

**The Iconic Australian Copper-tailed Skink *Ctenotus taeniolatus* (White, 1790) split.
A sign of severely under-estimated species diversity in Australia's smaller lizards.**

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ABSTRACT

For decades it has been known that species diversity in Australia's lizards has been severely under-estimated (Wells and Wellington, 1983, 1985).

In the case of the well-known Copper-tailed Skink *Ctenotus taeniolatus* (White, 1790), with a type locality of New South Wales, this putative taxon occurs from Victoria to North Queensland, along the coast, ranges and nearby slopes.

Wells and Wellington formally named *Ctenotus miowera* from the town with the same name, which is between Proserpine and Bowen, north Queensland in 1985.

But as for most other skinks formally named by the pair in that paper, a group known as the Wolfgang Wüster gang of thieves has done an excellent job at forcing most other publishing herpetologists to pretend that the works of Wells and Wellington did not exist and likewise that the taxa they identified did not exist either.

At least one species formally identified by Wells and Wellington (1985), being resurrected from earlier synonymy, has now become extinct arising from the anti-science suppression actions of the Wolfgang Wüster gang of thieves (Hoser 2019a, 2019b).

Relying on inspection of living and dead specimens and the molecular study of Colgan *et al.* (2009), this paper formally recognizes *Ctenotus miowera* as a valid species and formally names another related species in the complex as *C. robertcooki* sp. nov. being from the New England Region of northern New South Wales and with a divergence of 1.75 MYA or more from the nominate form of *C. taeniolatus*.

Keywords: Taxonomy; nomenclature; Australia; Queensland; New South Wales; New England; lizard; skink Copper-tailed skink; *Ctenotus*; *taeniolatus*; *miowera*; new species; *robertcooki*.

INTRODUCTION

For decades it has been known that species diversity in Australia's lizards has been severely under-estimated (Wells and Wellington, 1983, 1985).

In issues 55 and 56 of *Australasian Journal of Herpetology* published in 2022 are formal descriptions of dozens of species of small Australian lizards.

Earlier issues of the same journal over the previous decade have formally named well over 100 Australian reptile species at a time when Kaiser (2012a, 2012b), Kaiser (2013) and Kaiser *et al.* (2013) had repeatedly complained that I, Raymond Hoser had already named everything in herpetology that could be named and had left them with no other species to name.

The majority of these new species are in the form of splits of well known and wide-ranging putative taxa, generally supported by morphological, molecular and biogeographical evidence.

Further descriptions of yet more species are either in peer review or otherwise awaiting publication, having already been subjected

to peer review and appropriate editing or changes.

It is somewhat astounding that even for common, well-known and widespread putative taxa, that in 2022, here in Australia there remain taxa not yet formally recognized by science.

In the case of the well-known Copper-tailed Skink *Ctenotus taeniolatus* (White, 1790), with a type locality of New South Wales, this putative taxon occurs from Victoria to North Queensland, along the coast, ranges and nearby slopes.

Wells and Wellington (1985) on page 28 formally named *Ctenotus miowera* from the town with the same name, which is between Proserpine and Bowen, north Queensland in 1985.

While their description was brief to put it bluntly, a cursory inspection of their said species, when compared to the type form of *C. taeniolatus* showed it to be sufficiently divergent morphologically to be regarded as a separate species to *C. taeniolatus*, noting there is no evidence of intermediate forms.

But as for most other skinks formally named by Wells and Wellington in their papers, a group known as the Wolfgang

Wüster gang of thieves has done an excellent job at forcing most other publishing herpetologists to pretend that the works of Wells and Wellington did not exist and likewise that the taxa they identified did not exist either.

In the case of *C. miowera* I have been unable to find a single use of the name as correct for that taxon since the original publication of Wells and Wellington, 1985.

In fact it does not even appear on any so-called synonyms lists! A view of Peter Uetz's allegedly complete "The Reptile Database" at:

<https://reptile-database.reptarium.cz/species?genus=Ctenotus&species=taeniolatus>

Contains no fewer than 8 synonyms of *C. taeniolatus*, including of course the original:

"*Lacerta taeniolata* WHITE 1790: 245"

but no mention of the Wells and Wellington name, or for that matter, even their paper of 1985.

The most recent check of that site was 6 May 2022 and there was definitely no mention of Wells and Wellington (1985) or their putative taxon, on that page.

I should also make it clear, that there is no way known that Uetz had created another page recognising the Wells and Wellington taxon either.

No such webpage existed!

By his own admission, as recently as 2022, Uetz has made sure he has censored more than 1000 papers by numerous authors from his database in line with the dictates of the Wolfgang Wüster gang of thieves, who effectively control Uetz and his "The reptile database" website (Uetz 2022).

A submission to the ICZN in 1987 authored by Richard Shine of Sydney (Shine 1987) and supported by the rest of the Wolfgang Wüster gang of thieves failed in 1991 (ICZN 1991) and a second attempt at the same caper failed in 2001 (ICZN 2001), which should have ended the matter in terms of forced suppression of the works of Wells and Wellington.

However the forced suppression of the works of Wells and Wellington by the Wolfgang Wüster gang of thieves continues to the present date in 2022, even going past another ICZN ruling against the Wolfgang Wüster gang of thieves (ICZN 2021), resulting in an ongoing under estimation of and knowledge of, the reptile species diversity in Australia.

At least one species formally identified by Wells and Wellington (1985), being resurrected from earlier synonymy, that being *Tympanocryptis pinguicollis* (Mitchell, 1948) has now become extinct arising directly from the anti-science suppression actions of the Wolfgang Wüster gang of thieves (Hoser 2019a, 2019b).

The species was ignored by government (as it allegedly did not exist) and quietly slipped into extinction at a time when the government's own dysfunctional "Zoos Victoria" business was milking taxpayers for millions of dollars a year to supposedly "fight extinction" (Hoser 2019b).

In the case of *C. taeniolatus* that there may be more than one species within the range of this putative taxon was flagged again in the paper of Colgan *et al.* (2009), in which they presented compelling molecular evidence for the fact that *C. taeniolatus* consisted of more than one species.

This was also based on a sample of limited geographical range in the overall range of the putative species.

On reading the paper of Colgan *et al.* (2009), it was obvious that the authors had made a deliberate choice not to formally describe the newly identified species, in that they made such a statement.

It is also self-evident that the authors had chosen not to do so, as in doing so, they would also have to revisit previously synonymised forms, of which only one stood out as distinct.

That was *C. miowera* Wells and Wellington, 1985.

Self-evidently and in line with past practices, the authors chose instead to publish their molecular data and pretend that the works of Wells and Wellington did not exist.

MATERIALS AND METHODS

I am not constrained by the dictates and bullying of the Wolfgang Wüster gang of thieves as detailed in Hoser (2007, 2009, 2012a-b, 2013, 2015a-f, 2019a-b), Hawkeswood (2021) and ICZN (1991, 2001 and 2021), but instead am dictated by science and the scientific method.

In the first instance I revisited the papers of Colgan *et al.* (2009), and that of Wells and Wellington (1984 and 1985), as well as the relevant taxonomic references of White (1790), Cogger (2014) and Cogger *et al.* (1983) to confirm a lack of available names for any other forms.

On their own, both Wells and Wellington (1985) and Colgan *et al.* (2009) flagged potential new species in the *C. taeniolatus* complex, but neither had compelling evidence of this, which in turn necessitated inspection of live specimens of both putative forms and at the same time comparative inspection of the type form of *C. taeniolatus* with each of the others.

This was done on a number of trips to Queensland and the relevant parts of Northern New South Wales, as well as reinspection of the type form from the Sydney area, as well as via a review of other literature relevant to *C. taeniolatus*, none of which ultimately assisted me in my investigations and also by way of inspection of good quality photos of specimens with good locality data.

I noted that Colgan *et al.* (2009), found a divergence of 1.75 MYA or more for the relevant candidate species identified in their paper.

RESULTS

Comparative inspection of specimens of *C. taeniolatus* from the Sydney region, being of the type form and the northern New England Region of northern New South Wales, revealed consistent differences between the two enabling me to make species level diagnosis.

A similar inspection of specimens of putative *C. taeniolatus* from the Bowen/Proserpine region of north-east Queensland also confirmed that they were sufficiently divergent from the other two to warrant ongoing recognition as the species first named as *C. miowera* Wells and Wellington, 1985.

Significantly, I found that specimens conforming to this form (*C. miowera*) extended along the Queensland coast, south to Brisbane in south-east Queensland.

Specimens conforming to the putative species identified by Colgan *et al.* (2009) appeared to be restricted to the northern New England region of New South Wales and immediately adjacent southern Queensland only.

As a result of the preceding, I herein formally name as new, the northern New England Region population as *C. robertcooki* sp. nov.

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, spellings 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 (ICZN).

This includes if Latinisation is wrong, apparent spelling mistakes and so on.

Any online citations within this paper, including copied emails and the like, are not as a rule cited in the references part of this paper and have the same most recent viewing and checking date of 6 May 2022 (at which time they were still online as cited).

Unless otherwise stated explicitly, colour and other descriptions apply to living adult specimens of generally good health, as seen by day and not under any form of stress by means such as excessive cool, heat, dehydration, excessive ageing, abnormal

skin or 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 genera, subgenera, species or subspecies 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.

CTENOTUS ROBERTCOOKI SP. NOV.

LSIDurn:lsid:zoobank.org:act:06433CD4-CA71-4164-B6F4-11F979AED2CC

Holotype: A preserved specimen at the Australian Museum in Sydney, New South Wales, specimen number R.157111 collected from Kingsgate Road, about 34km east of Glen Innes, New South Wales, Australia, Latitude -29.80166 S., Longitude 151.98249 E. This government-owned facility allows access to its holdings.

Paratype: A preserved specimen at the Australian Museum in Sydney, New South Wales, specimen number R.159789 collected from near the rubbish tip at Bolivia Hill, (between Glen Innes and Tenterfield) in New South Wales, Australia, Latitude -29.32138 S., Longitude 151.91804 E.

Diagnosis: The species *Ctenotus taeniolatus* (White, 1790) is readily separated from *Ctenotus robertcooki sp. nov.* by the possession of a pale snout with distinctive dark spots or blotches vs none in *C. robertcooki sp. nov.*. Furthermore *C. taeniolatus* has black on the outer side of the two middle whitish lines, versus not so in *C. robertcooki sp. nov.*.

In common with *C. robertcooki sp. nov.*, *C. miowera* Wells and Wellington, 1985 has a dark coloured snout and does not have black on the outer side of the two middle whitish lines. However in contrast to both *C. robertcooki sp. nov.* and *C. taeniolatus* the black band running down the midline of the body in *C. miowera* extends all or most of the way down the (original) tail, versus less than a third of the way down in *C. robertcooki sp. nov.* and less than half way down in *C. taeniolatus*.

The black band running down the midline of the body terminates on the tail less than the length of the extended hind limb and toes in *C. robertcooki sp. nov.*, versus always past this in *C. taeniolatus*.

The black band running down each flank of the tail is thin in *C. robertcooki sp. nov.*, medium in *C. taeniolatus* and thick in *C. miowera*.

C. taeniolatus, *C. robertcooki sp. nov.* and *C. miowera* as a trio are separated from all other East Australian lizards in the genus *Ctenotus* Storr, 1964 by the following suite of characters:

Well defined, black mid-dorsal stripe running from nape past the base of the tail; no prominent spots on the body of the adult; nasal is not or is only very weakly grooved; 18-22 subdigital lamellae under the fourth toe, each with a blunt keel; eight yellow-white longitudinal stripes on the flanks and back, with well-defined brown or black stripes intervening; a narrow pale upper lateral stripe is always continuous from the ear opening to the groin; tail is commonly, but not always a copper-red colour at the posterior end.

Ctenotus taeniolatus (White, 1790) in life is depicted in Hoser (1989) on pages 11 and 88 (at bottom left), Cogger (2014) at page 525 at bottom right (and front cover), Swan, Shea and Sadlier (2009) on page 119 and online at:

<https://www.inaturalist.org/observations/27179813>

and

<https://www.inaturalist.org/observations/41436549>

C. robertcooki sp. nov. in life is depicted in Wilson and Swan (2017) on page 275 at bottom left and online at:

<https://www.inaturalist.org/observations/39394957>

and

<https://www.inaturalist.org/observations/41586030>

and

<https://www.inaturalist.org/observations/103123932>

C. miowera Wells and Wellington, 1985 in life is depicted online at:

<https://www.inaturalist.org/observations/111504510>

Distribution: *C. robertcooki sp. nov.* appears to be restricted to the northern New England region of New South Wales and immediately adjacent southern Queensland in the so-called Granite-belt only. This is an area generally between Armidale in the South in New South Wales and Girraween in the north in Queensland, not including the nearby slopes and plains to the east or west.

Ctenotus taeniolatus as defined herein is distributed generally south and also to the immediate west and south-west of the northern New England region of northern New South Wales, south along the coast, ranges and slopes into north-east Victoria.

C. miowera as defined herein appears to occupy most of the east coast, ranges and nearby slopes of Queensland south of about Cooktown and not including the Granite Belt of the southern highlands near the New South Wales border.

Etymology: *C. robertcooki sp. nov.* is named in honour of Robert Cook, originally of Auburn, New South Wales, in recognition of his services to herpetology. Robert Cook was with Richard Wells when they collected the holotype of *C. miowera* on 24 December 1973.

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CONFLICTS OF INTEREST

None.

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