widely available in both hard copy and on the internet, there is no need for me to repeat the information summarised within that paper and the published material that formed the basis of the content of that paper.

Where relevant here, this material is relied upon herein.

In 2014, Maryan *et al.* quite properly defined yet another species of monitor from the Pilbara, resulting from the division of *Odatria* (*Pilbaravaranus*) *pilbarensis* (Storr, 1980) into two on the basis of clear morphological and molecular evidence, formally naming the species found south of the Fortescue River.

I had intended naming this taxon myself, but was scooped by Maryan *et al.*.

Respecting the rules of zoological nomenclature (Ride *et al.* 1999), I will not now attempt to engage in Kaiser *et al.* sanctioned taxonomic vandalism by overwriting validly proposed names that should be used according to the fundamental rule of priority (Kaiser 2012a, 2012b and Kaiser *et al.* 2013).

This is in spite of the fact that Maryan *et al.* published their paper in the PRINO (peer reviewed in name only) journal *Zootaxa*, leading some Kaiser *et al.* proponents to decree the paper "unscientific" and the name proposed within therefore being available to be overwritten in violation of the Zoological Code.

This paper continues the dissection of the Australian varanids, with the division of the well-known and widespread species, *Odatria* (*Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) into three formally described and named subspecies, two being named according to the Zoological Code (Ride *et al.* 1999) for the first time.

ODATRIA (*KIMBERLEYVARANUS*) *GLEBOPALMA* (MITCHELL, 1955)

The taxon *Odatria* (*Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) as currently recognized is a widespread species, with a range extending from the Mount Isa region of Queensland, west

across the rocky areas of the tropical north of Australia to include the Kimberley Ranges of Western Australia.

The type locality for the species is the southern end of Lake Hubert on Groote Eylandt, Northern Territory and no other regional forms have been formally described and named.

As part of a wide-ranging audit of Australian monitors, it was found that the current distribution for *O. glebopalma* is not continuous as shown in most distribution maps in books such as Cogger (2014).

Within the known range of the species, it is clearly confined to saxacoline habitats and within three regional clusters.

These are the rocky region extending north from around Mount Isa in Queensland along the Northern Territory Coast to the far north and including Groote Eylandt and Nhulunbuy; the region encompassing the Arnhem Land Plateau and Kakadu National Park, as well as Litchfield National Park; and the region encompassing the Kimberley Ranges in northern Western Australia.

Morphologically, each population was found to be quite distinct from one another with them each requiring taxonomic recognition.

However in the absence of molecular data I have decided to take a conservative approach and formally name each as a new subspecies according to the Zoological Code (Ride *et al.* 1999).

Descriptions of the species *Odatria* (*Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) and its habits in the literature to date include the following notable publications: Bennett (2003a, 2003b), Cogger (2000, 2014), De Lisle (1996), Eidenmüller (2007a, 2007b), Frydlova and Frynta (2010), Hörenberg and Koch (2013), Horn and Schürer (1978), Hoser (2013), Mertens (1958), Mitchell (1955), Pianka and King (2014), Sprackland (2001), Storr (1980), Swanson (1979), Wilson and Swan (2010), and relevant cited sources therein.

Most texts refer to the taxon under the better-known name "*Varanus glebopalma*".

The diagnosis for the species *Odatria* (*Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) is as for the subgenus, because it is currently regarded as monotypic for the species.
The diagnosis for the subgenus, taken from Hoser (2013) is given below, before the formal descriptions of each of the three subspecies.

SUBGENUS *KIMBERLEYVARANUS SUBGEN. NOV.*

Type species: *Varanus* (*Odatria*) *glebopalma* Mitchell, 1955.

Diagnosis: The subgenus *Kimberleyvaranus subgen. nov.* within the genus *Odatria* is separated from all other living varanids by the following suite of characters: supraocular scales are subequal; the keels of the caudal scales are sometimes very strong, but never spinose; the tail is either round in section or somewhat dorsoventrally compressed, or at the very most, very slightly laterally compressed in the last half; there is no obvious median double keel dorsally along the tail; the scales on the top of the head are smooth; the tail is longer than the head and body, being well over twice as long as the head and body (unbroken and intact tail); tail pattern if present, is transversely aligned distally; the last half of the tail is a distinctive creamy white to yellow in colour; the tubercles on the lower surfaces of the feet are large and glossy being a very dark brown or black in colour.

The subgenus *Kimberleyvaranus subgen. nov.* is further defined as follows: Colouration is dorsally black with individually fawn coloured scales which form a reticulum on the flanks (where they predominate over the black) or alternatively small black centred ocelli on the midline (where black predominates). The top of the head and upper surfaces of the limbs are black with small cream or fawn flecks and spots, clustering to form larger spots on the limbs. The anterior half of the tail is mostly black above and the posterior half is a distinct creamy white to yellow in colour. The throat is white with a broad reticulum of light purplish fawn extending on to the sides of the throat, but forming bars on the lower lips. The belly and chest are white with indistinct transverse bars of light purplish fawn. The tail and limbs are creamy yellow below. Palms and soles have rounded shiny, very dark brown or black scales. The head scales are smooth, irregular and very small. The nostrils are much nearer to the tip of the snout than the eye and lateral in position. 130-170 scales around the middle of the body. Caudal scales are smooth or with low keels.

Distribution: Rocky habitats in tropical Australia from far western Queensland across to the West Kimberley in Western Australia and including larger rocky immediately adjacent offshore islands.

Etymology: Named in reference to where the monotypic subgenus is best known from and the centre of its present distribution.

Content: *Odatria (Kimberleyvaranus*) *glebopalma* (Mitchell, 1955) (monotypic).

***ODATRIA* (*KIMBERLEYVARANUS*) *GLEBOPALMA GLEBOPALMA* (MITCHELL, 1955)**

Holotype: A specimen at the South Australian Museum, specimen number: SAMA R3222 from the south end of Lake Hubert, Groote Eylandt, NT, Australia.

Diagnosis: The nominate subspecies is separated from both the other subspecies on the basis of colouration.

In this subspecies, there is a generally speckled pattern dorsally and little if any black anterior to the eye.
No reticulated pattern or banding is on the neck and upper body and if markings are present on the body, they tend towards neither a reticulated pattern or banding. Hatchlings may have a very faint reticulated pattern at the head and fore-body, and this is as opposed to being very distinct and well-marked in hatchlings in the Arnhem land form namely *Odatria* (*Kimberleyvaranus*) *glebopalma funki subsp. nov.*.

Otherwise the diagnosis for this subspecies is as for the subgenus *Kimberleyvaranus* Hoser, 2013.

Distribution: The region from Mount Isa Queensland, generally north along the east Northern Territory (NT) coast and including Groote Eylandt (the type locality), Nhulunbuy and Marchinbar Island, Northern Territory, Australia.

ODATRIA* (*KIMBERLEYVARANUS*) *GLEBOPALMA FUNKI SUBSP. NOV.

Holotype: A specimen held at the Northern Territory Museum, Australia, specimen number: R.34420 collected from the Stuart Highway NT, Lat 13.48, Long 131.18.
The Northern Territory Museum in Darwin, NT, Australia is a government-controlled facility that allows access to specimens by scientists.

Paratype: A specimen number R51900 collected from Mount Carr, Adelaide River Township, Northern Territory, Australia, held at the Australian Museum in Sydney, Australia.

The Australian Museum in Sydney, Australia is a government-controlled facility that allows access to specimens by scientists.

Diagnosis: *Odatria* (*Kimberleyvaranus*) *glebopalma funki subsp. nov.* is readily separated from both other subspecies of *O. glebopalma* by the obvious dorsal patterning including an obvious and distinct reticulated pattern at the head and fore-body, which is not seen in either other two subspecies.

Otherwise the diagnosis for this subspecies is as for the subgenus *Kimberleyvaranus* Hoser, 2013.

Distribution: The region encompassing the Arnhem Land Plateau and Kakadu National Park, as well as Litchfield National Park all within the Northern Territory.

Etymology: Named in honour of Mesa, Arizona, USA, herpetologist and veterinary surgeon, Dr. Richard Funk, in recognition of many years of contributions to herpetology.

Top image: *Odatria (Kimberleyvaranus) glebopalma funki subsp. nov* holotype (larger specimen on right) and a specimen of *Odatria (Kimberleyvaranus) glebopalma maderi subsp. nov.* (not the holotype).
Right and below: *Odatria (Kimberleyvaranus) glebopalma funki subsp. nov.* holotype.

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ODATRIA* (*KIMBERLEYVARANUS*) *GLEBOPALMA MADERI SUBSP. NOV.

Holotype: A specimen at the Australian Museum in Sydney, NSW, Australia, specimen number: R.136112 from Surveyors Pool on a Tributary of Mitchell River, Mitchell Plateau, Western Australia, Australia.

The Australian Museum in Sydney, Australia is a government-controlled facility that allows access to specimens by scientists.

Paratype 1. A specimen at the Western Australian Museum, Perth, Australia, specimen number: R43121 collected from Surveyors Pool on a Tributary of Mitchell River, Mitchell Plateau, Western Australia, Australia.

Paratype 2. A specimen at the Western Australian Museum, Perth, Australia, specimen number: R60668 collected from Camp Creek, Mitchell Plateau, Western Australia, Australia.

The Western Australian Museum in Perth, Australia is a government-controlled facility that allows access to specimens by scientists.

Diagnosis: The subspecies *Odatria* (*Kimberleyvaranus*) *glebopalma maderi subsp. nov.* is separated from the other two subspecies of *O. glebopalma* as follows:

It is diagnosed as for the nominate subspecies but separated from it by the presence of a distinct dark stripe or similar, anterior to the eye and running to it. No reticulated pattern is present on the fore-body or if there is one, it is tending towards indistinct bands (peaking near the hind limbs where occeli form into bands). This tending towards bands is most notable in juveniles, which have a colouration consisting of moderately obvious darker and lighter cross-bands. These bands are discernible in all specimens, though less distinct with age. Some specimens have a distinct pattern of oversized brownish occelli across the entire dorsal body, not forming any kind of reticulation pattern as seen in *Odatria* (*Kimberleyvaranus*) *glebopalma funki subsp. nov.*.

The reticulation pattern as seen in *Odatria* (*Kimberleyvaranus*) *glebopalma funki subsp. nov.*. separates that taxon from *Odatria* (*Kimberleyvaranus*) *glebopalma maderi subsp. nov.*.

Otherwise the diagnosis for this subspecies (*Odatria* (*Kimberleyvaranus*) *glebopalma maderi subsp. nov.*) is as for the subgenus *Kimberleyvaranus* Hoser, 2013.

Distribution: The region encompassing the Kimberley Ranges in northern Western Australia and immediately adjacent parts of far western Northern Territory.

Etymology: Named in honour of USA-based, herpetologist and veterinary surgeon, Dr. Douglas Mader, in recognition of many years of contributions to herpetology including through his numerous books and publications in the herpetological literature.

REFERENCES CITED

Bennett, D. F. 2003a. Australische Warane. *Reptilia* (Münster) 8(43):18-25.

Bennett, D. F. 2003b. Australian Monitors. *Reptilia* (GB) (30):12-19

Cogger, H. G. 2000. *Reptiles and Amphibians of Australia*, (Sixth edition). Ralph Curtis Publishing, Sanibel Island, USA:808 pp.

Cogger, H. G. 2014. *Reptiles and Amphibians of Australia*, (Seventh edition). CSIRO Publishing, NSW, Australia.

De Lisle, H. F. 1996. *Natural History of Monitor Lizards*. Krieger, Malabar, Florida, USA.

Eidenmüller, B. 2007a. Small monitors in the terrarium. *Reptilia* (GB) (50):12-19.

Eidenmüller, B. 2007b. Kleinwarane im Terrarium. *Reptilia* (Münster) 12(63):16-23.

Frydlova, P. and Frynta, D. 2010. A test of Rensch's rule in varanid lizards. *Biological Journal of the Linnean Society* 100:293-306.

Hörenberg, T. and Koch, A. 2013. Die Zwergwarane der Untergattung *Odatria* Gray, 1838. *Draco* 13 (53):6-19.

Horn, H. G. and Schürer, U. 1978. Bernerkungen zu *Varanus* (*Odatria*) *glebopalma* Mitchell, 1955 (Reptilia: Sauria: Varanidae). *Salamandra* 14:105-116.

Hoser, R. T. 2013. Monitor Lizards reclassified with some common sense (Squamata: Sauria: Varanidae). *Australasian Journal of Herpetology* 21:41-58.

Kaiser, H. 2012a. SPAM email sent out to numerous recipients on 5 June 2012.

Kaiser, H. 2012b. Point of view. Hate article sent as attachment with SPAM email sent out on 5 June 2012.

Kaiser, H., Crother, B. L., Kelly, C. M. R., Luiselli, L., O'Shea, M., Ota, H., Passos, P., Schleip, W. D. and

Wüster, W. 2013. Best practices: In the 21st Century, Taxonomic Decisions in Herpetology are Acceptable Only When supported by a body of Evidence and Published via Peer-Review. *Herpetological Review* 44(1):8-23.

Maryan, B., Oliver, P. M., Fitch, A. J. and O'Connell, M. 2014. Molecular and morphological assessment of *Varanus pilbarensis* (Squamata: Varanidae), with a description of a new species from the southern Pilbara, Western Australia. *Zootaxa* 3768(2):139-158.

Mertens, R. 1958. Bemerkungen über die Warane Australiens. *Senckenberg. Biol.* 39:229-264.

Mitchell, F. J. 1955. Preliminary account of the Reptilia and Amphibia collected by the National Geographic Society - Commonwealth Government - Smithsonian Institution Expedition to Arnhem Land (April to November, 1948). *Rec. South Austral. Mus.* 11:373-408.

Pianka, E. R. and King, D. R. (eds). 2004. *Varanoid Lizards of the World*. Indiana University Press, USA:599 pp.

Ride, W. D. L. (ed.) *et al.* (on behalf of the International Commission on Zoological Nomenclature) 2000. *International code of Zoological Nomenclature*. The Natural History Museum, Cromwell Road - London SW7 5BD, UK (also commonly cited as "ICZN 1999").

Sprackland, R. G. 2001. Dwarf monitors. *Reptile and Amphibian Hobbyist* 6(10):8-16.

Storr, G. M. 1980. The monitor lizards (genus *Varanus* Merrem, 1820) of Western Australia. *Rec. West. Aust. Mus.* 8(2):237-293.

Swanson, S. 1979. Some rock-dwelling reptiles of the Arnhem Land escarpment. *Northern Territory Naturalist* 1:14-18

Wilson, S. and Swan, G. 2010. *A complete guide to reptiles of Australia*, (Third edition). New Holland, Chatswood, NSW, Australia:558 pp.