

**A new species within the *Odatria timorensis*  
(Squamata: Varanidae) species complex.**

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**ABSTRACT**

As part of an ongoing audit of the Varanidae, an unnamed taxon related to *Odatria timorensis* (Gray, 1831) from Sawu Island, Indonesia was identified.

It is formally named *Odatria sawuensis* sp. nov. in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended online since.

**Keywords:** Taxonomy; nomenclature; Varanidae; *Odatria*; *Varanus*; *timorensis*; *auffenbergi*; Indonesia; Timor; Roti, Semau; Sawu; Savu; new species; *sawuensis*.

**INTRODUCTION**

As part of an ongoing global audit of the Varanidae, specimens of putative "*Varanus timorensis*" from Sawu island were located in private reptile collections.

Morphologically these were most similar to either *Monitor timorensis* Gray, 1831 with a type locality of Timor, or *Varanus auffenbergi* Sprackland, 1999, with a type locality of Roti Island. Roti Island lies offshore from Timor and is connected by shallow seas. It sits between Timor and Sawu. However those two islands (Roti and Timor) are separated from Sawu by a deep sea channel, that was not a land bridge during ice-age maxima, giving rise to a belief that the Sawu island population has been isolated for an extended geological period.

As a result, I decided to audit specimens of putative "*Varanus timorensis*" from the three islands to ascertain their taxonomic status and whether or not species level recognition for each was warranted. I also note that Wells and Wellington (1984 and 1985) transferred the relevant species group to the pre-existing genus name *Odatria* Gray, 1838.

Hoser (2013) found this designation as logical and based on good science and so adopted it. More recently Bucklitsch *et al.* (2016) effectively copied the Hoser (2013) taxonomy and also used the generic name *Odatria*.

**MATERIALS AND METHODS**

Prior to the final taxonomic decisions being made as executed in this paper, I inspected numerous specimens assigned to *O. timorensis* (Gray, 1831) and *O. auffenbergi* (Sprackland, 1999) from across the range of all the relevant putative taxa. These have included specimens in government-owned State Museums, for which acknowledgement is not normally explicitly given here or in my other taxonomic papers as it should be assumed by any vaguely sensible reader. I have also seen numerous relevant specimens in life and by way of quality photos of specimens with known locality data.

I also consulted relevant literature with a view to reading original

descriptions of potentially relevant taxa, synonym forms previously named and molecular studies that may give clues as to the number of taxa actually involved in the relevant area (the *O. timorensis* group) in terms of the putative species.

This included Ast (2001), Brennan *et al.* (2021), Cogger *et al.* (1983), Cogger (2014), de Lisle (1996), de Rooij (1915), Duméril and Bibron (1836), Fitch *et al.* (2006), Gray (1831), Mertens (1941, 1942, 1958), Sprackland (1999), Storr (1980), Weigel (1985), Wells and Wellington (1984, 1985) and sources cited therein. I also checked for available synonyms of which there were none for the Sawu Island population at least.

**RESULTS**

Ast (2001) wrote:

"*auffenbergi* may be a synonym for *timorensis*."

But gave no information or evidence to support the claim. However my inspection of specimens from the relevant islands did raise an interesting situation.

Most *O. timorensis* from Timor did seem to be morphologically distinct from the type form of *O. auffenbergi* in that adult specimens have a greyish brown dorsum covered in small yellow-white spots.

However specimens from about the last fifth of the island, being on the south-west end, that being nearest to Roti Island, were morphologically similar to type *O. auffenbergi* in that the dorsal spots were expanded to form distinctive large ocelli, as were numerous individuals elsewhere on the island, in particular the far north-east corner.

In the absence of many apparently intermediate specimens (there were some) or molecular data for all these lizards I was unable to ascertain whether these forms were of the same species or not, or for that matter whether or not there were in fact more than two taxa involved.

However, based on the geographical proximity of the two islands, being that Pulau Roti, is only about 10 miles (16 km)

southwest of Timor across the shallow and narrow Roti Strait, I formed the tentative view that the morphologically similar lizards from south-west Timor were in fact conspecific.

I note that the two land masses were well and truly connected during times of recent glacial maxima.

The only serious question in my mind was whether those from further east on the same Island (Timor), were the same, or of a different species or subspecies.

Brennan *et al.* (2021) appears to have answered this conundrum with molecular results indicating no significant divergence between the lizards from Timor and Roti, with both *O. timorensis* and *O. auffenbergi* best treated as conspecific being the only logical conclusion based on the Brennan *et al.* (2021) results.

The putative *O. timorensis* from Sawu are however morphologically divergent from the populations of putative *O. timorensis* from Timor, Roti and the immediately adjacent Semau Island.

Sawu and the other three islands are also separated by more than 50 km in a straight line of open ocean, most of which was still open ocean during ice age maxima, based on current sea-level depth of below 200 metres.

That was not the case for the three islands of Timor, Roti and Semau, all of which were well connected by solid land bridges.

Because of the relative isolation of the Sawu population and consistent morphological differences, the Sawu population is formally named herein as a new species, *O. sawuensis* sp. nov..

I also note that the Water Pythons from Sawu Island are generally regarded as taxonomically separated from those of Timor (Hoser, 2000, Carmichael, 2007, De Lang 2011) and have been presumably isolated by the same or similar biogeographical factors as the *O. timorensis* related species.

In terms of the scientific name formally assigned to the new species, it should not be amended in any way unless absolutely mandatory under the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999) as amended online since.

The description does, unless otherwise stated, refer to adult specimens in good health and in the absence of factors such as ill health, excessive stress, injury, aging or similar.

Online material cited either in text or in the references was last checked as being online as cited on 14 March 2022.

#### **ODATRIA SAWUENSIS SP. NOV.**

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**Holotype:** A preserved specimen in the Western Australian Museum, Perth, Western Australia, Australia, specimen number WAM REPT R105488, collected from Menia, Savu Island (AKA Savu), East Nusa Tenggara, Indonesia, Latitude -10.483333 S., Longitude 121.916667 E.

This government-owned facility allows access to its holdings.

**Diagnosis:** Until now *O. sawuensis* sp. nov. has been treated as a population of putative *O. timorensis* (Gray, 1831).

However it is readily separated from that taxon, both the type form and type *O. auffenbergi* (Sprackland, 1999), herein treated as one and the same species, by the following suite of characters: The yellow-white line running from the eye through the ear, situated below the black temporal streak is not relatively straight and is also broken, versus relatively straight, at least along the midline and not broken in *O. timorensis* (and similar Australian forms such as *O. scalaris*); the gular region is heavily mottled and marked with dark brown, versus not so in *O. timorensis*; adults are generally dark brown in colour on the dorsum, versus grey or light brown with considerable grey in *O. timorensis*. For *O. sawuensis* sp. nov., at the anterior end of the lower jaw, the brown markings tend to form reticulations, which is not the case in *O. timorensis* which is mainly white on the scales of the anterior lower jaw.

Australian putative *O. scalaris* (Mertens, 1941), including the

type form from Western Australia, *O. similis* (Mertens, 1958) from Groote Eylandt, Northern Territory, *O. kuranda* Wells and Wellington, 1985, from Kuranda in the Queensland wet-tropics and *O. pengilleyi* Wells and Wellington, 1985, from near Iron Range on upper Cape York, Queensland are all separated from the preceding two species (*O. timorensis* and *O. sawuensis* sp. nov.) by having a mainly white lower jaw and gular region that is punctuated with an arrangement of large distinctive dark spots.

For the Australian species just listed, molecular evidence published supports all of them as valid at the species level, save for *O. pengilleyi* for which no evidence is available to me.

My own inspection of specimens confirms that those from the tip of Cape York do appear to be significantly different from those further south in the wet tropics as identified by Wells and Wellington (1985). However specimens I have seen from the Iron Range area and dry areas to the west of there, seem to conform more to those further south, as opposed to those from the tip of Cape York, the offshore islands to the north and nearby southern New Guinea. So in the absence of inspection of the holotype and an absence molecular data, I cannot confirm or deny the status of the putative taxon *O. pengilleyi*.

All the preceding species are separated from all other Australian varanid lizards by the following suite of characters:

Colouration is dark above and whitish flecks, spots or ocelli on the dorsum. The arrangement of the spots, flecks or ocelli does vary between individuals and also generally by locations as well. The black temporal stripe, somewhat ill defined is bounded below in some form by a yellow line from the mid eye, through the ear. Limbs are dark and spotted white, cream or yellow. Tail is dark and with regular or irregular whitish rings, transversely arranged distally, but not spinose. Head scales are small and smooth with the smaller subequal supraoculars more-or-less merging with the somewhat larger interoculars. Nostrils are lateral, only slightly nearer the tip of the snout than to the eye. 95-135 rows of scales around the midbody. Tail is roundish in cross-section, without any indication of a median dorsal keel. There are several ventro-lateral rows of enlarged keeled scales on each side behind the vent. Tail is about 1.5 times the length of the head and body. Total length is about 60 cm.

*O. sawuensis* sp. nov. is depicted online in images at:

<https://www.flickr.com/photos/162809684@N05/49633446913> and

<https://www.flickr.com/photos/162809684@N05/49549380376/>

**Distribution:** *O. sawuensis* sp. nov. almost certainly only occurs in Sawu Island, Indonesia.

**Etymology:** *O. sawuensis* sp. nov. is named in reflection of where it occurs.

**Conservation:** The island of Sawu has an area of just 459.6 km and a population of 89,327 (in the 2020 Census), which is 194.36 people per square kilometre (compared to 3.3 people per square km in Australia in 2021), meaning all wildlife on the island of Sawu is under extreme pressure.

Forced non-recognition of this taxon through the illegal actions of the Wolfgang Wüster gang of thieves as outlined by Hawkeswood (2021), Hoser (2007, 2009, 2012a, 2012b, 2013a, 2013b, 2015a-f, 2019a-b), (ICZN 2021) and sources cited therein can only put this species at greater risk of extinction as seen for example in taxa identified as extinct in Hoser (2019b).

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**CONFLICT OF INTEREST**

There are no conflicts of interest.